January 7, 2021

State Clearinghouse Number: 2019039167

SAN RAFAEL
GENERAL PLAN 2040 & DOWNTOWN PRECISE PLAN DRAFT EIR

for the City of San Rafael



SAN RAFAEL
General Plan
2040

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for the City of San Rafael

Prepared by:

PlaceWorks

1625 Shattuck Avenue, Suite 300

Berkeley, California 94709

510.848.3815

In Association With:

Barry Miller Consulting

Environmental Collaborative

Fehr & Peers

Garavaglia Architecture

Opticos Design Incorporated

Tom Origer & Associates

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1. Introduction

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Chapter 14, California Code of Regulations, Section 15378[a], the proposed San Rafael General Plan 2040 (General Plan 2040) and Downtown San Rafael Precise Plan (Downtown Precise Plan) are considered a "project" subject to environmental review. Their implementation is "an action [undertaken by a public agency] which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment." This Draft Environmental Impact Report (Draft EIR) provides an assessment of the potential environmental consequences of adoption and implementation of the General Plan 2040 and the Downtown Precise Plan, herein referred to separately, or together referred to as the "proposed project."

This Draft EIR identifies mitigation measures and alternatives to the proposed project that would avoid or reduce potentially significant impacts. This Draft EIR compares the development potential of the proposed project with the existing baseline condition that is described in detail in each section of Chapter 4, Environmental Analysis, of this Draft EIR. The City of San Rafael (City) is the lead agency for the proposed project. This assessment is intended to inform the City's decision-makers, other responsible agencies, and the public-at-large of the nature of the proposed project and its potential effect on the environment.

1.1 PROPOSED ACTION

If approved by the San Rafael City Council, the proposed project would replace the City's existing General Plan, which has a buildout horizon to 2020, with an updated General Plan and a new Downtown Precise Plan. The proposed project would build off the existing General Plan 2020, which was last comprehensively updated in 2004, to provide a framework for land use, transportation, and conservation decisions through the horizon year of 2040. The proposed project would also introduce new zoning provisions in the Downtown Precise Plan Area, including development regulations and design standards that implement the Downtown Precise Plan.

The environmental analysis in this Draft EIR assumes that the adoption and implementation of the proposed project would result in up to 4,250 new households, 4,460 new residential units, 8,910 new residents, and 4,155 new employees by 2040. Of these, up to 2,100 new households, 2,200 new residential units, 3,570 new residents, and 2,020 new employees would be within the Downtown Precise Plan Area. See Chapter 3, Project Description, of this Draft EIR for additional details on the proposed project. See Chapter 5, Alternatives to the Proposed Project, for a comparison of the current General Plan 2020 and the proposed General Plan 2040.

1.2 EIR SCOPE

This Draft EIR is a program EIR that analyzes the adoption and implementation of the proposed project. This is in contrast to a project-level EIR, which is used to identify and analyze the potential impacts of site-specific construction and operation. CEQA and the CEQA Guidelines allow lead agencies to prepare different types of EIRs for varying situations and intended uses. Section 15168 of the CEQA Guidelines states that program EIRs are appropriate when a project consists of a series of actions related to the issuance of rules, regulations, and other planning criteria.

In this case, the proposed project that is the subject of this Draft EIR consists of long-term plans and regulatory changes that would be implemented over time as policies and regulations guiding future development activities and City actions. No specific development projects are proposed as part of the proposed project. Therefore, as a program EIR, it is not project specific and does not evaluate the impacts of individual projects that may be proposed in the future under the General Plan 2040 and Downtown Precise Plan. However, where the program EIR addresses the program's effects as specifically and comprehensively as is reasonably possible, later activities that are within the scope of the effects examined in the program EIR, may qualify for a streamlined environmental review process or may be exempt from environmental review.[1]

When a program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the program EIR into the subsequent activities.[2] If a subsequent activity would have effects that are not within the scope of the program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, a Mitigated Negative Declaration, or an EIR unless the activity qualifies for an exemption. For these subsequent environmental review documents, this program EIR will serve as the first-tier environmental analysis to streamline future environmental review.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 DRAFT EIR

Pursuant to CEQA Section 21080(d) and CEQA Guidelines Section 15063, the City determined that the proposed project could result in potentially significant environmental impacts and that a program EIR would be required. In compliance with CEQA Section 21080.4, the City circulated the Notice of Preparation (NOP) of an EIR for the proposed project to the Office of Planning and Research (OPR) State Clearinghouse (SCH) and interested agencies and persons on March 29, 2019, for a 30-day review period. A public scoping meeting was held on April 23, 2019, at 7:00 p.m. at the San Rafael City Council Chambers. The NOP and scoping process solicited comments regarding the scope of the Draft EIR from responsible and trustee agencies and interested parties. Appendix A, Notice of Preparation and Scoping

[1] CEQA Guidelines Section 15168(c) and CEQA streamlining provisions.
[2] CEQA Guidelines Section 15168(c)(3) and CEQA streamlining provisions.

Comments, of this Draft EIR contains the NOP and the comments received by the City in response to the NOP.

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 60-day comment period starting January 7, 2021 and ending March 9, 2021. During the comment period, the public is invited to provide written comments on the Draft EIR via mail or email to the City of San Rafael Planning Division by 5:00 p.m. on March 9, 2021. Comments should be submitted as follows:

- Written: Barry Miller, Consulting Project Manager
  City of San Rafael, Community Development Department
  1400 Fifth Ave, 3rd Floor
  San Rafael, California 94901
- Phone: (415) 485-3423
- Email: Barry.Miller@cityofsanrafael.org with "*General Plan 2040 and Downtown Precise Plan EIR*" as the subject line.

1.3.2 FINAL EIR

Upon completion of the 60-day review period for the Draft EIR, the City will review all written comments received and prepare written responses to each comment on the adequacy of the Draft EIR. A Final EIR will then be prepared, which contains all of the comments received, responses to comments raising environmental issues, and any changes to the Draft EIR. The Final EIR will then be presented to the San Rafael Planning Commission where a public hearing will allow for public comment on the Final EIR and to consider recommendation for certification of the Final EIR. Following the public hearing, the Final EIR will be presented to City Council for consideration of the certification as the environmental document for the proposed project. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearing, which is tentatively scheduled for Tuesday, March 9, 2021.

All responses to comments submitted on the Draft EIR by agencies will be provided to those agencies at least 10 days prior to certification of the EIR. The City Council will make findings regarding the extent and nature of the impacts as presented in the EIR. The EIR will need to be certified as having been prepared in compliance with CEQA by the City prior to making a decision to approve or deny the proposed project. Public input is encouraged at all public hearings before the City.

If the City Council certifies the EIR, it may then consider action on the proposed project. If approved, the City Council would adopt and incorporate all feasible mitigation measures identified in the EIR and may also require other feasible mitigation measures.

In some cases, the City Council may find that certain mitigation measures are outside the jurisdiction of the City to implement, or that no feasible mitigation measures have been identified for a given significant impact. In that case, the City Council would have to adopt a statement of overriding considerations that determines that economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable, significant effects on the environment.

1.3.3 MITIGATION MONITORING

CEQA Section 21081.6 requires that the lead agency adopt a Mitigation Monitoring and Reporting Program (MMRP) for any project for which it has made findings pursuant to CEQA Section 21081. Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR. If mitigation measures are required, the MMRP for the proposed project will be completed congruently as part of the Final EIR process.

1.4 USE OF GENERAL PLAN EIR

1.4.1 TIERING PROCESS

CEQA includes several provisions to streamline the environmental review of qualified projects based on several factors. These include where environmental review has already occurred (e.g., a program-level EIR), which could apply to future development in the EIR Study Area.

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered documents by eliminating repetitive analyses of issues that were adequately addressed in the program EIR and by incorporating those analyses by reference.

Section 15168(d) of the CEQA Guidelines provides for simplifying the preparation of environmental documents by incorporating by reference analyses and discussions. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to effects that were not analyzed as significant in the prior EIR or that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152[d]).

By tiering from the program EIR, the environmental analysis for a future project would rely on the program EIR for the following:

1. A discussion of general background and setting information for environmental topic areas;
2. Overall growth-related issues;
3. Issues that were evaluated in sufficient detail in the program EIR for which there is no significant new information or change in circumstances that would require further analysis;
4. Assessment of cumulative impacts; and
5. Mitigation measures adopted and incorporated into the proposed project.

1.4.1.1 BASE RESOURCE FOR GENERAL PLAN IMPLEMENTATION AND REVIEW OF FUTURE DEVELOPMENT PROJECTS

As a Program EIR, this document and the mitigation measures presented herein, will be used as a guide for implementing the General Plan 2040 policies and programs, as well as adopting changes in City codes, regulations, and practices. For some of the topic areas covered in this Program EIR (e.g., air quality, noise and vibration, hazards/hazardous materials, and biological resources) mitigation measures are recommended to carry forward and expand on current City policies, regulations, and best practices. For specific topic areas such as cultural (historic) resources, new mitigation measures are recommended to streamline environmental review of future development projects within the Downtown Precise Plan Area.

This Program EIR will also be used as a base resource for reviewing future development projects. This document will assist in guiding the assessment of projects and provide environmental review tiering, where appropriate. Currently, the City completes the following steps in reviewing development projects, which will be carried forward under the adopted General Plan 2040:

- Project Consistency with the General Plan and City Codes. When a new development project is filed with the City, it is reviewed for completeness and consistency with the General Plan goals, policies, and programs, and City codes and practices. Because City policies, programs, codes, and practices will be amended to incorporate the mitigation measures presented in this Program EIR, development projects will inherently implement these measures to: a) mitigate environmental impacts; and b) achieve consistency with the General Plan and compliance with City codes.
- Projects Subject to Environmental Review. For future development projects subject to environmental review, the resources contained within this EIR and carried forward in the General Plan 2040 will guide the scope of this review. For project level environmental review, many of the topic areas studied in this Program EIR will adequately cover and provide environmental clearance for the project. However, the preparation of site-specific studies and reports may be necessary based on the location and nature of the development project. The resources presented in this Program EIR will assist in determining when and where a special, site-specific study is warranted. One example is shown on Figure 4.4-2, Special Status Plant Species and Sensitive Natural Communities, and Figure 4.4-3, Special Status Animal Species and Critical Habitat, of this Draft EIR. These figures map geographic areas where special status species are known to exist, which will provide guidance on where and when to require a technical study of biological resources.
- Projects Exempt from Environmental Review. CEQA includes a long list of environmental review exemptions. Most of the future development projects will likely be exempt from environmental review as the project impacts will be adequately covered by this Program EIR. However, many of the CEQA exemptions require compliance with specific criteria for the development project to qualify for the exemption. The resources contained within this EIR and carried forward in the General Plan 2040 will be used to assist in determining if the CEQA-prescribed criteria have been met to quality for the exemption. One example of a CEQA exemption is for development projects located in a "Transit Priority Area" (TPA). Further information on CEQA exemptions for development in a TPA is provide in Chapter 4, Environmental Analysis. Several chapters of this Draft EIR provide assistance in determining if these exemption criteria can be met.

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2. *Executive Summary*

This chapter presents an overview of the proposed General Plan 2040 and Downtown Precise Plan, herein referred to separately, or together referred to as the "proposed project." This executive summary also provides a summary of the alternatives to the proposed project, identifies issues to be resolved, areas of controversy, and conclusions of the analysis in Chapters 4 through 4.18 of this Draft Environmental Impact Report (EIR). For a complete description of the proposed project, see Chapter 3, Project Description, of this Draft EIR. For a discussion of alternatives to the proposed project, see Chapter 5, Alternatives to the Proposed Project, of this Draft EIR.

This Draft EIR addresses the environmental effects associated with adoption and implementation of the proposed project. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An EIR is a public document designed to provide the public, local, and State government decision-makers with an analysis of potential environmental consequences to support informed decision-making.

This Draft EIR has been prepared pursuant to the requirements of CEQA[1] and the State CEQA Guidelines[2] to determine if approval of the identified discretionary actions and related subsequent development could have a significant impact on the environment. The City of San Rafael (City), as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel and review of all technical reports. Information for this Draft EIR was obtained from on-site field observations; discussions with public service agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, greenhouse gas emissions, noise, and transportation).

2.1 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared to assess the environmental effects associated with implementation of the proposed project. The main objectives of this document as established by CEQA are:

- To disclose to decision-makers and the public the significant environmental effects of proposed activities.
- To identify ways to avoid or reduce environmental damage.

[1] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000–21177.

[2] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387.

- To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- To disclose to the public reasons for agency approval of projects with significant environmental effects.
- To foster interagency coordination in the review of projects.
- To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in the CEQA statute and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts. An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and adopt a Statement of Overriding Considerations[3] if the proposed project would result in significant impacts that cannot be avoided.

2.2 REPORT ORGANIZATION

This Draft EIR is organized into the following chapters:

- Chapter 1: Introduction. Provides an overview describing the Draft EIR document.
- Chapter 2: Executive Summary. Summarizes environmental consequences that would result from implementation of the proposed project, describes recommended mitigation measures, and indicates the level of significance of environmental impacts with and without mitigation.
- Chapter 3: Project Description. Describes the proposed project in detail, including the characteristics, objectives, and the structural and technical elements of the proposed action.
- Chapter 4: Environmental Analysis. Organized into 18 subchapters corresponding to the environmental resource categories identified in CEQA Guidelines Appendix G, Environmental Checklist, this chapter provides a description of the physical environmental conditions in the vicinity of the proposed project as they existed at the time the Notice of Preparation was published and by referencing historic conditions that are supported with substantial evidence, from both a local and regional perspective. Additionally, this chapter provides an analysis of the potential environmental impacts of the proposed project and recommended mitigation measures, if required, to reduce the impacts to less than significant where possible, and to reduce their magnitude or significance when

[3] CEQA Guidelines Section 15093.

impacts cannot be reduced to a less-than-significant level. The environmental setting included in each subchapter provides baseline physical conditions, which provide a context, which the lead agency uses to determine the significance of environmental impacts resulting from the proposed project. Each subchapter also includes a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the proposed project; and the potential cumulative impacts associated with the proposed project.

- Chapter 5: Alternatives to the Proposed Project. Considers alternatives to the proposed project, including the CEQA-required "No Project Alternative" and "environmentally superior alternative."
- Chapter 6: CEQA-Required Conclusions and Findings. Discusses growth inducement, cumulative impacts, unavoidable significant effects, and significant irreversible changes as a result of the proposed project.
- Chapter 7: Organizations and Persons Consulted. Lists the people and organizations that were contacted during the preparation of this EIR for the proposed project.
- Chapter 8: Common Acronyms and Abbreviations. Lists the common acronyms and abbreviations found in this Draft EIR
- Appendices: The appendices for this document contain the following supporting documents:
  - Appendix A: Notice of Preparation and Scoping Comments
  - Appendix B: Proposed General Plan Goals, Policies, and Programs
  - Appendix C: Staff Recommended Land Use Map Changes
  - Appendix D: Air Quality and Greenhouse Gas Emissions Data
  - Appendix E: Biological Resources Data
  - Appendix F: Cultural Resources Data
  - Appendix G: Hazardous Materials Data
  - Appendix H: Noise Data
  - Appendix I: Transportation Data

2.3 TYPE AND PURPOSE OF THIS DRAFT EIR

As described in the CEQA Guidelines, different types of EIRs are used for varying situations and intended uses. Because of the long-term planning horizon of the proposed project and the permitting, planning, and development actions that are related both geographically and as logical parts in the chain of contemplated actions for implementation, this Draft EIR has been prepared as a program EIR for the proposed project, pursuant to CEQA Guidelines Section 15168. Once the program EIR has been certified, subsequent activities within the program must be evaluated to determine whether additional CEQA review is needed. However, where the program EIR addresses the program's effects as specifically and comprehensively as is reasonably possible, later activities that are within scope of the effects examined in the program EIR, may qualify for a streamlined environmental review process or may be exempt from environmental review. When a program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the program EIR into the

subsequent activities.[4] If a subsequent activity would have effects that are not within the scope of the program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, a Mitigated Negative Declaration, or an EIR unless the activity qualifies for an exemption. For these subsequent environmental review documents, this program EIR will serve as the first-tier environmental analysis to streamline future environmental review.

2.4 SUMMARY OF PROPOSED PROJECT

The proposed project would replace the City's existing General Plan, which has a buildout horizon to 2020, with an updated General Plan and a new Downtown Precise Plan. The proposed project would also introduce new zoning provisions in the Downtown Precise Plan Area, including development regulations and design standards that implement the Downtown Precise Plan.

The existing General Plan 2020 was prepared in 2004. It involved a major overhaul and modernization of the prior General Plan 2000 that was adopted in 1988. The City determined that the General Plan 2020 provided a good foundation for General Plan 2040. The General Plan 2020 included a comprehensive review process, resulting in a broad range of community goals and policies. Many of the community issues vetted in General Plan 2020 are still relevant, well addressed, and do not require major change. Therefore, the approach to the proposed General Plan 2040 is not a comprehensive update, rather, it builds off of the current General Plan 2020 by incorporating the topics that are now required by State mandate and revises relevant policies and programs to meet those requirements. It also incorporates regional forecasts for 2040, thus moving the planning horizon forward by 20 years. Chapter 3, Project Description, of this Draft EIR includes a detailed description of the proposed project.

2.5 SUMMARY OF PROJECT ALTERNATIVES

This Draft EIR analyzes alternatives to the proposed project that are designed to reduce the significant environmental impacts of the proposed project and feasibly attain most of the proposed project objectives. There is no set methodology for comparing the alternatives or determining the environmentally superior alternative under CEQA. Identification of the environmentally superior alternative involves weighing and balancing all of the environmental resource areas by the City. The following alternatives to the proposed project were considered and analyzed in detail:

- Alternative A: No Project (Current General Plan). Consistent with Section 15126.6(e)(2) of the CEQA Guidelines, Alternative A presents the No Project scenario. Accordingly, under this alternative the proposed project would not be adopted or implemented, and further development in the city would continue to be subject to existing policies, regulations, development standards, and land use designations under the existing General Plan 2020.
- Alternative B: Greater Residential Growth. Alternative B presents greater residential and fewer jobs when compared to the proposed project. This alternative would increase the number of housing units

[4] CEQA Guidelines Section 15168[c] and CEQA streamlining provisions.

and population but would reduce the number of employees when compared to the proposed project. This alternative would include the same proposed General Plan 2040 land use designations as the proposed project except for two additional locations that do not currently allow for housing. Under this alternative, these two locations would allow for housing. Because this alternative includes more housing, at least some light industrial, office, and retail land uses would potentially be displaced.

- Alternative C: Lower Residential Growth. Alternative C presents a fewer residential and greater jobs when compared to the proposed project. This alternative would reduce the number of housing units and population but would increase the number of employees when compared to the proposed project. This alternative excluded several Housing Element sites and Downtown Precise Plan sites included in the proposed project. This alternative would convert less commercial acreage to housing. This alternative would include the same proposed General Plan 2040 land use designations as the proposed project and differ only in the presumed rate of growth.

Chapter 5, Alternatives to the Proposed Project, of this Draft EIR, includes a complete discussion of these alternatives. As discussed in Chapter 5, Alternative B, Greater Residential Growth, is the Environmentally Superior Alternative pursuant to CEQA Guidelines Section 15126.6.

2.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the City of San Rafael, as lead agency, related to:

- Whether this Draft EIR adequately describes the environmental impacts of the proposed project.
- Whether the benefits of the proposed project override environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance.
- Whether the proposed land use changes are compatible with the character of the existing area.
- Whether the identified goals, policies, or mitigation measures should be adopted or modified.
- Whether there are other mitigation measures that should be applied to the proposed project besides those goals, policies, or mitigation measures identified in the Draft EIR.
- Whether there are any alternatives to the proposed project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic objectives.

2.7 AREAS OF CONTROVERSY

The City issued a Notice of Preparation (NOP) on March 29, 2019. The CEQA-mandated scoping period for this EIR was between March 29, 2019, and April 29, 2019, during which interested agencies and the public could submit comments about the potential environmental impacts of the proposed project. During this

time, the City received comment letters from a variety of State and local agencies as well as several organizations and members of the public.

The following is a discussion of issues that are likely to be of particular concern to agencies and interested members of the public during the environmental review process. Though every concern applicable to the CEQA process is addressed in this Draft EIR, this list is not necessarily exhaustive, but rather attempts to capture concerns that are likely to generate the greatest interest based on the input received during the scoping process.

- Potential barriers to implementing evacuation plans in the event of wildfire.
- Watershed restoration.
- Status of air quality and reduction of greenhouse gas emissions.
- Provision of adequate housing.
- Protection of the shoreline and of development related to sea level rise.
- Vehicular circulation and traffic impacts.
- Visual impacts of higher-density development.
- Impacts of development on public services.
- Effects of cumulative development.

2.8 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Table 2-1 summarizes the conclusions of the environmental analysis in this Draft EIR and presents a summary of significant impacts and mitigation measures identified. It is organized to correspond with the environmental issues where impacts were found to be significant. These topics include air quality, biological resources, cultural and tribal cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, noise and vibration, and transportation. All other topics were determined to be less than significant, and no mitigation measures were required. Table 2-1 is arranged in four columns: (1) impact; (2) significance without mitigation; (3) mitigation measures; and (4) significance with mitigation. For a complete description of potential impacts, including those where no mitigation measures are required, please refer to the specific discussions in Chapters 4.1 through 4.18**.**

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
4.3 AIR QUALITY			
Impact AIR-2.1: Construction activities associated with potential future development could potentially violate an air quality standard or cumulatively contribute to an existing or projected air quality violation.	S	**Mitigation Measure AIR-2.1:** To reduce temporary increases in criteria air pollutant emissions (NO_X) during the construction phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.4 (Particulate Matter Pollution Reduction) to be implemented as part of the project approval process: ▪ **New Program:** Require projects that exceed the BAAQMD screening sizes to evaluate project-specific construction emissions in conformance with the BAAQMD methodology and if construction-related criteria air pollutants exceed the BAAQMD thresholds of significance, require the project applicant to mitigate the impacts to an acceptable level.	LTS
Impact AIR-2.2: Operational activities associated with potential future development could cumulatively contribute to the non-attainment designations of the San Francisco Bay Area Air Basin.	S	**Mitigation Measure AIR-2.2:** To reduce long-term increases in air pollutants during the operation phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2 (Land Use Compatibility and Building Standards) be implemented as part of the project approval process: ▪ **New Program:** Require projects that exceed the BAAQMD screening sizes to evaluate project-specific operation emissions in conformance with BAAQMD CEQA Guidelines, and if operation-related air pollutants exceed the BAAQMD-adopted thresholds of significance, require the project applicants to mitigate the impact to an acceptable level.	SU
Impact AIR-3.1: Construction activities associated with potential future development could expose nearby receptors to substantial concentrations of toxic air contaminants.	S	**Mitigation Measure AIR-3.1a:** Implement Mitigation Measure AIR-2.1. **Mitigation Measure AIR-3.1b:** To ensure sensitive receptors are not exposed to toxic air contaminant emissions during the construction phase for discretionary development projects that are subject to CEQA that exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to	LTS

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		support Policy C-2.2: (Land Use Compatibility and Building Standards) be implemented as part of the project approval process: ▪ **New Program:** As recommended by the California Air Resources Board, require projects that would result in construction activities within 1,000 feet of residential and other land uses that are sensitive to toxic air contaminants (e.g., hospitals, nursing homes, day care centers), as measured from the property line of the project, to prepare a construction health risk assessment in accordance with policies and procedures of the Office of Environmental Health Hazard Assessment and the BAAQMD CEQA Guidelines that identifies mitigation measures are capable of reducing potential cancer and noncancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0).	
Impact AIR-3.2. Operational activities associated with potential future development could expose sensitive receptors to substantial toxic air contaminant concentrations from nonpermitted sources.	S	**Mitigation Measure AIR-3.2**: To ensure sensitive receptors are not exposed to toxic air contaminant emissions during the operation phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2: (Land Use Compatibility and Building Standards) be implemented as part of the project approval process: ▪ **New Program:** Require applicants for industrial or warehousing land uses or commercial land uses that would generate substantial diesel truck travel (i.e., 100 diesel trucks per day or 40 or more trucks with diesel-powered transport refrigeration units per day) to contact BAAQMD to determine the appropriate level of operational health risk assessment (HRA) required. If required, the operational HRA shall be prepared in accordance with the Office of Environmental Health Hazard Assessment and BAAQMD requirements and mitigated to an acceptable level.	SU
4.4 BIOLOGICAL RESOURCES			
Impact BIO-1: Impacts to special-status species or the inadvertent loss of bird nests in active use, which would conflict with the federal Migratory Bird Treaty Act and California Fish and Game Code, could occur as a result of potential new development.	S	**Mitigation Measure BIO-1:** To ensure sensitive species of any kind are not adversely impacted by implementation of the proposed project, the City shall adopt revisions to General Plan Program C-1.13B and shall adopt a new Program or modify an existing program to clarify the need for special-status species surveys and to ensure avoidance of nests of native birds in active use to support Policy C-1.13 (Special Status Species). Revisions to Program C-	LTS

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		1.13B are shown in double-underlined text while the new Program is in standard text: ▪ **Modified Program C-1.13B: Surveys for Special-Status Species**. Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of special status species prior to development approval. Such surveys should be conducted by a qualified biologist and occur prior to development-related vegetation removal or other habitat modifications. ▪ **New or Modified Program: Avoidance of Nesting Birds.** Nests of native bird nests in active use should be avoided in compliance with State and federal regulations. For new development sites where nesting birds may be present, vegetation clearing and construction should be initiated outside the bird nesting season (March 1 through August 31) or preconstruction surveys should be conducted by a qualified biologist in advance of any disturbance. If active nests are encountered, appropriate buffer zones should be established based on recommendations by the qualified biologist and remain in place until any young birds have successfully left the nest.	
Impact BIO-2 Impacts to riparian areas, drainages, and sensitive natural communities could occur from potential future development where natural habitat remains.	S	**Mitigation Measure BIO-2:** To ensure sensitive riparian areas, drainages, and sensitive natural communities are not impacted through implementation of the proposed project, the City shall adopt the following General Plan Program or amend other programs to support Policy C-1.12 (Native or Sensitive Habitats) to ensure that sensitive natural communities are identified and addressed as part of future development review: ▪ **New or Modified Program: Surveys for Sensitive Natural Communities.** Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of sensitive natural communities prior to development approval. Such surveys should be conducted by a qualified biologist and occur prior to development-related vegetation removal or other habitat modifications.	LTS
Impact BIO-3 Potential future development could result in direct and indirect impacts to wetland habitat.	S	**Mitigation Measure BIO-3:** To ensure that sensitive wetland habitats are not impacted directly or indirectly through implementation of the proposed project, the City shall adopt the following General Plan Program or amend other programs to support Policy C-1.1 (Wetlands Protection) to ensure that	LTS

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
		jurisdictional waters are identified and addressed as part of future development review: ▪ **New or Modified Program: Surveys for Regulated Waters.** Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of regulated waters prior to development approval. Such surveys should be conducted by a qualified wetland specialist and occur prior to development-related vegetation removal or other habitat modifications.	
Impact BIO-4 Potential future development in the EIR Study Area could result in impacts on the movement of wildlife and potential for increased risk of bird collisions.	S	**Mitigation Measure BIO-4:** To ensure that potential future development under implementation of the proposed project does not result in impacts on the movement of wildlife, the City shall adopt the following General Plan programs or amend other programs to support Policy C-1.11 (Wildlife Corridors) so that important movement corridors and the potential for increased risk of bird collisions are identified and addressed as part of future development review: ▪ **New or Modified Program: Surveys for Wildlife Movement Corridors.** Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of important wildlife corridors prior to development approval. Such surveys should be conducted by a qualified biologist and occur prior to development-related vegetation removal or other habitat modifications. ▪ **New or Modified Program: Consider Risk of Bird Collision.** Require that taller structures be designed to minimize the potential risk of bird collisions using input from the latest bird-safe design guidelines and best management practice strategies to reduce bird strikes. ▪ **New Program: Bird Safe Design Ordinance.** Develop and adopt a Bird Safe Design ordinance to provide specific criteria and refined guidelines as part of design review of new buildings and taller structures.	LTS
4.5 CULTURAL AND TRIBAL CULTURAL RESOURCES			
Impact CULT-1: Future development in San Rafael on sites that contain a historic resource may cause the demolition, destruction, or alteration of a historic resource such that the significance of the resource is	S	**Mitigation Measure CULT-1:** To ensure sites that contain a historic resource that are subject to demolition, destruction, or alteration, are mitigated to an acceptable level, the City shall amend Program CDP-5.1A (Preservation Ordinance).	SU

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
"materially impaired." Such adverse changes or potential adverse changes in the significance of a CEQA-defined historic resource would constitute a significant impact.		▪ **Modified Program CDP-5.1A: Update Historic Preservation Ordinance**. The City of San Rafael shall modify the City's Historic Preservation Ordinance to include updated procedures to mitigate impacts from the demolition, destruction, or alteration of historic resources.	
Impact CULT-2: Implementation of the proposed project could have the potential to cause a significant impact to an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	S	**Mitigation Measure CULT-2:** To ensure sites where archeological resources are unearthed during the construction phase of development projects are mitigated to an acceptable level, the City shall amend Program CDP-5.13A (Archeological Resources Ordinance). ▪ **Modify Program CDP-5.13A: Update Archeological Resources Ordinance.** The City of San Rafael shall modify the City's Archeological Resources Ordinance to include construction best management practices to follow if a potentially significant archaeological resource is encountered during ground disturbing activities.	LTS
Impact CULT-3: Ground-disturbing activities as a result of future development in the EIR Study Area could encounter human remains, the disturbance of which could result in a significant impact under CEQA.	S	**Mitigation Measure CULT-3:** To ensure human remains that are unearthed during the construction phase of development projects are protected, the City shall adopt a new Program to support Policy CDP-5.13 (Protection of Archaeological Resources). ▪ **New Program: Human Remains.** Any human remains encountered during ground-disturbing activities would be required to be treated in accordance with California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, and the California Code of Regulations Section 15064.5(e) (CEQA), which state the mandated procedures of conduct following the discovery of human remains.	LTS
Impact CULT-4: Ground-disturbing activities as a result of future development under the proposed project could encounter Tribal Cultural Resources, the disturbance of which could result in a significant impact under CEQA.	S	**Mitigation Measure CULT-4:** Implement Mitigation Measures CULT-2 and CULT-3.	LTS
4.7 GEOLOGY SOILS			
Impact GEO-6: Construction activities associated with potential future development could have the potential to	S	**Mitigation Measure GEO-6:** To ensure sensitive and unique paleontological resources are not directly or indirectly affected in the event that such resources are unearthed during project grading, demolition, or building (such	LTS

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
directly or indirectly affect a unique paleontological resource.		as fossils or fossil-bearing deposits), the City shall adopt the following new General Plan Policy and associated Program: ▪ **New Policy: Paleontological Resource Protection.** Prohibit the damage or destruction of paleontological resources, including prehistorically significant fossils, ruins, monuments, or objects of antiquity, that could potentially be caused by future development. ▪ **New Program: Paleontological Resource Mitigation Protocol.** The City shall prepare and adopt a list of protocols in accordance with Society of Vertebrate Paleontology standards that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed	
4.8 GHG Emissions			
Impact GHG-1: Implementation of the proposed project may not meet the long-term GHG reduction goal under Executive Order S-03-05.	S	Implementation of the General Plan 2040 goals, policies, and programs would ensure that the City's GHG emissions are reduced to the degree feasible. Policy C-5.1, Climate Change Action Plan, requires the City maintain and periodically update the CCAP. Policy C-5.1 is supported by Programs C-5.1A, C-5.1B, and C-5.1C, which require annual progress reports, quarterly forums, and identification of funding sources. Implementation of this Policy and its associated Programs would ensure the City is monitoring the CCAP's progress toward achieving the City's GHG reduction target and requires amendments if the CCAP is not achieving the specified level. The update would ensure the CCAP is on the trajectory consistent with the GHG emissions-reduction goal established under Executive Order S-03-05 for year 2050 and the latest applicable statewide legislative GHG emission reduction that may be in effect at the time of the CCAP update (e.g., Senate Bill 32 for year 2030). GHG inventories of existing and forecast year GHG levels. However, at this time, there is no plan that extends beyond 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology. Advancement in technology in the future could provide additional reductions to allow the state and City to meet the 2050 goal; however, no additional statewide measures are currently available.	SU

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
4.9 HAZARDS AND HAZARDOUS MATERIALS			
Impact HAZ-4: Potential future development could result in construction and operation activities on sites with known hazardous materials and, as a result, create a significant hazard to the public or the environment.	S	**Mitigation Measure HAZ-4**: To ensure that construction on sites with known contamination pursuant to the lists compiled pursuant to Government Code Section 65962.5, which include, but are not limited to, the Department of Toxic Substance Control's online EnviroStor database and the State Water Resource Control Board's online GeoTracker database, do not result in or create a significant hazard to the public or the environment, the City shall adopt the following General Plan programs to support Policy S-5.4 (Development on Formerly Contaminated Sites) to be implemented as part of the project approval process: ▪ **New Program: Environmental Site Management Plan.** Require the preparation of an Environmental Site Management Plan (ESMP) in consultation with the San Francisco Bay Regional Water Quality Control Board and/or the Department of Toxic Substance Control, for proposed development on sites with known contamination of hazardous materials pursuant to Government Code Section 65962.5, which include, but are not limited to, the Department of Toxic Substance Control's online EnviroStor database and the State Water Resource Control Board's online GeoTracker database. ▪ **New Program: Soil Vapor Intrusion Assessment**. For sites with potential residual contamination in soil or groundwater that are planned for redevelopment with an overlying occupied building, a soil vapor intrusion assessment shall be performed by a licensed environmental professional. If the results of the vapor intrusion assessment indicate the potential for significant vapor intrusion into an occupied building, project design shall include vapor controls or source removal, as appropriate, in accordance with regulatory agency requirements.	LTS

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
4.13 NOISE AND VIBRATION			
Impact NOISE-1: Construction activities associated with potential future development could expose sensitive receptors in close proximity to a construction site to noise that exceed the City's noise limits established in San Rafael Municipal Code Chapter 8.13, Noise.	S	**Mitigation Measure NOISE-1:** To ensure receptors that are sensitive to construction noise are not exposed to unacceptable construction noise levels as defined in San Rafael Municipal Code Chapter 8.13, Noise, for discretionary development projects that are subject to CEQA the City shall amend Program N-1.9B (Construction Noise) as follows: ▪ **Modified Program: Construction Best Management Practices.** The City shall establish a list of construction best management practices to be implemented during the construction phase and incorporated into San Rafael Municipal Code Chapter 8.13, Noise. The City of San Rafael Building Division shall verify that these notations, as appropriate, are on the demolition, grading, and construction plans prior to issuance of demolition, grading and/or building permits.	LTS
Impact NOISE-2a: Construction activities associated with potential future development could generate excessive short-term vibration levels during project construction.	S	**Mitigation Measure NOISE-2a:** To ensure receptors, both buildings and people, that are sensitive to vibration from construction noise are not exposed to unacceptable vibration levels from discretionary development projects that are subject to CEQA the City shall revise General Plan Program N-1.11A (Vibration-Related Conditions of Approval) to support Policy N-1.11 (Vibration) be implemented as part of the project approval process. Revisions to Program N-1.11A are shown in double-underlined text: ▪ **Modified Program N-1.11A: Construction Vibration-Related Conditions of Approval.** Adopt standard conditions of approval in San Rafael Municipal Code Chapter 8.13, Noise, that require the Federal Transit Administration (FTA) criteria for acceptable levels of groundborne vibration for various types of buildings be applied to reduce the potential for vibration-related construction impacts for development projects near sensitive uses such as older or historically significant buildings and structures, housing, and schools. If vibration levels exceed the FTA limits, the condition of approval shall identify alternative uses, such as drilling piles instead of pile driving and static rollers instead of vibratory rollers. Construction vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects.	LTS

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
Impact NOISE-2b: Operational activities associated with potential future development could generate excessive long-term vibration levels.	S	**Mitigation Measure NOISE-2b:** To ensure receptors that are sensitive to operational vibration from commercial or industrial uses are not exposed to unacceptable vibration levels from discretionary development projects that are subject to CEQA the City shall, shall adopt the following General Plan Program to support Policy N-1.11 (Vibration) be implemented as part of the project approval process: ▪ **New Program:** Adopt standard conditions of approval in San Rafael Municipal Code Chapter 8.13, Noise, that require the Federal Transit Administration (FTA) criteria for acceptable levels of groundborne vibration from commercial or industrial uses to reduce long-term vibration impacts at existing or potential future sensitive uses such as uses with vibration-sensitive equipment (e.g., microscopes in hospitals and research facilities) or residences. Operational vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects.	LTS
4.16 TRANSPORTATION			
Impact TRAN-1a Implementation of the proposed project would result in a significant land use VMT impact for Total VMT and Work VMT due to forecast land use growth through 2040, based on a comparison of the VMT rate increment for Total VMT Per Service Population and Work VMT Per Employee to the corresponding average baseline rates for the full nine-county Bay Area.	S	**Mitigation Measure TRAN-1a***:* To reduce vehicle miles traveled the City shall modify Program M-3.3A (TDM Program Guidelines) to support achievement of the VMT reduction Standard: ▪ **Modified Program 3-3A: Update Trip Reduction Ordinance. ~~Develop TDM Program Guidelines.~~** The City of San Rafael shall modify the Trip Reduction Ordinance (TRO) to reflect General Plan 2040 Policy M-3.1 and focus on VMT reduction measures. The amended TRO shall include the City's VMT reduction thresholds, VMT reduction measures and program guidelines, and a VMT trip reduction monitoring process. The TRO shall be updated a minimum of every five years to reflect changes in baseline VMT values, VMT thresholds, VMT reduction measures, and the monitoring process. The modified TRO shall reflect the process and methodology for conducting the VMT analysis for development projects as described in the City's Transportation Analysis (TA) Guidelines.	SU
Impact TRAN-1b: Implementation of the proposed project would result in a significant road network VMT impact due to the planned capacity of the roadway system.	S	**Mitigation Measure TRAN-1b:** Implement Mitigation Measure TRAN-1a.	SU

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance without Mitigation	Mitigation Measure	Significance with Mitigation
Impact TRAN-6: Implementation of the proposed project could cumulatively contribute to regional VMT.	S	**Mitigation Measure TRAN-6:** Implement Mitigation Measure TRAN-1a.	SU

3. *Project Description*

This chapter of the Draft Environmental Impact Report (EIR) describes the proposed San Rafael General Plan 2040 (General Plan 2040) and Downtown San Rafael Precise Plan (Downtown Precise Plan), hereinafter referred to as "proposed project," pursuant to the California Environmental Quality Act (CEQA).[1] The proposed project includes potential new development associated with implementation of General Plan 2040 and the Downtown Precise Plan. This includes previously approved projects, the remaining buildout potential in the current Association of Bay Area Governments (ABAG) 2040 projections, and additional capacity related to policy updates and map changes. The potential buildout of the City of San Rafael is discussed in Section 3.8, 2040 Development Projections, of this chapter.

This Draft EIR has been completed in accordance with CEQA, which requires that State and local public agencies analyze proposed projects to determine potential impacts on the environment and disclose any such impacts.[2] The City of San Rafael (City) is the lead agency for the environmental review of the proposed project. Chapter 4, Environmental Analysis, of this Draft EIR provides a programmatic analysis of the environmental impacts associated with projected development under the proposed project by 2040. Program-level environmental review documents are appropriate when a project consists of a series of actions related to the issuance of rules, regulations, and other planning criteria.[3] The proposed project that is the subject of this EIR consists of long-term plans and zoning changes that will be implemented as policy documents guiding future development activities and City actions. Because this is a program-level EIR, this document does not evaluate the impacts of specific, individual developments that may be allowed under the General Plan. Future projects may require separate environmental review as described in Section 1.4, Tiering Process, in Chapter 1, Introduction, of this Draft EIR.

This chapter provides a detailed description of the proposed project, including the location, setting, and characteristics of the EIR Study Area, as well as the project objectives, the principal project components, and required permits and approvals.

3.1 BACKGROUND

Every city and county in California is required to have an adopted comprehensive long-range general plan for the physical development of the county or city and, in some cases, land outside the city or county boundaries.[4] It is the community's overarching policy document that defines a vision for future change and sets the "ground rules" for locating and designing new projects, expanding the local economy, conserving resources, improving public services and safety, and fostering community health. The General

[1] CEQA Guidelines Section 15126.
[2] CEQA Guidelines Section 15002(a).
[3] CEQA Guidelines Section 15168.
[4] California Government Code Section 65300.

Plan, which includes a vision, guiding principles, goals, policies, and programs, functions as the City's primary land use regulatory tool. It is San Rafael's constitution for future change and must be used as the basis for all planning-related decisions made by City staff, the Planning Commission, and the City Council.

Pursuant to state law, a general plan must contain eight mandated elements: land use, circulation, housing, conservation, open space, noise, environmental justice, and safety. Typically, general plans cover a time frame or forecast of 15 to 20 years. However, general plan housing elements are required to be updated every eight years to comply with the Regional Housing Needs Allocation (RHNA), required by the Association of Bay Area Governments (ABAG).

The existing San Rafael General Plan 2020 (General Plan 2020) was adopted in 2004 and included a horizon year of 2020. Accordingly, a comprehensive update is necessary to extend the planning horizon. One element of the current General Plan, the Housing Element, was amended in January 2015. Additionally, with the adoption of the California Global Warming Solutions Act (Assembly Bill 32), which requires statewide reduction of greenhouse gas (GHG) emissions, the City adopted the 2009 *Climate Change Action Plan* (CCAP). The CCAP included a list of tasks and measures to reduce the community's GHG emissions by 2020 and 2040. In 2011, the CCAP was added to the General Plan 2020 as the Sustainability Element. The CCAP was most recently updated in May 2019. In addition to the eight General Plan elements required by State law, the General Plan 2020 included eight optional elements, for a total of 16 elements.

All precise plans, master plans, and zoning in the city must be consistent with the General Plan. Similarly, all land-use development approvals and environmental decisions made by the City Council must be consistent with the General Plan. The General Plan itself, however, does not approve or entitle any development project. Property owners have control over when they wish to propose a project, and final development approval decisions are made on a project-by-project basis by City staff, the Design Review Board, the Planning Commission, and/or the City Council.

3.2 OVERVIEW

The existing General Plan 2020 involved a major overhaul and modernization of the prior General Plan 2000 that was adopted in 1988. The City determined that General Plan 2020 provided a good foundation for the proposed General Plan 2040. General Plan 2020 went through a comprehensive review process, resulting in a broad range of community goals and policies. Many of the community issues vetted in General Plan 2020 are still relevant, well addressed, and do not require major changes. Therefore, the proposed General Plan 2040 is not a major departure from General Plan 2020 in terms of its underlying vision and fundamental growth concepts. Rather, it builds off the current General Plan 2020 by incorporating the topics that are now required by State law and revises relevant policies and programs to meet those requirements. It also extends the planning horizon forward by 20 years consistent with other regional plans, including *Plan Bay Area* 2040.

Concurrent with General Plan 2040, the City is preparing a Downtown Precise Plan. The proposed Downtown Precise Plan is a critical part of the General Plan, as roughly half of the city's future housing and employment growth is expected to occur in downtown San Rafael, referred to as the Downtown

Precise Plan Area. Projected growth is discussed in Section 3.8, 2040 Development Projections, below. The proposed Downtown Precise Plan updates the 1993 *Our Vision of Downtown San Rafael and Our Implementation Strategy* (1993 Downtown Vision) and incorporates key recommendations of the 2012 *San Rafael Downtown Station Area Plan*, as well as the 2017 *Downtown Parking and Wayfinding Study* and other more focused projects such as the 2019 *Third Street Rehabilitation Project* and the 2018 *Third and Hetherton Intersection Improvements*. The proposed Downtown Precise Plan addresses urban design, placemaking, historic preservation, transportation, parking, economic development, affordable housing, and antidisplacement strategies.

The City's General Plan Land Use Map is integrated with the City's Zoning Map, which shows the parcel-specific delineation of the Zoning Districts throughout the city and depicts permitted and conditionally permitted uses. A parcel's Zoning District stems directly from its General Plan land use designation, with the Zoning District acting to implement the General Plan by refining the specific uses and development standards for that parcel. The proposed Downtown Precise Plan would include the Downtown Form-Based Code (Downtown Code) that will replace existing zoning regulations for properties in the Downtown Precise Plan Area. The Downtown Code is discussed further in Section 3.7.2.4, Downtown Precise Plan Zoning Amendment.

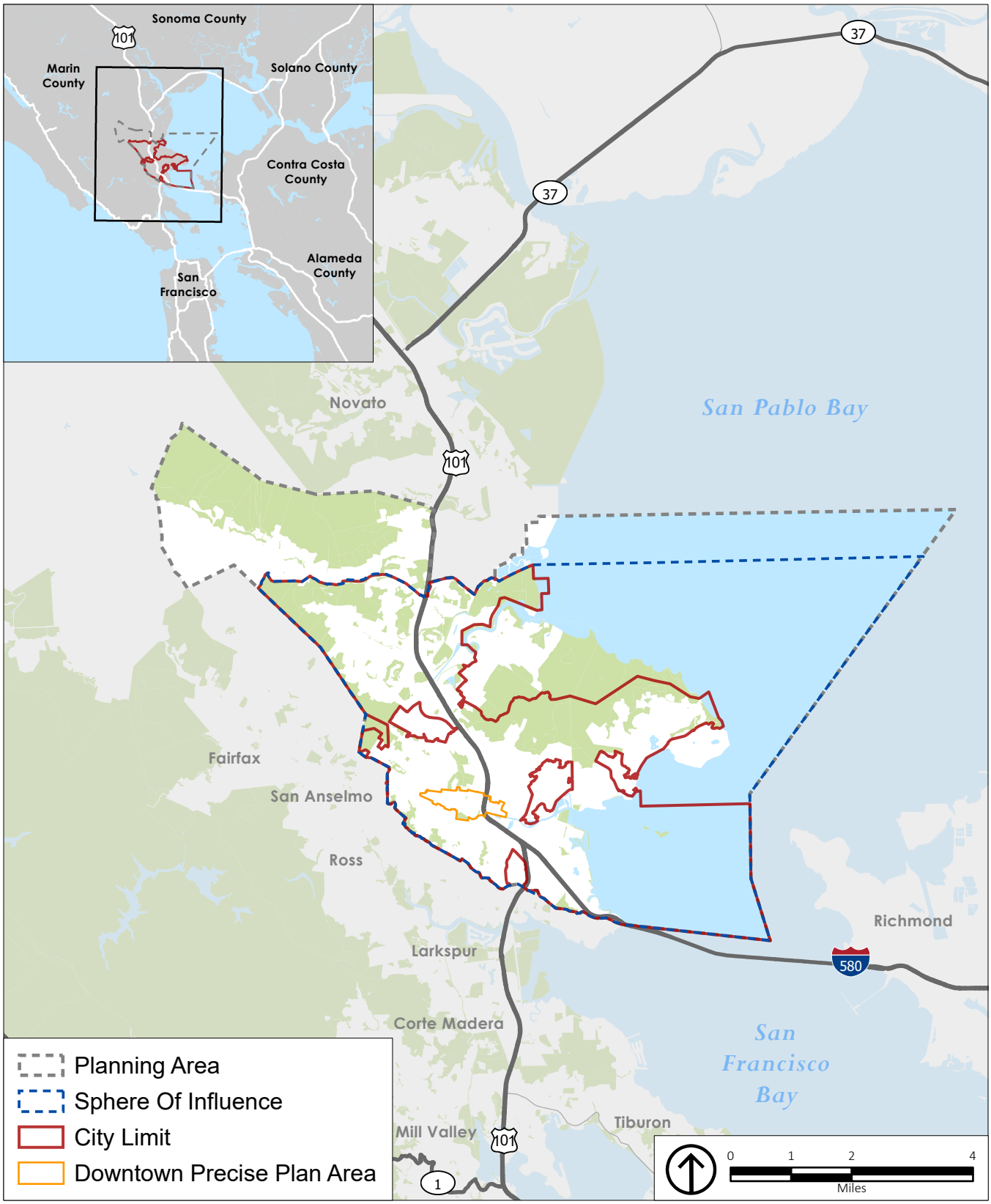
The proposed General Plan 2040 and Downtown Precise Plan, including the goals, policies, and programs, would require map and text amendments to the General Plan Land Use Map and Zoning Map. In conjunction with these amendments, Title 14, Zoning, of the San Rafael Municipal Code (SRMC) would be amended to codify the provisions of the proposed Downtown Code for the Downtown Precise Plan Area.

3.3 LOCATION AND SETTING

The city of San Rafael is in the eastern part of central Marin County and is the largest city in the county. It is generally bounded by the City of Novato to the north; the San Francisco Bay, which includes San Pablo Bay and San Rafael Bay herein referred to as Bay Waters, and unincorporated Marin County to the east; the City of Larkspur and the Town of Ross to the south; and the City of San Anselmo and unincorporated Marin County to the west. See Figure 3-1. The city is accessed by Interstate 580 (I-580) via the Richmond-San Rafael Bridge and U.S. Highway 101 (US-101), as well as the Sonoma-Marin Area Rail Transit (SMART) Train, which has stations at the San Rafael Transit Center in downtown and at the Marin Civic Center. San Rafael is known for a range of urban and suburban land uses, including a variety of residential neighborhoods, a downtown area, parks, and business centers. San Rafael's built-out environment is largely consistent with the built-out environments of adjacent communities.

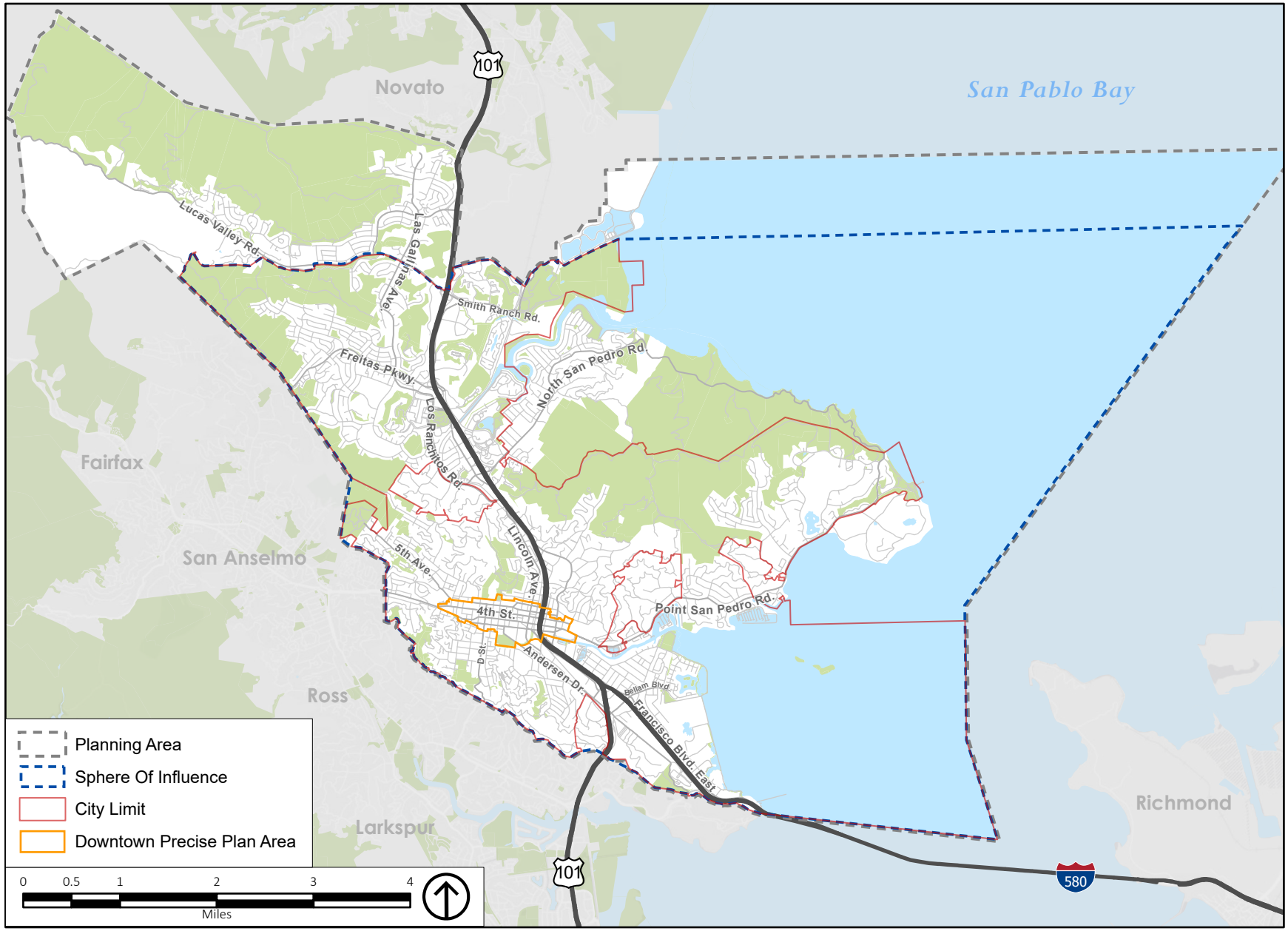
3.4 EIR STUDY AREA

The State of California encourages cities to look beyond their borders when undertaking the sort of comprehensive planning required of a general plan. The City only has jurisdiction over land that is within the city limits. However, the City maintains a role in land use decisions in its sphere of influence (SOI) and its planning area. Therefore, the EIR Study Area consists of all land within the City of San Rafael's city limits, SOI, and Planning Area. These areas are described below and shown on Figure 3-2.



Source: ESRI, 2017; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 3-1
Regional and Vicinity Map



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 3-2
EIR Study Area

3.4.1 PLANNING AREA

The San Rafael Planning Area is approximately 54 square miles of land and water that encompasses the SOI and the city limits, parts of the San Pablo and San Francisco Bays, and portions of unincorporated Marin County, including the Lucas Valley and Marinwood neighborhoods. The purpose of including these additional areas is to include lands that could cause an impact or be impacted by land use, development, and other changes in San Rafael, including impacts related to biological resources, hydrology, and transportation, among others. Designating a Planning Area does not give the City any regulatory power over the land outside the city limits, but signals to the County and other nearby local and regional authorities that San Rafael recognizes that development within this area may have an impact on the future of the city. Although the San Rafael General Plan and Zoning regulations do not currently apply within the Planning Area, General Plan policies must consider these areas and their relationship to the incorporated areas of San Rafael. See Chapter 4, Environmental Analysis, for a description of the cumulative impact scope for this EIR, which may include lands within the Planning Area and beyond, depending on the environmental topic being analyzed.

3.4.2 SPHERE OF INFLUENCE

The San Rafael SOI is approximately 40 square miles in size, including both land and water. The SOI is a boundary that identifies land that the City may potentially annex in the future, and for which urban services, if available, could be provided upon annexation. Under State law, the SOI is established by the Marin County Local Agency Formation Commission with input from the City. The purpose of the SOI is to identify areas where urban development can be best accommodated over the next 5 to 10 years in an orderly and efficient manner. While the City does not have jurisdiction over land within the SOI, designating an SOI sets precedence for ensuring that the City is able to comment on development proposed for lands within the SOI prior to annexation and to begin considering future development of the area. Establishment of this boundary is necessary to determine which governmental agencies can provide services in the most efficient way to the people and property in the area. Unincorporated areas adjacent to the San Rafael city limits fall under the planning, land use, and regulatory jurisdiction of Marin County. The City does not propose to annex any areas within the SOI as part of the proposed project. However, as further described in Chapters 4, Environmental Analysis, and 4.12, Mineral Resources, of this Draft EIR, the San Rafael Rock Quarry and McNear Brickworks, an active quarry in the SOI, could be considered for annexation if it is proposed for development prior to the 2040 horizon. The potential for and timing of annexation of these lands would depend upon the remaining forecast life of the quarry operation, which is currently proposed for an extension to 2044. This extension is outside the proposed 2040 horizon. Other unknown annexations may occur within the 2040 planning horizon and would be analyzed under separate environmental review.

3.4.3 CITY LIMITS

The San Rafael city limits enclose an area of approximately 22 square miles, of which 6 square miles consist of the Bay Waters, and the remaining 16 square miles consist of land. The City has primary authority over land use and other governmental actions within this area. Certain unincorporated areas outside of the city limit may still have a San Rafael mailing address and may share certain services with the

City. For example, most of the unincorporated neighborhoods such as Country Club, Bayside Acres, California Park, Los Ranchitos, and Marinwood, are not actually within San Rafael's city limit; however, these neighborhoods do fall within San Rafael's Planning Area.

3.4.4 DOWNTOWN PRECISE PLAN AREA

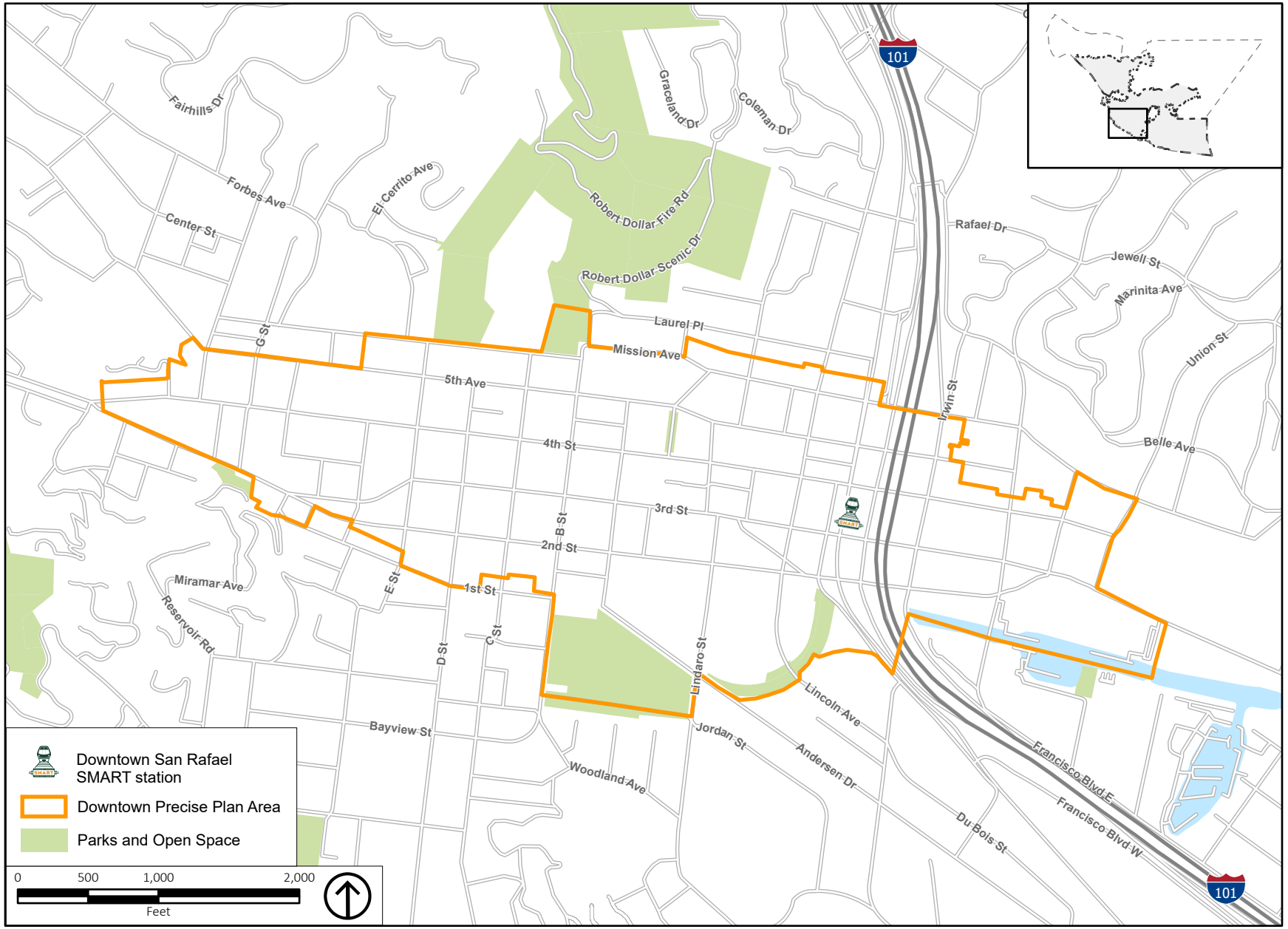
Covering approximately 265 acres, the Downtown Precise Plan Area is the economic, cultural, and civic heart of the city. With approximately 2,300 residents and over a million square feet of nonresidential uses, it is a major mixed-use center in the northern Bay Area. As shown on Figure 3-3, the Downtown Precise Plan Area is in southwestern San Rafael and is bisected by US-101. It extends from the Miracle Mile[5] on the west to Montecito Plaza shopping center on the east, with Mission Avenue on the north and First Street and Albert Park on the south. The Downtown Precise Plan Area contains major regional transportation links, including US-101, as well as the Downtown San Rafael SMART Station, which provides service between Sonoma County and Larkspur.

3.5 PLANNING PROCESS

The public outreach and participation process for the proposed General Plan 2040 and Downtown Precise Plan began in December 2017 when the City Council appointed a 24-member Steering Committee with 22 alternates to fill committee positions in the event of an absence. The Steering Committee met 25 times throughout the process. The Steering Committee served as a sounding board for City staff on draft policies and programs and was responsible for reviewing and commenting on draft materials and serving as a liaison to the community. Steering Committee meetings generally occurred on the second Wednesday of each month from 6:00 p.m. to 9:00 p.m. The Committee conducted business through four virtual subcommittees during the first two months of the COVID-19 pandemic, and then as a full group again via public Zoom webinars through June 2020. A Downtown Precise Plan subcommittee continued to meet through July and August 2020.

City staff also convened community workshops on the proposed General Plan 2040 and Downtown Precise Plan, including formal meetings at community centers and informal "pop-up" workshops at farmers markets and the Downtown Art Walk. The outreach program included surveys, storefront exhibits, youth participation exercises, and attendance at numerous meetings of neighborhood associations, civic organizations, and City boards and commissions. A parallel, Spanish-language, outreach program also was included. A multiday design charrette was held for the Downtown Precise Plan. The City maintains two websites for the proposed project. One website is the www.sanrafael2040.org, and the other is www.cityofsanrafael.org/2040. Both websites offered opportunities for the public to weigh in on key issues and download information about the project and will continue to be available throughout the environmental review and project approval process. City staff also solicited input from other public agencies, such as the County of Marin, local school districts, the Transportation Authority of Marin, and cities adjacent to San Rafael.

[5] The Miracle Mile is a historic section of road (Red Hill Avenue) that runs between the cities of San Rafael and San Anselmo.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 3-3
Downtown Precise Plan Area

3.6 PROJECT OBJECTIVES

The primary purposes of the proposed project are to plan for the growth and conservation of San Rafael over a 20-year time horizon and to achieve a more equitable, sustainable, and prosperous future for all residents. Objectives related specifically to growth include focusing growth in the Downtown Precise Plan Area, capitalizing on transit opportunities in and around Priority Development Areas, and streamlining future development that is consistent with the proposed project. This requires extending the buildout horizon to year 2040 and updating goals, policies, and programs so that they meet current State requirements and community priorities. As part of this process, the City drafted 2040 Guiding Principles, which build upon the framework of the vision, guiding principles, and goals of the current General Plan 2020 and reflect the community's desires for San Rafael's future. The draft 2040 Guiding Principles, as shown on Figure 3-4, will serve as the project objectives for the EIR.

3.7 PROJECT COMPONENTS

3.7.1 GENERAL PLAN 2040

The proposed project updates the General Plan 2020 goals, policies, and programs to reflect current conditions, issues, resources, and community perspectives. For example, changes are needed to address the evolving state of the city and region and to cover global issues such as climate change and emerging transportation technology. The update also incorporates regional forecasts for 2040 that extend the planning horizon forward by 20 years.

3.7.1.1 GENERAL PLAN 2040 OUTLINE

The proposed General Plan 2040, like the existing General Plan 2020, includes the eight mandatory elements (denoted with a "*" in the list below) and five optional elements. The proposed outline for the General Plan 2040 includes 16 chapters (13 of which are "elements") organized in five sections:

Toward a Thriving City
1. Introduction
2. Planning Framework
3. Guiding Principles

Our Built Environment
4. Land Use Element*
5. Neighborhoods Element
6. Community Design and Preservation Element

Our Natural Environment
7. Conservation and Climate Change Element*
8. Parks, Recreation, and Open Space Element*
9. Safety and Resilience Element*
10. Noise Element*

Connecting the City
11. Mobility Element*
12. Community Services and Infrastructure Element
13. Arts, Culture, and Preservation Element

Opportunity for All
14. Economic Vitality Element
15. Equity, Diversity, and Inclusion Element*
16. Housing Element*



Source: City San Rafael, 2018.

Figure 3-4
Draft 2040 General Plan Guiding Principles

3.7.1.2 GENERAL PLAN GOALS, POLICIES, AND PROGRAMS

Each element of the proposed General Plan 2040 contains background information and a series of goals, policies, and programs. The following provides a description of goals, policies, and programs and explains the relationship between them:

- A *goal* is a description of what San Rafael wants to achieve—the end state.
- A *policy* is a specific or general statement of principle, positions, or approaches on a particular issue or subject. Use of "must" or "shall" (or verbs like "require") indicate mandatory requirements, and "should" or "may" (or verbs like "support" or "encourage") indicate case-by-case flexibility, although parameters can be set for such statements.
- A *program* is an action, procedure, or activity by the City to achieve a specific policy and/or goal.

A comprehensive list of proposed goals, policies, and programs is provided Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. As previously described, the proposed General Plan 2040 builds off the current General Plan 2020 by incorporating similar topics and revising or adding new, goals, policies, and programs that are required by State law. Table 3-1 provides a list of the State laws that are addressed in the General Plan 2040, a summary of the purpose of the law, and the element that addresses the law.

TABLE 3-1 GENERAL PLAN 2040 UPDATES REQUIRED BY STATE LAW

Law	Purpose	General Plan 2040 Element
SB 743	Changes the standard method of measuring transportation impacts from level of service to vehicle miles traveled; encourages transit-oriented development; reduces greenhouse gas emissions.	Land Use and Mobility
SB 18 and AB 52	Require consultation with Native American tribes as part of a general plan update and for any subsequent project which could have the potential to impact Native American resources.	Community Design and Preservation
SB 244 and SB 1000	Requires the integration of equity into the General Plan process. SB 244 requires special consideration of lower income unincorporated areas within a city's planning area, and Senate Bill 1000 requires General Plans to include an element with environmental justice policies.	Equity, Diversity, and Inclusion
AB 1358	Requires "complete streets" be addressed in a general plan which considers the needs of all modes of travel.	Mobility
AB 32 and SB 375	Addresses GHG reduction largely implemented on the State and regional levels.	Mobility
SB 379	Requires a general plan to address climate resiliency.	Safety
AB 2140	Requires a link between a city's local hazard mitigation plan and the general plan.	Safety
SB 1241	Requires that certain maps (e.g., high or very-high fire hazard severity zones) be included in the general plan and that California Department of Forestry and Fire Protection review safety elements to ensure policies provide adequate wildfire protection.	Safety
AB 1739	Requires that general plans consider impacts on groundwater and plans for groundwater basins.	Conservation and Climate Change
AB 162	Requires general plans to identify areas subject to flooding using the latest flood hazard information, and to prohibit new housing in areas that are not adequately protected from flooding.	Conservation and Climate Change

Notes: SB = Senate Bill; AB = Assembly Bill

In addition to requirements of State laws, the goals, policies, and programs in the proposed General Plan 2040 are influenced by community input, best practices, and emerging issues (e.g., sea level rise, autonomous vehicles, and green infrastructure). An overview of major changes to the goals, policies, and programs in each General Plan 2040 element is provided below.

- Land Use Element. This element is now organized into three goals rather than two. The third goal and associated policies and programs are from the Neighborhoods Element of General Plan 2020. Growth management policies have been updated to incorporate climate change considerations and transportation policies on vehicle miles traveled (VMT). Policies encouraging innovative and alternative housing types have been added. New policies recognize the needs of older adults. Policies on neighborhood centers have been updated to reflect diminishing demand for retail space and allowances for other uses such as housing.
- Neighborhoods Element. This element has been reorganized from General Plan 2020. Whereas General Plan 2020 only listed 30 neighborhoods alphabetically with policies for each, the proposed General Plan 2040 groups neighborhoods into five consolidated planning areas (Downtown, Central San Rafael, North San Rafael, Southeast San Rafael/Canal, and Point San Pedro) and presents neighborhood discussions under each. The neighborhood policies themselves have been comprehensively updated based on input from neighborhood groups and data about the current state of each area. New issues such as sea level rise and equity are covered. Downtown policies (which reflected the 1993 Downtown Vision) have been replaced with policies that reflect the new Downtown Precise Plan.
- Community Design and Preservation Element. This element has been reorganized. The element now addresses five primary goals: a beautiful city, a sense of place, an improved public realm, quality construction and design, and protected cultural heritage. Historic preservation policies have been amplified and expanded, and tribal resource protection policies have been added. The policies emphasize protection of natural features, views, and the waterfront; improvements to gateways and corridors; and upgrades to plazas, public spaces, and streetscapes. This element also covers street trees, landscaping, and wayfinding signage more comprehensively than General Plan 2020 did. Principles of good design have been incorporated. Policies reflects recent Senate Bill 35 directives for objective design standards.[6]
- Conservation and Climate Change Element. This element has been updated to incorporate new policies related to energy and water conservation, and to weave in policies that were formerly in the Sustainability Element and the Air and Water Quality Element. Wetland and hillside preservation policies have been carried forward from General Plan 2020. Creek policies, urban forestry, and invasive plant removal policies have been strengthened. A light-pollution policy has been added. Policies on water quality and urban runoff have been updated to reflect best practices in green infrastructure and current stormwater management programs. Goals on sustainable energy management and reduced GHG emissions have been added, with policies and targets from the City's

[6] Senate Bill 35 (SB 35) became effective on January 1, 2018. It enacted Government Code Section 65913.4 to require cities and counties to use a streamlined ministerial review process for qualifying multifamily housing developments that comply with the jurisdiction's objective planning standards, provide specified levels of affordable housing, and meet other specific requirements.

most recent CCAP incorporated. A "crosswalk" is included showing how climate change is addressed throughout the proposed General Plan 2040.

- Parks, Recreation, and Open Space Element. This element was two separate elements in General Plan 2020—the former Open Space Element and the former Parks and Recreation Element. The two have been combined to allow a more holistic look at the relationship between active and passive parks and their collective role in meeting the needs of San Rafael residents. The now-titled "Parks, Recreation, and Open Space Element" introduces and applies a new park classification system, establishes updated levels of service (4.0 acres per 1,000 residents), and expands the policy foundation for park and recreation planning in the city. Policies on recreational programming have been added, with a focus on equitable access for persons of all ages. Much of the open space policy language is carried forward from General Plan 2020, with updates to reflect a greater emphasis on fire safety and open space management rather than land acquisition, which was emphasized in General Plan 2020.
- Safety and Resilience Element. This element has been updated and expanded to include key policies and strategies from the local hazard mitigation plan. The Safety and Resilience Element includes broad policies related to resilience as well as focused policies on geologic hazards, flood hazards, and wildfire prevention and response. A new goal and associated policies and programs on sea level rise has been added. Wildfire policies have been updated to reflect recent events and new planning documents such as the Wildfire Prevention and Protection Action Plan. A goal on hazardous materials has been added, with accompanying new policies. A new goal on emergency preparedness has been updated, with new policies included.
- Noise Element. This element has been updated, including a noise compatibility table that reflects State Office of Planning and Research guidance. Some of the existing policies have been carried forward, and several new policies have been added, including a vibration policy.
- Mobility Element. This element has been comprehensively overhauled to reflect an emphasis on multimodal travel, GHG reduction, and complete streets. The regional leadership goal has been carried forward and augmented with new policies on transportation technology and innovation. The previous goal of "mobility for all users" has been expanded to address efficiency and accessibility. The level of service policy from General Plan 2020 has been updated to "de-couple" level of service from CEQA review. The list of proposed mobility improvements has been updated. A new goal has been added on clean transportation, including new VMT reduction targets, transportation demand management strategies, and low carbon transportation policies. A new goal has been added promoting transit, with policies focusing on collaboration between the City and different service providers (other agencies outside the City's control). The proposed General Plan 2040 carries forward goals for connectivity, walking and cycling, and parking. Policies have been updated to reflect best practices and recent planning initiatives such as the Bicycle and Pedestrian Master Plan (2018).
- Community Services and Infrastructure Element. The former Infrastructure and Governance Elements from General Plan 2020 have been consolidated and expanded into the Community Services and Infrastructure Element in the proposed General Plan 2040, combining updated infrastructure policies with policies on schools and libraries from the now-dissolved Governance Element and with policies that were formerly in the Safety and Resilience Element. Infrastructure policies have been expanded to address telecommunications, energy reliability, and solid waste reduction policies that were

formerly in the Sustainability Element. A goal on sound municipal financial practices has been expanded to emphasize cost-benefit analysis in decision-making.

- Arts, Culture, and Preservation Element. This element from General Plan 2020 has been carried forward and expanded, with a greater focus on social equity, inclusion, economic development, and the needs of the local arts community.
- Economic Vitality Element. This element has been reorganized to include an expanded focus on partnerships, relationship building between the City and business community, and the importance of economic diversification and resilience. New policies respond to the changing market for retail space, the role of Downtown, the need for workforce housing, and job training needs among San Rafael residents. The proposed General Plan 2040 includes new policies for major economic sectors, such as office, industrial, hospitality, health care, and government. Policies on the quality of the City's business areas are mostly carried forward, with an emphasis on creating a supportive environment for business and improving infrastructure and access.
- Equity, Diversity, and Inclusion Element. This is a new element of the proposed General Plan 2040. It includes six goals, beginning with the goal of authentic and inclusive community participation in government affairs. Some of the policies are carried forward from the former General Plan 2020 Governance Element, and others are new. A second goal is to support healthy communities and environmental justice, with new policies emphasizing access to health care, food, parks and open space, and safe spaces for physical activity in lower-income communities. A new goal on housing stability has been added that addresses the prevention of displacement, provisions of healthy homes, and reduction of overcrowding in lower income areas. A new goal on equitable service delivery emphasizes investment in capital facilities and expanded municipal services in lower income areas, recognizing higher levels of need and more limited access to services. A new goal on education and economic opportunity focuses on removing barriers to learning and career advancement. Finally, the Equity, Diversity, and Inclusion Element includes the goal of being an "age friendly" community, where older adults can enjoy a high quality of life and access to services and secure housing.
- Housing Element. This element of General Plan 2020 is unchanged in General Plan 2040, except for minor edits required to maintain internal consistency. As noted earlier, the Housing Element will be comprehensively updated in 2021 in accordance with State requirements.

3.7.1.3 GENERAL PLAN LAND USE CATEGORIES

The discussion below describes the changes to the General Plan land use categories that are proposed as part of the proposed General Plan 2040. Collectively, these changes may influence the types and intensities of land uses permitted on different sites in the city.

Residential Density: Change from Gross to Net

The proposed General Plan 2040 would change how residential density is measured—from "gross" density to "net" density. This shift from gross density to net density is proposed because most of the City's future development is expected on small infill sites, and so that the General Plan land use designations align with Zoning Districts.

These two metrics are described as follows:

- Gross density is the total number of units per acre in a given area that includes the internal streets, easements, common open spaces, and undevelopable areas. Using gross density as a measurement for residential density is appropriate for cities that are growing outward through the addition of large single-family subdivision tracts that construct new roads and set aside land for public parks, schools, and amenities.
- Net density is the total number of units per acre on a given site on which buildings may be constructed and excludes streets, easements, common open spaces, and other undevelopable areas. Using net density for calculating residential density is appropriate for cities like San Rafael, which are largely built out.

Table 3-2 shows a comparison of the gross and net density by land use designation. Although net density is typically 20 to 30 percent higher than gross density, as shown in Table 3-2, the change would not increase the allowable number of units on a given site, and the measurements are roughly equivalent in number of allowed units.

TABLE 3-2 COMPARISON OF GROSS AND NET DENSITIES FOR GENERAL PLAN RESIDENTIAL LAND USE DESIGNATIONS

Residential Land Use Designations	Gross Density (Units per Gross Acre)	Net Density (Units per Net Acre)	Corresponding Zoning Districts
Hillside Residential Resource	0.1 to 0.5	Less than 0.5	R2a
Hillside Residential	0.5 to 2.0	0.5 to 2.2	R1a, R20
Large Lot Residential	0.5 to 2.0	0.5 to 2.2	R1a, R20
Low Density Residential	2.0 to 6.5	2.2 to 8.7	R10, R7.5, R5
Medium Density Residential	6.5 to 15	8.7 to 21.8	MR5, MR3, MR2.5, MR2
High Density Residential	15 to 32	21.8 to 43.6	HR1.8, HR1.5, HR1

Source: City of San Rafael, 2020.

Land Use Designation Consolidation

The proposed General Plan 2040 would consolidate General Plan land use designations to improve consistency between the proposed General Plan and the existing zoning regulations and to streamline General Plan 2040. The proposed General Plan 2040 would reduce the total number of land use designations from 28 in the existing General Plan 2020 to 19 in General Plan 2040.

The proposed consolidation of land use designations is shown in Table 3-3, and a complete list of the 19 land use designations, including the existing (unchanged) and the proposed new land use designations is shown in the following section under subheading “Land Use Designations.” As shown in Table 3-3, no changes to the Zoning Districts are required as a result of the land use designation consolidation except the proposed rezoning associated with the Downtown Precise Plan, which is discussed in Section 3.7.2, Downtown Precise Plan, below.

TABLE 3-3 PROPOSED LAND USE DESIGNATION CONSOLIDATION

General Plan 2020	General Plan 2040	Discussion
Office		
Office	Office Mixed Use	This land use designation would include multiple zoning districts, and the three existing office designations would continue to be used on the City's Zoning Map to distinguish the mix of uses that are appropriate in a given Office Mixed Use area. No rezoning is required.
Office-Retail		
Office-Residential		
Park		
Park	Park, Recreation, and Open Space	This land use designation would allow areas with the same physical characteristics to have the same land use designation. This proposed land use designation would retain the existing Park/Open Space (P/OS) Zoning District. No rezoning is required.
Open Space		
Light Industrial		
Lindaro Mixed Use	Light Industrial-Office	The 13-acre Lindaro Mixed Use land use designation on Lindaro and Jordan Streets would change to the existing Light Industrial-Office land use designation because the Lindaro Mixed Use designation allows the same uses in the Light Industrial-Office designation, except that live-work development is permitted and is not permitted in the other industrial designations (Lindaro Mixed Use or Industrial). The proposed change to the Light Industrial-Office definition states that it includes multiple Zoning Districts, including one intended for the Jordan and Lindaro areas, where live-work is permitted. No rezoning is required.
Light Industrial-Office		
Downtown		
Hetherton Office	Downtown Mixed Use	The proposed Downtown Mixed Use land use designation would apply to all of properties in the Downtown Precise Plan Area except the properties with the Medium Density Residential and High Density Residential land use designations in the vicinity of Latham Street and Hayes Street, and the areas designated as Parks, Recreation, and Open Space. The allowable uses and intensities in this land use designation would be established by the Downtown Precise Plan and Downtown Code that is discussed in Section 3.7.2.4, Downtown Precise Plan Zoning Amendment, of this chapter. A single color is used for the Downtown Mixed-Use area on the General Plan 2040 Land Use Map (see Figure 3-5). The Downtown Mixed Use designation also would apply to a small number of parcels with other General Plan land use designations, including Hillside Resource Residential, Low-Density Residential, High Density Residential, General Commercial, Neighborhood Commercial, Retail Office, Office, Residential Office, Park, Public-Quasi Public, Industrial, and Marine-related. These land use designations will continue to appear on the 2040 Land Use Map in other parts of San Rafael.
Lindaro Mixed Use		
Lindaro Office		
Second/Third Mixed Use		
Fourth Street Commercial Core		
Fifth/Mission Residential/Office		
West End Village		

Source: City of San Rafael, 2020.

Land Use Designations

The proposed General Plan 2040 includes the following three new land use designations:

- **Downtown Mixed Use.** The proposed Downtown Mixed Use land use designation corresponds to properties in the Downtown Precise Plan Area. It includes the highest development densities and intensities in the city, and contains a mix of housing, office, retail, service, and public land uses. Development in the Downtown Precise Plan Area is guided by the Downtown Precise Plan and associated Downtown Code, which includes further detail on building form, development intensity, and allowable uses. The maximum floor area ratio (FAR)[7] is based on a sliding scale that varies with height, starting at 3.0 FAR. There is no residential density limit in this land use designation; however, height limits and other development standards define the maximum building envelope on each site with this designation. These standards are discussed in more detail in Section 3.7.2.4 below.
- **Parks, Recreation, and Open Space.** This land use designation denotes land that is used for parks, recreation, and open space, including City, County, and State parks; common open space within private development; cemeteries; and areas acquired for resource conservation, hazard reduction, and passive recreation such as hiking. Permitted uses include athletic fields, sports facilities, civic buildings with a primarily recreational or social function, and leisure-oriented uses such as picnic areas, boat slips, and tot lots. Land with this designation is further classified in the Parks, Recreation, and Open Space Element of the General Plan 2040 as "improved" or "natural."
- **Sea Level Rise Overlay.** The General Plan 2040 land use map also includes a "Sea Level Rise Overlay." This boundary appears on the Land Use Map as a solid line showing the extent of the area that would be inundated during a 100-year flood when sea levels have risen to 2050 levels forecasted by. Proposed goals, policies, and programs in the General Plan 2040 would provide direction on ways to mitigate future flood hazards in this area.

In addition to the changes listed above, the proposed General Plan 2040 would carry forward the same land use designations from the existing General Plan 2020:

- **Residential.** Hillside Resource Residential, Hillside Residential, Very Low Density Residential, Low Density Residential, Medium Density Residential, and High Density Residential.
- **Mixed Use**. Community Commercial Mixed Use, Neighborhood Commercial Mixed Use, Office Mixed Use, and Marine Related Mixed Use.
- **Industrial.** General Industrial and Light Industrial/Office.
- **Other.** Public/Quasi-Public, Mineral Resources, Conservation, Airport/Recreation, Water, and Undesignated Areas.

[7] Standards of building intensity for non-residential uses are stated as maximum floor-area ratios (FAR). FAR is a ratio of the building square footage permitted on a lot to the square footage of the lot. For example, on a site with 10,000 square feet of land area, a FAR of 1.0 will allow 10,000 square feet of building floor area to be built. On the same site, a FAR of 2.0 would allow 20,000 square feet of floor area. This could take the form of a two-story building with 100 percent lot coverage, or a four-story building with 50 percent lot coverage. A FAR of 0.4 would allow 4,000 square feet of floor area on a 10,000 square-foot lot. In some cases, FAR may also be used to regulate residential development, allowing flexibility and recognizing variations in dwelling unit size.

3.7.1.4 GENERAL PLAN LAND USE MAP AMENDMENTS

The proposed General Plan 2040 would also include revisions to the land use map recommended by City staff that would largely consist of expanding specific land uses, adjusting the map to reflect existing conditions and zoning patterns, and incorporating recently adopted plans. Because these locations are currently developed and the amendments are being made to correct existing errors, these amendments would not result in new development potential at these locations. The following discussion describes the various revisions that are proposed as part of General Plan 2040.

- Correcting Scrivener's Errors. A "scrivener's error" is a land use map designation that is incorrect. These changes are minor and likely occurred when the General Plan 2020 Land Use Map was transferred from paper files to a digital format.
- Expanding Mapping of Public/Quasi-Public Land Uses. General Plan 2020 and General Plan 2040 both have a Public/Quasi-Public land use designation, which includes government or quasi-public buildings and facilities, utilities, and similar facilities owned by public and nonprofit agencies. A few public or quasi-public properties, including public school campuses, were not mapped as Public/Quasi-Public land use designations in General Plan 2020 but would be mapped as such in the proposed General Plan 2040.
- Expanding Mapping of Park and Open Space Land Uses. Park and permanent open space acreage in San Rafael have expanded since General Plan 2020. There are also a few existing parks and permanent open spaces that were shown with other designations in General Plan 2020. The proposed General Plan 2040 would include these locations on the General Plan 2040 land use map.
- Adjusting to Reflect Actual Uses and Densities. These proposed changes are essentially "housekeeping" amendments that align the proposed General Plan 2040 with existing conditions. The proposed General Plan 2040 provides an opportunity to apply a designation that better reflects the current and future use of these parcels.
- Adjusting to Reflect Zoning and Parcel Patterns. These proposed changes reflect areas along the "seam" where different designations abut each other. The amendments adjust the General Plan land use map to reflect the existing uses, parcel patterns, and zoning more accurately.
- Changing Density to Reflect Site Constraints. These proposed changes are for two parcels to change from Residential-Low Density to Hillside Residential because of the physical characteristics of the sites.
- Changing for Consistency with Civic Center Station Area Plan. These changes are proposed for consistency with the adopted 2013 *Civic Center Station Area Plan*.
- Formalizing Prior Council Resolutions. Several General Plan map amendments have been adopted through City Council resolutions between 2004 and 2019. Some of the changes already appear on the City's official General Plan 2020 land use map and some do not. The proposed General Plan 2040 would show all previously approved amendments.

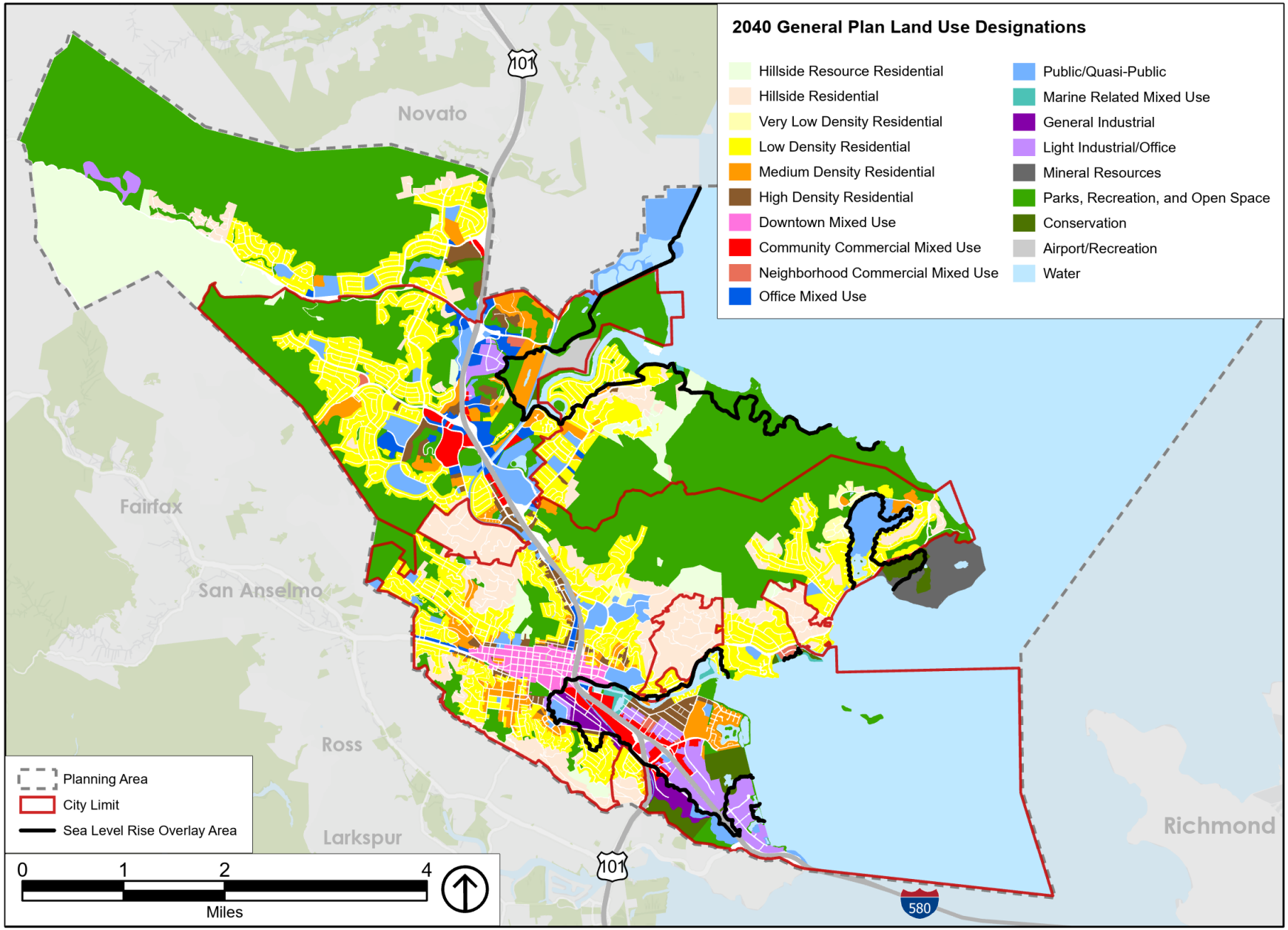
Appendix C of this Draft EIR, Staff Recommended Land Use Map Changes, provides a detailed description of these General Plan amendments.

In addition to the amendments described above, which were proposed by City staff, the proposed General Plan 2040 would include amendments formally requested by property owners. The General Plan Update process provided an opportunity for property owners to petition the City for changes to their current General Plan Land Use Map designations. On April 22, 2019, the City of San Rafael issued a "Call for Amendments" notice to a list of property owners who had previously expressed interest in this opportunity. In addition to sending this notice, the City also prepared a pamphlet and press release advertising the opportunity. Application materials were posted to the project website. A 10-week deadline was provided for amendment submittals. During this time, four formal requests were received for General Plan land use map amendment, and two requests for text changes to General Plan narrative and policies. Staff communicated with the applicants following the June 30, 2019, deadline to discuss each request. The amendments were considered by the Planning Commission and City Council at noticed public hearings, with staff recommendations presented at each hearing. Based on these hearings, the following amendments were accepted and are included in the proposed General Plan 2040:

- 3301 Kerner Boulevard and 150 Bellam Boulevard. This proposed amendment includes two parcels, a 0.91-acre parcel at the corner of Kerner and Bellam Boulevards and a 0.97-acre parcel across the street. The 3301 Kerner site is a three-story, 25,200-square-foot office building constructed in 1983. The site at 150 Bellam includes a restaurant, a travel agency, a recording studio, and several small office tenants. The existing General Plan land use designation on both sites is Light Industrial/Office. The sites are proposed to change to Community Commercial Mixed Use. Office buildings are permitted in both designations, and there would be no change to the status of the existing uses if the proposed amendment is accepted. Community Commercial Mixed Use is more consistent with the character of the Bellam Boulevard corridor than Light Industrial/Office. The Bellam Boulevard corridor is characterized by retail shops, restaurants, and customer-facing services. The proposed new designation would provide the flexibility to convert the sites to housing in the future.
- 86 Culloden Park Road. This is a 1.89-acre property in the Fair Hills neighborhood and has a split General Plan land use designation. The property consists of two legal parcels with the same owner; the larger 1.19-acre parcel has a Low Density Residential land use designation, and the smaller 0.70-acre parcel has a Hillside Resource Residential designation. The property is also in two Zoning Districts (R-20 and PD 1729). The proposed General Plan 2040 would change the smaller parcel's land use designation to Residential-Low Density to match the larger one.

3.7.1.5 GENERAL PLAN 2040 LAND USE MAP

The General Plan land use map demonstrates the location of each land use designation, which is a required component of general plans. The General Plan land use map has been used since the 1960s to illustrate the proposed distribution, location, and extent of housing, businesses, industries, open space, recreation, education, and public buildings within the horizon of each general plan. The General Plan land use map reflects a combination of existing conditions and different or more intense uses in locations where change is desired in the next 20 years. The proposed General Plan 2040 land use map is shown on Figure 3-5.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 3-5
Proposed General Plan 2040 Land Use Map

3.7.2 DOWNTOWN PRECISE PLAN

Concurrent with the proposed General Plan 2040, the City prepared the Downtown Precise Plan to guide future Downtown growth through 2040. The Downtown Precise Plan implements the community's vision to create opportunities for reinvestment and future development that is feasible, predictable, and consistent with the community's priorities and aspirations. The Downtown Precise Plan refines existing policies and sets design direction for a variety of topics in coordination with other approved plans and policy documents. The Downtown Precise Plan identifies growth and development opportunities; provides the principles, policies, and strategies to guide investment, and proposes a form-based code to replace the current zoning standards. Once the Downtown Precise Plan is adopted and the San Rafael Zoning Ordinance is amended, the Downtown Precise Plan will serve as the overarching guiding document that provides strategies and recommendations for growth within the Downtown Precise Plan Area. A description of the Downtown Precise Plan is provided below.

3.7.2.1 DOWNTOWN PRECISE PLAN ORGANIZATION

The proposed Downtown Precise Plan is made up of nine chapters, plus a glossary and an appendix. The first three chapters provide the context for the document and describe existing conditions and guiding principles for future development. Chapter 4 provides a design vision for the entire Downtown Precise Plan Area and includes more specific guidance for four sub-areas within the boundary of the Downtown Precise Plan Area. Chapter 5 addresses historic preservation and Chapter 6 addresses circulation. Chapter 7 is an affordable housing and anti-displacement strategy. Chapter 8 covers implementation, including recommended capital projects and economic development strategies. Chapter 9 is the proposed Downtown Code. The appendices include a historic resources inventory, pro formas for prototypical developments,[8] a summary of community outreach efforts, and several reports prepared during the planning process.

3.7.2.2 DOWNTOWN PRECISE PLAN PRINCIPLES

The vision for the Downtown Precise Plan Area is of a vibrant, mixed-use destination with a strong sense of place and history, and one that provides a downtown experience that is varied and rich. The Downtown Precise Plan Area should have a clear hierarchy in its built form and open spaces, reflecting the role and intensity of uses in different parts of downtown. The Downtown Precise Plan Area should provide a setting that invites economic investment while preserving its built heritage and community character.

The design principles to achieve the vision for the Downtown Precise Plan emphasize the following:

- Creating a more distinct identity for each of the four sub-areas that comprise Downtown: West End Village, Downtown Core, Downtown Gateway, and the Montecito Commercial Area.

[8] A pro forma analysis is a set of calculations that projects the financial return that a proposed real estate development is likely to create. It begins by describing the proposed project in quantifiable terms. It then estimates revenues that are likely to be obtained, the costs that will have to be incurred, and the net financial return that the developer expects to achieve. A pro forma is an analysis that developers use to decide whether to move forward with a project.

- Focusing Downtown development on key opportunity sites, while addressing constraints associated with small parcels and fragmented property ownership.
- Reinforcing Downtown gateways, especially around the San Rafael Transit Center.
- Improving pedestrian and bicycle safety as well as transit access.
- Creating safe, attractive public spaces, including new plazas and improved parks.
- Improving the resilience of Downtown businesses to economic shifts and changes in market demand.
- Supporting new mixed-use infill development, with an emphasis on high-density housing.
- Preserving and adaptively reusing historic resources while encouraging compatible design on sites adjacent to such resources.
- Improving parking management.
- Avoiding the displacement of lower income households and ensuring that a substantial number of new housing units are affordable.
- Making Downtown more resilient to natural hazards, especially flooding and sea level rise.

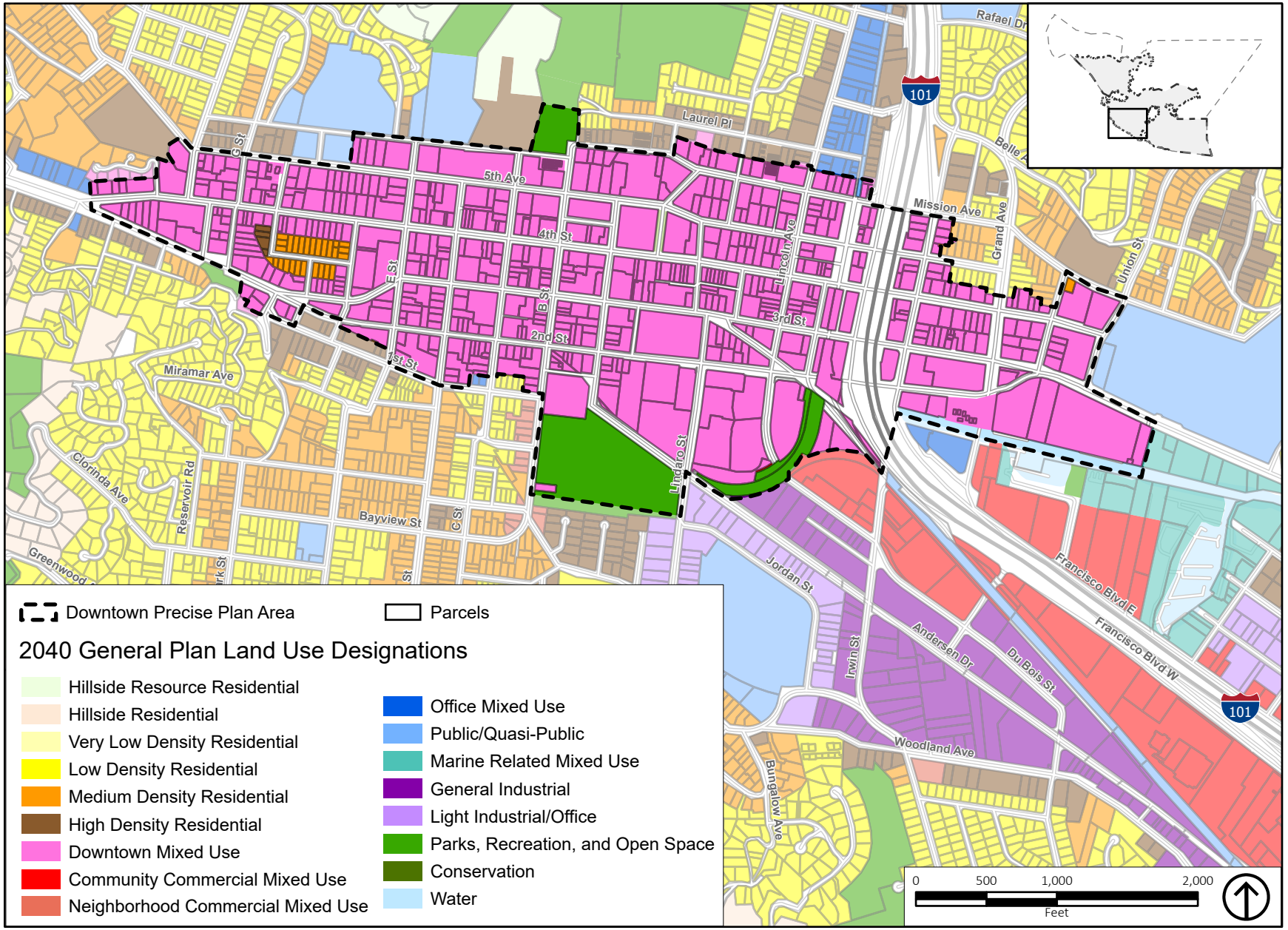
3.7.2.3 DOWNTOWN PRECISE PLAN LAND USE DESIGNATION

As previously discussed in Section 3.7.1.4, General Plan Land Use Map Amendments, the proposed land use designation for the Downtown Precise Plan Area would be Downtown Mixed Use for all properties in the Downtown Precise Plan Area except the properties with the Medium Density Residential and High Density Residential land use designations in the vicinity of Latham Street and Hayes Street and the areas designated as Parks, Recreation, and Open Space. Figure 3-6 shows the proposed land use designations for the Downtown Precise Plan Area and the surrounding properties.

3.7.2.4 DOWNTOWN PRECISE PLAN ZONING AMENDMENT

Downtown Code

The proposed Downtown Precise Plan includes the Downtown Code, which would amend SRMC Title 14, Zoning. The proposed Downtown Code would replace existing zoning regulations for all of the properties in the Downtown Precise Plan Area with the exception of a few parcels in the Latham Street area, which would retain their Multifamily Residential District ([Medium Density] 2,500 square feet per dwelling unit [MR2.5]) zoning designation, and the existing open space zoning designations. The Downtown Code consists of new zoning regulations that would be organized into a coordinated set of articles and incorporated into the Zoning Ordinance. Once adopted, should there be any conflict between the existing Zoning Ordinance and the Downtown Precise Plan, the Downtown Precise Plan shall prevail.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 3-6

Proposed Downtown Precise Plan Land use Map

The proposed Downtown Code is form-based, which is a type of zoning that focuses on the specific "form and design" of new buildings—unlike the existing use-based code that focuses on the specific "activities and uses" of a new building. However, this does not mean that any type of development is allowed in the Downtown Precise Plan Area. The proposed Downtown Code describes the types of uses that are allowed in each zone, which are listed in Table 2.3.070.A. Uses listed in this table include categories such as automotive, commercial, entertainment, food, lodging, medical offices, offices, public assembly, public and quasi-public, residential, temporary uses, transportation, and services. Uses that are not listed are not allowed unless the Community Development Director determines that the proposed use is similar to a listed use. Otherwise, these uses are either allowed by-right, through Administrative Use Permits, Conditional Use Permits, or through a Zoning Administrator. The proposed Downtown Code is intended to reduce regulatory barriers to development and facilitate development by removing abstract and uncoordinated regulations of the existing use-based Zoning Code.

Downtown Zones and Sub-zones

Form-based codes are described by "transects" that are designated with the letter "T" and an associated number that organizes the zones from the most natural setting (T1) to the most urban setting (T6). The transects applied to the Downtown Precise Plan are General Urban (T4) and Urban Center (T5).[9] The Downtown Code also includes sub-zones that are slight variations of base zones. The open sub-zone is denoted with a "-O" and is applied to allow more uses than the base zone allows in specific areas but within the same form and character of the base zone; and/or to more easily allow certain uses that are already allowed in the base zone. In addition, in this way, the open sub-zone can provide additional flexibility to lots at or near intersections that function or can function as a neighborhood node of nonresidential uses. The proposed Downtown Code includes the following base zones and sub-zones:

- T4 Neighborhood (T4N). The intent of this zone is to establish a walkable neighborhood environment of small-to-medium-footprint, moderate-intensity mixed-use buildings and housing choices, supporting and within short walking distance of neighborhood-serving retail and services. This zone provides a transition in scale between the city's downtown core and adjacent residential neighborhoods. The sub-zone is T4N-O.
- T4 Main Street (T4MS). The intent of this zone is to establish a walkable, vibrant district of medium-to-large-footprint, moderate intensity, mixed-use buildings and housing choices, supporting neighborhood and community-serving ground floor shopping, food, and services, including civic, institutional, maker/craft/artisanal businesses (both indoor and outdoor). The sub-zone is T4MS-O.
- T5 Neighborhood (T5N). The intent of this zone is to establish a walkable neighborhood environment of large-footprint, high-intensity mixed-use buildings supporting and within short walking distance of neighborhood shopping, services, and transit. The sub-zone is T5N-O.
- T5 Main Street (T5MS). The intent of this zone is to establish a walkable, urban neighborhood environment with large-footprint, high-intensity mixed-use buildings in close proximity to the multimodal transit station, with neighborhood-serving shopping and services. This zone has no sub-zone.

[9] For additional information visit the Form-Based Codes Institute website at www.formbasedcodes.org.

In addition to the intent and sub-zones described above, the proposed Downtown Code identifies standards for each Zone that include topics such as building placement, encroachments, maximum envelopes, adjacency standards, building form, frontages, parking, and signage.

Figure 3-7a and Figure 3-7b show the proposed Zoning Map, which identifies specific urban design requirements, including further height limitations based on location and intended physical character. Figure 3-8 shows the maximum height envelope allowed in different parts of the Downtown Precise Plan Area (accounting for height bonuses). The Downtown Code includes a Limited Height Overlay that reduces the maximum height envelope on individual parcels that contain or are adjacent to historic resources. Table 3-4 summarizes the development standards for each Downtown Zone by maximum building height and building design, which includes the building form, placement, and frontages within each Downtown Zone in the Downtown Precise Plan Area. A comprehensive list of the regulations in the proposed Downtown Precise Plan's associated Downtown Code is included in Chapter 9 of the proposed Downtown Precise Plan.

TABLE 3-4 DOWNTOWN CODE DEVELOPMENT STANDARDS SUMMARY

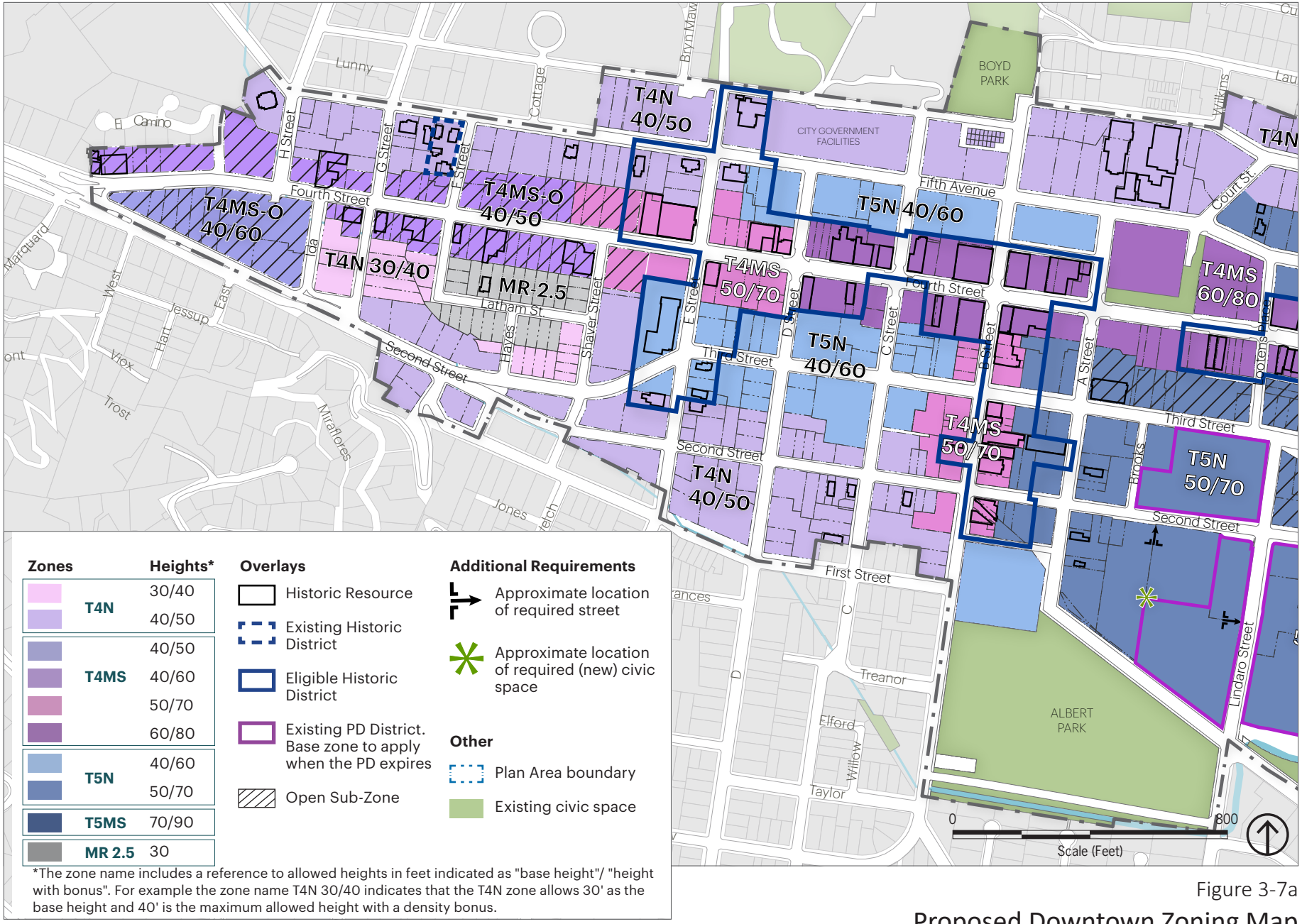
Zones		Maximum Building Heights		Building Design		
Base [a]	Sub-zone [b]	Stories [c]	Height [c]	Form	Placement	Frontages
T4N	T4N-O	3 stories (base) 4 stories (bonus)	40 feet (base) 50 feet (bonus)	Primarily house-form (detached)	Small front/side setbacks	Residential and shopfront
T4MS	T4MS-O	4 stories (base) 6 stories (bonus)	50 feet (base) 70 feet (bonus)	Primarily block-form (attached)	Small to no front/side setbacks	Predominantly shopfront
T5N	T5N-O	4 stories (base) 6 stories (bonus)	50 feet (base) 70 feet (bonus)	Primarily block-form (mainly attached)	Small to no front/side setbacks	Residential and shopfront
T5MS	None	6 stories (base) 8 stories (bonus)	70 feet (base) 90 feet (bonus)	Primarily block-form (attached)	Small to no front setbacks, no side setbacks	Predominantly shopfront

Notes:
[a] T4N = T4 Neighborhood, T4MS = T4 Main Street, T5N = T5 Neighborhood, and T5MS = T5 Main Street.
[b] The open sub-zone is applied to allow more uses than the base zone allows but within the same form and character of the base zone; and/or to more easily allow certain uses that are already allowed in the base zone.
[c] The "base" allowance reflects the maximum allowable height for structures in this zone. In the case that a height bonus is applied to proposed development, the "bonus" citation states the maximum allowed number of stories and feet in height. The building height bonuses are only permitted if the additional square footage is dedicated as affordable housing.
Source: Public Review Draft Downtown San Rafael Precise Plan, 2020.

3.7.2.5 DOWNTOWN SUB-AREAS

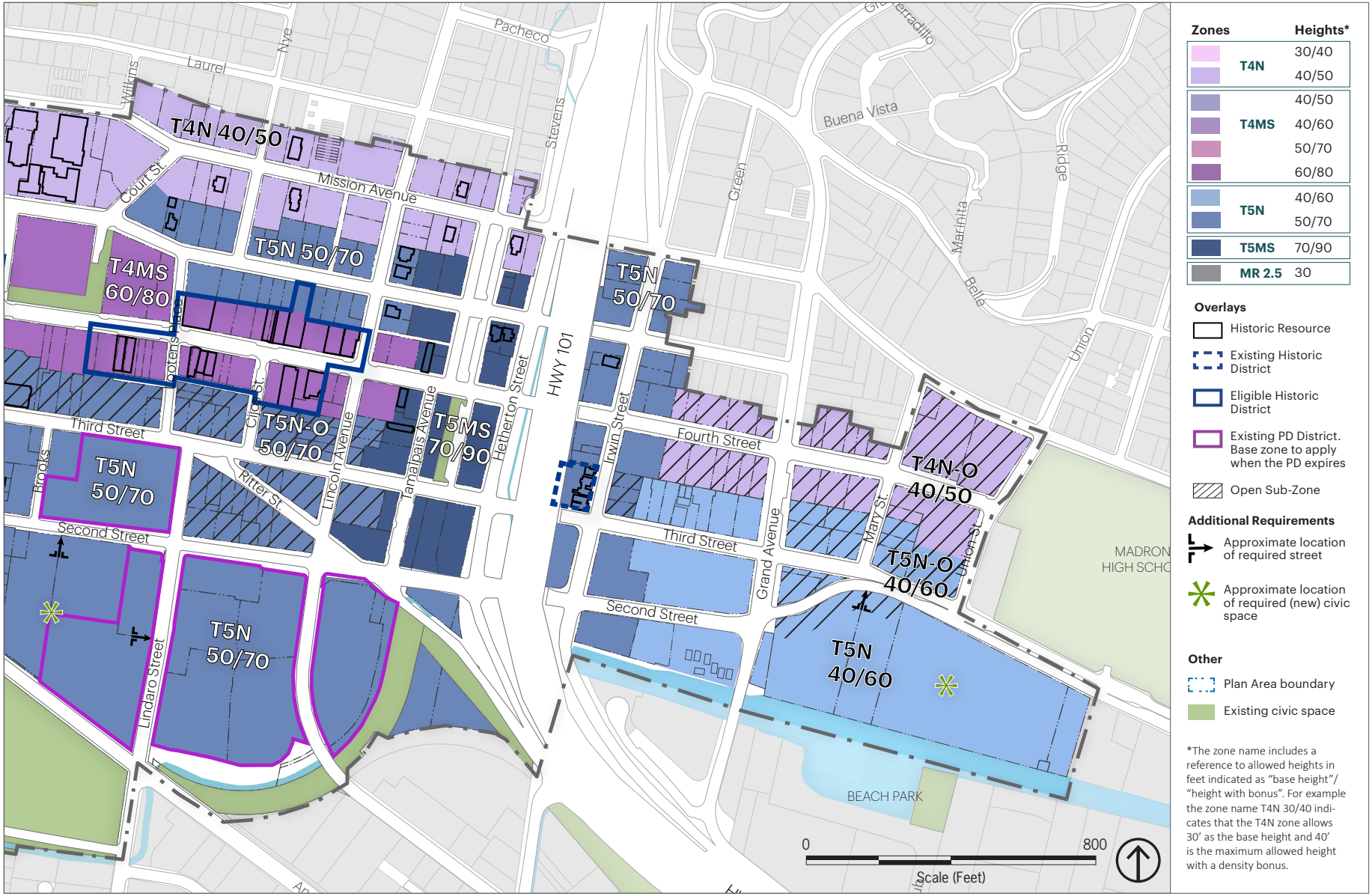
As noted in the previous section, the Downtown Precise Plan would establish four sub-areas to recognize the existing character and development styles that define different portions of the Downtown Precise Plan Area. By distinguishing the four sub-areas, the Downtown Precise Plan's development approach places a sharper focus on the special features and needs of each sub-area.

From west to east, the four sub-areas, shown on Figure 3-9, are referred to as the West End Village, Downtown Core, Downtown Gateway, and Montecito Commercial Area. Table 3-5 shows the growth potential for each sub-area.



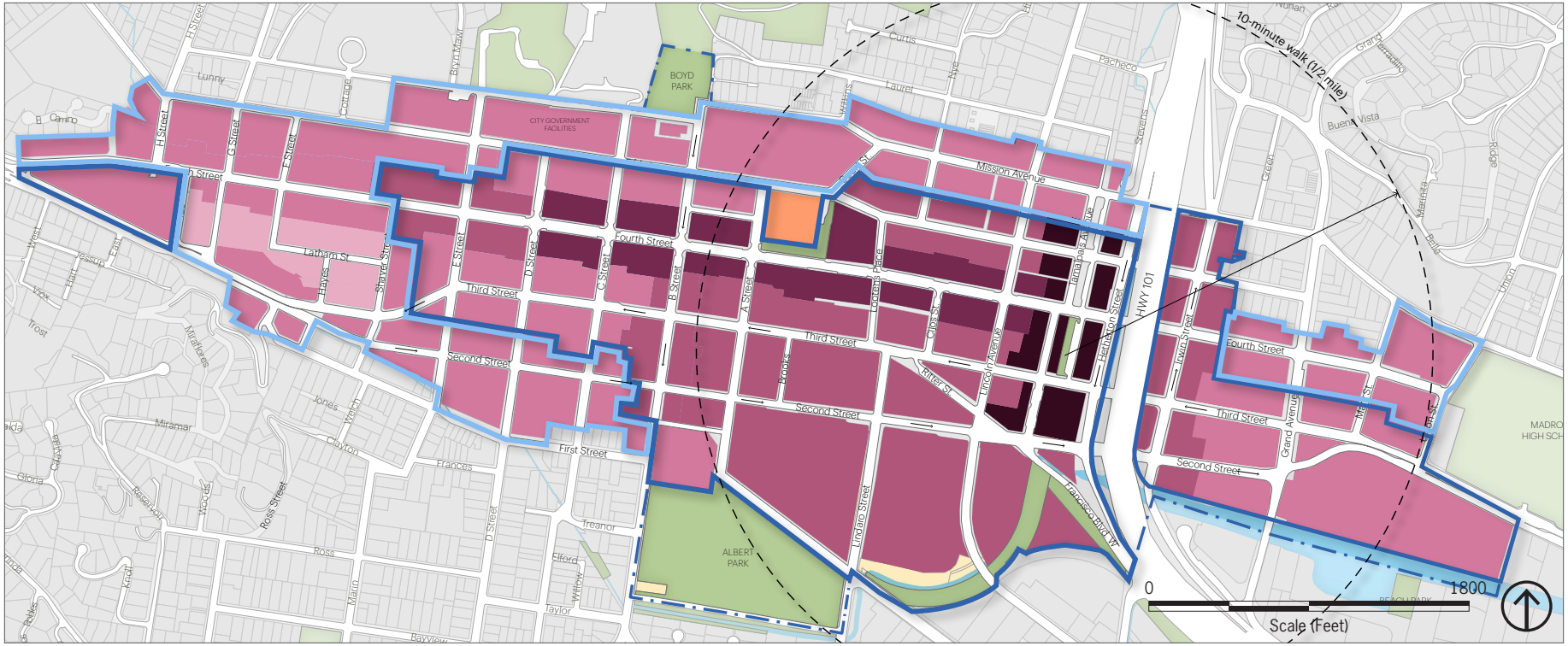
Source: Downtown San Rafael Precise Plan, 2020.

Figure 3-7a
Proposed Downtown Zoning Map



Source: Downtown San Rafael Precise Plan, 2020.

Figure 3-7b
Proposed Downtown Zoning Map



Source: Downtown San Rafael Precise Plan, 2020.

Maximum Base Heights

- 30 feet
- 40 feet
- 50 feet
- 60 feet
- 70 feet
- 102 feet (height bonus not allowed)

Height Bonus Tiers

- Tier 1 - 10 feet maximum
- Tier 2 - 20 feet maximum
- Half-mile radius from SMART/ San Rafael Transit Center (AB 1763 applies)

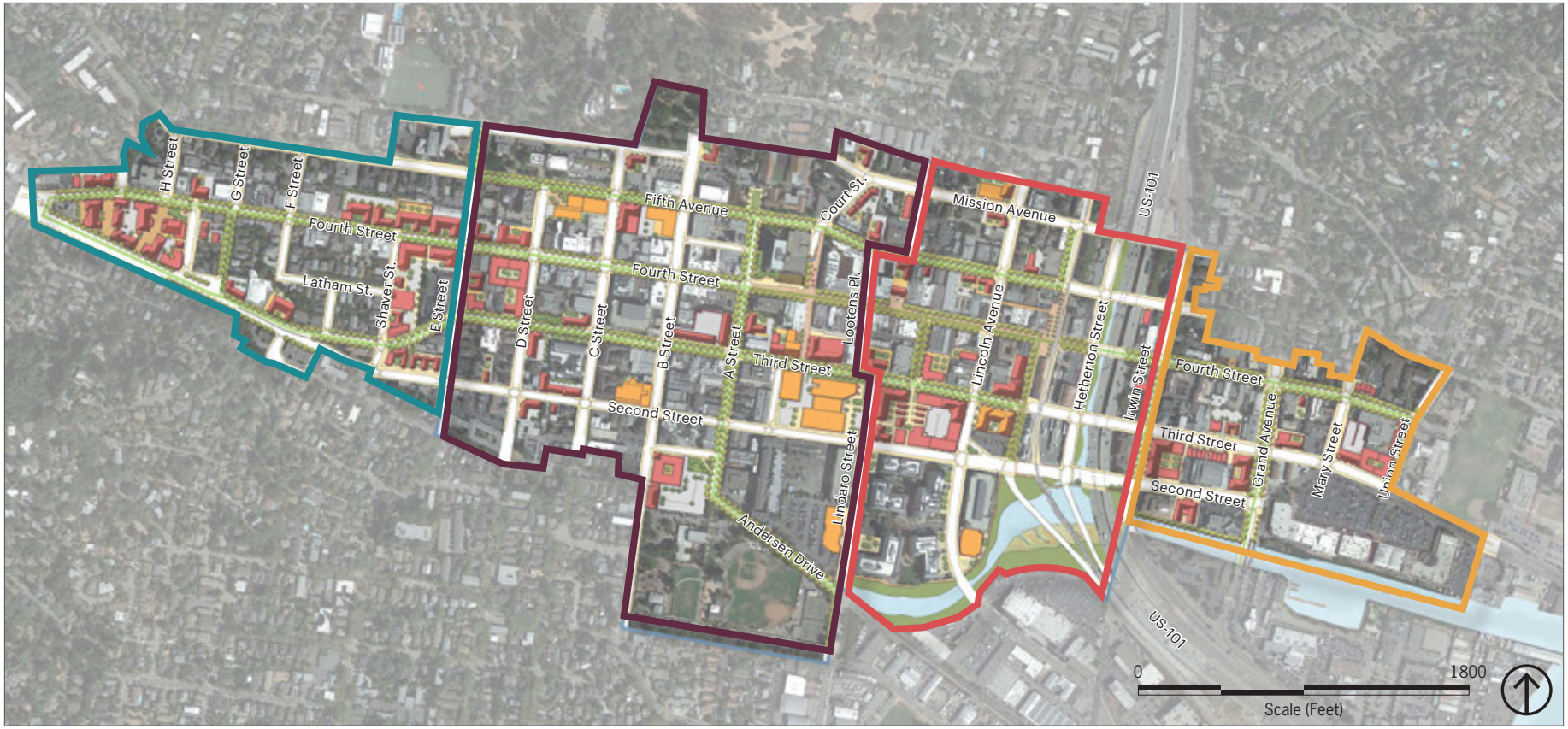
Note:

1. A project using an AB 1763 height bonus is not eligible for any other height bonus.

2. Please refer to Chapter 5, Historic Resources, and Chapter 9, Downtown Form-Based Code, of the Downtown San Rafael Precise Plan, for additional information.

Figure 3-8

Proposed Downtown Building Height Limits



Source: Downtown San Rafael Precise Plan, 2020.

- Downtown Gateway
- Downtown Core
- West End Village
- Montecito Commercial
- Potential infill opportunity sites*
- Buildings entitled/ under construction

* Potential infill projects shown here are conceptual and for illustrative purposes only

Figure 3-9
Downtown Sub-Areas

TABLE 3-5 DOWNTOWN PRECISE PLAN DEVELOPMENT PROGRAM BY SUB-AREA

Downtown Sub-area	Residential		Non-Residential		General Plan Land Use	Zones/ Sub-zone	Maximum Height Limits
	Units [a]	Population [b]	Square Feet [c]	Jobs [c]			
West End Village [d]	360	612	70,000	200	Downtown Mixed Use, Medium and High Density Residential	T4N, T4MS-O, MR 2.5	Six stories (70 feet)
Downtown Core [e]	620	1,054	373,000	1,040	Downtown Mixed Use	T4N, T4MS, T5N, T5N-O	Six stories (70 feet)
Downtown Gateway [f]	830	1,411	210,000	640	Downtown Mixed Use	T4N, T4MS, T5N, T5N-O, T5MS	Eight stories (90 feet)
Montecito Commercial Area [g]	390	663	45,000	140	Downtown Mixed Use	T4N-O, T5N, T5N-O,	Six stories (70 feet)
Total	2,200 [h]	3,740	698,000	2,020			

Notes:
[a] An average residential unit size of 1,000 square feet (gross area) is applied in the Downtown Precise Plan Area.
[b] An average population of 1.7 persons per household is applied in the Downtown Precise Plan Area.
[c] Jobs are calculated by applying a rate of 1 job per 350 square feet of built-up area (gross area), with exceptions as needed for approved projects.
[d] Includes several small, approved infill projects (Shaver Street, Fifth Avenue/ G Street).
[e] Includes 930 Tamalpais, 67 approved units (Eden Housing), 41 units under const (815 B Street); BioMarin, 999 Third Street (207,000 square feet); 755 Lindaro Corporate Center (72,000 square feet); AC Marriott (140 rooms); Public Safety Center (44,000 square feet).
[f] Includes 77 approved assisted-living units at 800 Mission and 120 units at 703 Third Street.
[g] Numbers for the Montecito Commercial Area sub-area do not consider the potential redevelopment of Montecito Plaza.
[h] The 2,200 units correspond to 2,100 households (5 percent vacancy rate).
Source: Public Review Draft Downtown San Rafael Precise Plan, 2020.

The vision and overall buildout intent for each sub-area is described as follows:

- **West End Village.** The West End Village sub-area on the western edge of the Downtown Precise Plan Area has an eclectic feel with a mix of historic homes, newer mixed-use development, and shops along Fourth Street. The West End Village sub-area also has the Victorian Village on Fifth Avenue, one of San Rafael's three historic districts. The West End Village is envisioned as an eclectic downtown neighborhood with a variety of housing choices, small shops, parks, and plazas. Improvements in the West End Village sub-area include the creation of a western gateway at the Second and Fourth Street intersection, addition of neighborhood-scale public space, improvements to bicycle and pedestrian facilities, and new residential development. Potential future development in this sub-area would occur at lower densities than the Downtown Core and Downtown Gateway sub-areas. Improvements to streetscapes and the addition of small plazas or parks are proposed to enhance the public right-of-way and bolster a sense of place unique to the neighborhood.
- **Downtown Core.** The Downtown Core sub-area currently forms the heart of the Downtown Precise Plan Area, largely centered around Fourth Street. This sub-area provides access to stores, offices, restaurants, art galleries, museums, and cultural institutions The Downtown Core sub-area is envisioned to remain the retail, dining, cultural, and entertainment center of San Rafael, offering a diverse set of uses and an authentic, memorable "downtown experience." Improvements in the Downtown Core sub-area include strengthening multimodal travel, increasing safety for bicycles and pedestrians, and protecting historic resources. Improvements to public spaces, including Albert Park

and Court Street Plaza, are proposed. A number of large projects are already in the pipeline in this sub-area, and several more are in conceptual stages.

- Downtown Gateway. The Downtown Gateway sub-area includes several regional transportation hubs, including the Downtown San Rafael SMART Station and the San Rafael Transit Center. This sub-area also includes the north- and southbound on- and off-ramps to US-101 and is a significant gateway to the Downtown Precise Plan Area and central Marin County. The Downtown Gateway sub-area is envisioned as a vibrant, mixed-use gateway that can support new residential mixed-use development, employment opportunities, and civic spaces. Planned improvements in this sub-area include new mixed-use development, reinforcing gateway character, creating public plazas, and improving the safety of bikes and pedestrians. Substantial redevelopment is anticipated in the Downtown Gateway sub-area due to its regional transportation links. The Downtown Precise Plan recommends the promotion of more affordable housing in potential mixed-use development near the SMART station. The text provides flexibility with respect to the San Rafael Transit Center since the final site of the facility has yet to be determined.
- Montecito Commercial Area. The Montecito Commercial Area on the eastern end of the Downtown Precise Plan Area is primarily a retail/service district with a few office and residential buildings. It is envisioned as transforming over time as large retail uses are replaced or augmented by mixed-use projects that include residential uses above ground-floor commercial space. The neighborhood will be better connected to the other Downtown sub-areas via improvements to the area under Highway 101 and along Irwin Creek. It will also be better connected to the San Rafael Canal waterfront through a shoreline paseo and water-oriented development. The Downtown Precise Plan includes a "vignette" that reimagines the 11-acre Montecito Shopping Center as a mixed-use project, but this is envisioned as a longer-term project and is not included in the development program.

3.7.2.6 DOWNTOWN PRECISE PLAN IMPLEMENTATION

Conceptual Priority Improvement Projects

The Downtown Precise Plan would be implemented by facilitating infill development; carrying out short-term pilot and tactical urbanism[10] projects, such as pedestrian plazas and parklets; and investing in capital improvements at key locations. Conceptual priority projects would occur at nodes where they can stimulate private investment and contribute to the Downtown Precise Plan Area's continued role as a mixed-use and cultural destination for the region. The Downtown Precise Plan identifies conceptual priority street and transportation infrastructure improvement projects and conceptual open space improvement projects.

Economic Development Strategies and Actions

The proposed Downtown Precise Plan includes economic development strategies and actions. These aim to support existing businesses, streamline permitting, reduce regulatory barriers, attract new businesses,

[10] Tactical urbanism includes low-cost, temporary changes to the built environment, usually in cities, intended to improve local neighborhoods and city gathering places.

and market the Downtown Precise Plan Area as a great place to visit. The strategies also seek to maintain the Downtown Precise Plan Area's contribution to the fiscal well-being of the City through partnerships with the private sector, financial strategies, and engaging the business community.

The proposed Downtown Precise Plan also includes strategies to aggregate small parcels and reduce development costs. This includes reduced fees, parking requirements, and development incentives on merged lots as well as tax programs such as Mills Act contracts.[11] It also offers ideas to assist local retailers and other small businesses.

Affordable Housing and Anti-displacement Strategies

The City of San Rafael currently implements several citywide programs to support the production of affordable housing and to protect existing tenants from displacement. The Downtown Precise Plan proposes an extension of these policies in the strategies for housing production and tenant protection. It also proposes new strategies such as tenant relocation provisions, a one-for-one replacement program for affordable housing units, and incentives to extend affordability controls.

Historic Resource Management

Historic Preservation Ordinance

The Downtown Precise Plan includes specific recommendations to be considered to strengthen the San Rafael Historic Preservation Ordinance so that it more effectively protects historic resources. This includes preparation of a full Historic Context statement for the Downtown Precise Plan Area, and revised provisions for the review of alterations to historic structures.

Historic Districts

The Downtown Precise Plan describes methods to conserve historic resources that are considered important visual and character-defining resources to maintain the existing fabric. These methods would protect the scale and character of distinct areas and serve as a tool to ensure future infill development complements the traditional neighborhood character, fabric, and setting.

Historic Resources Actions

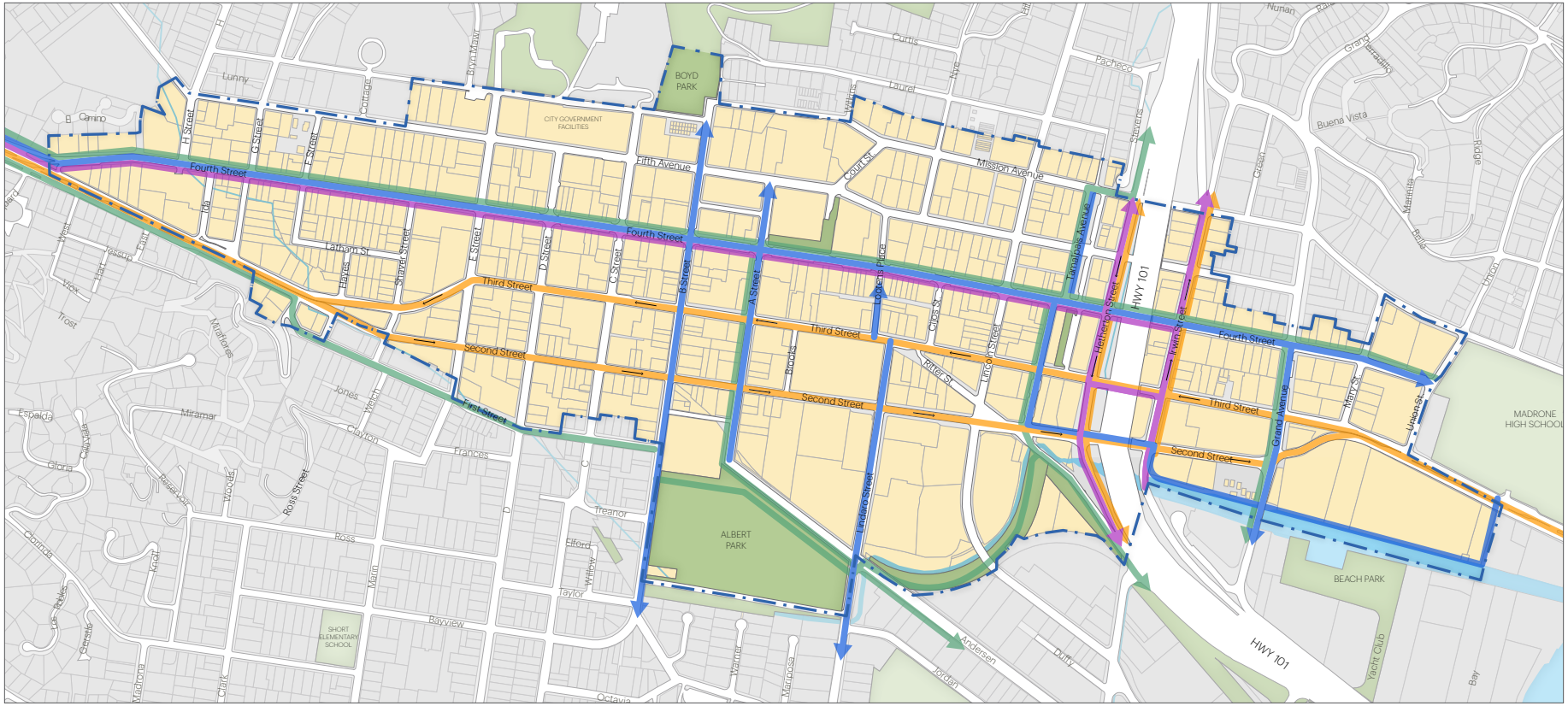
The Downtown Precise Plan includes a set of actions to be considered in the future to advance historic preservation goals. These include creation of additional incentives, a clearer process for local designations, more regular inventory updates, streamlining planning procedures, and developing educational materials.

[11] The Mills Act is a state law allowing cities to enter into contracts with the owners of historic structures. Such contracts require a reduction of property taxes in exchange for the continued preservation of the property.

Transportation and Parking

The Downtown Precise Plan proposes changes to the transportation network that would improve access in and around the Downtown Precise Plan Area for all modes of transportation, improve the safety of intersecting transportation modes, and support an appropriate amount of parking. The proposed Downtown Precise Plan includes strategies and improvements for the street design and operations, pedestrian network, bicycle network, vehicular network, and transit network. Figure 3-10 shows the proposed multimodal transportation network in the Downtown Precise Plan Area. The figure shows that individual streets have clearly defined modal priorities; this will influence future transportation planning and design decisions. The Downtown Precise Plan also includes management strategies for ride-hailing, self-driving vehicles, and micromobility (e.g., bikes, e-bikes, and e-scooters), parking, vehicle travel reduction, and wayfinding. Key elements of the transportation program include:

- Street design and operation principles such as universal design, recognition that streets are public spaces, minimizing conflicts between modes, accommodating goods movement, meeting emergency response needs, and protecting natural systems.
- Strategies to improve and maintain the pedestrian environment include widening sidewalks where feasible and designing them to create different functional zones, upgrading crosswalks, avoiding driveway crossings, improving lighting, and adding wayfinding signage. Specific enhancements are proposed along Fourth Street, along Tamalpais Avenue, at the gateway intersection of Second Street and Fourth Street, and on the cross-streets under US-101.
- Strategies to enhance the bikeway network include new bicycle lanes, upgraded bicycle crossings, reduced driveway cuts, better buffering of bicycles from vehicle traffic and parking lanes, increased bicycle parking, and a bike share program. Bike lane improvements are proposed on Tamalpais Avenue (Mission Avenue to Second Street), Fifth Avenue, Grand Avenue (Second Street to Fourth Street), Second Street (Marquard Avenue to Miramar Avenue), A Street, First Street, and in Albert Park.
- Strategies to improve vehicular traffic flow including intersection improvements, Transportation Demand Management (TDM) programs, new gateway elements, and technology upgrades to traffic signals. Specific improvements include upgrading the US-101 on and off ramps; converting B Street to two-way traffic; converting a segment of Francisco Boulevard West to one-way traffic; and realigning the Second Street/Fourth Street/Marquard Avenue intersection.
- Strategies to improve transit include identifying transit priority corridors (potentially including transit-only lanes) and technology improvements, enhancing transit stop amenities, and exploring the feasibility of a Downtown shuttle.
- Specific street reconfigurations to balance the needs of multiple travel modes are proposed along Fourth Street, Tamalpais Avenue, B Street, and D Street. Conceptual cross-sections are included in the Downtown Precise Plan, showing addition of bike lanes and removal of on-street parking spaces in some instances.
- Strategies to make it easy and possible to find parking through adoption of performance metrics to inform adjustments to parking rates and regulations.



Source: San Rafael Downtown Precise Plan, 2020.

0 1,600
Scale (Feet)

- Plan Area boundary
- Pedestrian priority network
- Bicycle priority network
- Transit priority network
- Vehicular priority network

Figure 3-10
Multimodal Network Plan in the Downtown Precise Plan Area

The Downtown Precise Plan also includes recommendations for vehicle trip reduction (e.g., TDM programs), parking, and curbside management. Some of these recommendations are carried forward from the 2017 *City of San Rafael Downtown Parking and Wayfinding Study*. In general, the emphasis is on maximizing the use of existing parking rather than increasing parking supply. The Downtown Precise Plan supports the dedication of parking that is available for public use within new, privately constructed parking garages. It also supports concepts such as shared parking, dynamic pricing, stacked parking to use space more efficiently, and the use of technology to provide real-time information on where spaces are available. A curbside management strategy is recommended to respond to emerging issues related to delivery vehicles, ridesharing and Transportation Network Company vehicles, and shared vehicles. The Downtown Code reduces off-street parking requirements for new development, recognizing the availability of other travel modes and potential burden of high parking requirements on development.

Utility Infrastructure Improvements

The Downtown Precise Plan includes several infrastructure improvements which are either planned or under consideration, and the Downtown Precise Plan ultimately recommends their implementation. Such improvements include replacement of water supply pipes, construction and maintenance of capital facilities, and replacement of gas pipelines. Recommendations made in the Downtown Precise Plan largely follow that of existing plans.

Adaptation to Climate Change Recommendations

The Downtown Precise Plan recognizes that adaptation to climate change and future sea-level rise are important considerations that are necessary to guide new development as well as infrastructure upgrades over the 20-year buildout horizon of the Downtown Precise Plan.

3.8 2040 DEVELOPMENT PROJECTIONS

This EIR analyzes the potential for growth between 2020 and 2040, which represents a 20-year buildout horizon. Under CEQA Guidelines Section 15126.6(3)(A), when a project consists of the revision of a plan or policy, the project's impacts are assessed against existing conditions, and future conditions under the existing plan are treated as the "No Project" alternative. The 2040 horizon year is generally consistent with other key planning documents, including *Plan Bay Area* 2040, which is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy.[12] *Plan Bay Area* 2040 is the long-range integrated transportation and land-use/housing strategy through 2040 for the San Francisco Bay Area pursuant to Senate Bill 375, the Sustainable Communities and Climate Protection Act.[13]

[12] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. Plan Bay Area, Strategy for a Sustainable Region. March (adopted July 18).

[13] The Act to amend Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, and 65588 of, and to add Sections 14522.1, 14522.2, and 65080.01 to, the Government Code, and to amend Section 21061.3 of, to add Section 21159.28 to, and to add Chapter 4.2 (commencing with Section 21155) to Division 13 of, the Public Resources Code, relating to environmental quality.

Under Section 15064(d) of the CEQA Guidelines, "In evaluating the significance of the environmental effect of a project, the lead agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project." The projections represent the City's estimation of "reasonably foreseeable" development that could occur over the next 20 years under the General Plan and are used as the basis for the EIR's environmental assessment. See Chapter 4, Environmental Analysis, of this Draft EIR, for a description of environmental analysis scenarios for this EIR. The projections do not presume that every parcel is developed to the maximum level allowed under the General Plan. Rather, they recognize regional demographic and economic forecasts, and the probable share of regional growth that would be captured by San Rafael given its policies and land use regulations. Horizon year (2040) projections within the EIR Study Area are shown in Table 3-6 by total projections, and those specific to the Downtown Precise Plan Area are shown in Table 3-7.

TABLE 3-6 PROPOSED 2040 BUILDOUT PROJECTIONS IN THE EIR STUDY AREA

Category	Existing Conditions (2020)	Projected Growth by Area (2020-2040)		Net Change (2020–2040)	Buildout Estimates (2040)
		City	Unincorporated		
Households	28,132	3,860	390	4,250	32,382
Residential Units	29,529	4,050	410	4,460	33,989
Total Population	75,751	8,010	900	8,910	84,661
Employees	44,200	4,050	65	4,115	48,315

Source: City of San Rafael, 2020.

TABLE 3-7 PROPOSED 2040 BUILDOUT PROJECTIONS IN THE DOWNTOWN PRECISE PLAN AREA

Category	Existing Conditions (2020)	Net Change (2020–2040)	Buildout Estimates (2040)
Households	1,496	2,100	3,596
Residential Units	1,571	2,200	3,771
Total Population	2,315	3,570	5,885
Employees	11,000	2,020	13,020

Source: City of San Rafael, 2020.

3.9 INTENDED USES OF THIS EIR

This Draft EIR is intended to review potential environmental impacts associated with the adoption and implementation of the proposed project and determine corresponding mitigation measures, as necessary. This Draft EIR is a program-level EIR and does not evaluate the impacts of specific, individual developments that may be allowed in the future under the proposed project. Each future project will conduct additional environmental review, as required by CEQA, to secure any necessary discretionary development permits. As part of this process, subsequent projects will be reviewed by the City for consistency with the General Plan and this Draft EIR.

Projects successive to this Draft EIR include, but are not limited to, the following:

- Approval and funding of major public projects and capital improvements.
- Issuance of permits and other approvals necessary for implementation of the proposed project.
- Property rezoning consistent with the proposed General Plan.
- Development plan approvals, such as tentative maps, variances, conditional use permits, planned developments, and other land use permits.
- Permit issuances and other approvals necessary for public and private development projects.
- Development agreement processes and approvals.

The 2040 population and employment forecasts in this Draft EIR will serve as parameters for environmental analysis for future development projects within San Rafael. In the event that proposed development in the city would exceed the buildout projections used in this Draft EIR, the Director of Community Development shall require environmental review for any subsequent development to address growth impacts that would occur as a result of development exceeding the General Plan projections and related Draft EIR assumptions. This does not preclude the City, as lead agency, from determining that an EIR would be required for any development under the relevant provisions of CEQA (e.g., Section 21166 and related guidelines).

3.10 REQUIRED PERMITS AND APPROVALS

The proposed project would require adoption by the San Rafael City Council. The Planning Commission and other decision-making bodies will review the proposed project and make recommendations to the City Council. While other agencies may be consulted during the General Plan Update process, their approval is not required for General Plan Update adoption. However, subsequent development under the General Plan Update may require approval of State, federal, responsible, and trustee agencies that may rely on the programmatic EIR for decisions in their areas of permitting.

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4. Environmental Analysis

This chapter describes the organization of the environmental analysis section of this Draft EIR and the assumptions and methodology of the impact analysis and the cumulative impact setting.

CHAPTER ORGANIZATION

This chapter of the Draft EIR is made up of 18 subchapters that evaluate the direct, indirect, and cumulative environmental impacts of the proposed project. In accordance with Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, of the CEQA Guidelines, the potential environmental effects of the proposed project are analyzed for potential significant impacts in the following 18 environmental issue areas, which are organized with the listed abbreviations:

4.1	Aesthetics (AES)	4.10	Hydrology and Water Quality (HYD)
4.2	Agriculture and Forestry Resources (AGF)	4.11	Land Use (LU)
4.3	Air Quality (AIR)	4.12	Mineral Resources (MIN)
4.4	Biological Resources (BIO)	4.13	Noise (NOISE)
4.5	Cultural and Tribal Resources (CULT)	4.14	Population and Housing (POP)
4.6	Energy (ENE)	4.15	Public Services and Recreation (PS)
4.7	Geology and Soils (GEO)	4.16	Transportation (TRANS)
4.8	Greenhouse Gas Emissions (GHG)	4.17	Utilities and Service Systems (UTIL)
4.9	Hazards and Hazardous Materials (HAZ)	4.18	Wildfire (FIRE)

Each subchapter is organized into the following sections:

- Environmental Setting offers a description of the existing environmental conditions, providing a baseline against which the impacts of the proposed project can be compared, and an overview of federal, State, regional, and local laws and regulations relevant to each environmental issue.
- Standards of Significance refer to the quantitative or qualitative standards, performance levels, or criteria used to evaluate the existing setting with and without the proposed project to determine whether the impact is significant. These thresholds are based primarily on the CEQA Guidelines, and also may reflect established health standards, ecological tolerance standards, public service capacity standards, or guidelines established by agencies or experts.
- Impact Discussion gives an overview of the potential impacts of the proposed project and explains why impacts are found to be significant or less than significant prior to mitigation. As appropriate, impacts are first addressed for General Plan 2040 and then for the Downtown Precise Plan, clearly denoted with separate headings. This subsection also includes a discussion of cumulative impacts related to the proposed project. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronym or abbreviated reference to the impact section.

STANDARDS OF SIGNIFICANCE

As stated above, significance criteria are identified before the impact discussion subsection, under the subsection, "Standards of Significance." For each impact identified, a level of significance is determined using the following classifications:

- Significant (S). A significant impact includes a description of the circumstances where an established or defined threshold would be exceeded.
- Less Than Significant (LTS). A less-than-significant impact includes effects that are noticeable, but do not exceed established or defined thresholds, or can mitigated below such thresholds.
- No Impact. A no impact conclusion describes circumstances where there is no adverse effect on the environment.
- Significant and Unavoidable (SU). For each impact identified as being significant, the EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse effect. If one or more mitigation measure(s) would reduce the impact to a less-than-significant level successfully, this is stated in the EIR. Significant and unavoidable impacts are described where mitigation measures would not diminish these effects to less-than-significant levels. The identification of a program-level significant and unavoidable impact does not preclude the finding of less-than-significant impacts for subsequent projects that comply with the applicable regulations and meet applicable thresholds of significance.

EVALUATION METHODOLOGY

Under CEQA, the decision as to whether an environmental effect should be considered significant is reserved to the discretion of the City of San Rafael, acting as the lead agency, based on substantial evidence in the record as a whole, including views held by members of the public. An ironclad definition of significant effect is not always possible because the significance of an activity may vary based on the setting. The analysis in the Draft EIR is based on scientific and factual data that has been reviewed by the lead agency and represents the lead agency's independent judgment and conclusions.[1] This section describes the methodology for the program-level evaluation in Chapters 4.1 through 4.18 with respect to the horizon year, the baseline, the application of the proposed General Plan 2040 policies and Downtown Code, potential future projects in a priority development area (PDA) or a transit priority area (TPA), parking impacts, effects of the environment on the project, and cumulative impacts.

2040 HORIZON DEVELOPMENT POTENTIAL

As discussed in Chapter 3, Project Description, of the Draft EIR, the proposed project includes two long-range planning documents; 1) General Plan 2040 and 2) The Downtown San Rafael Precise Plan. The environmental analysis in this EIR discusses the potential for adverse impacts to occur from extending the buildout potential in the EIR Study Area to horizon year 2040; increasing the buildout potential in the EIR Study Area; General Plan land use designation changes; new and modified General Plan goals, policies,

[1] California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15064(b).

and programs; and new Zoning designations and Downtown Code regulations in the Downtown Precise Plan Area.

The 2040 horizon development potential under the proposed project includes the net increase of maximum development potential for the Downtown Precise Plan Area, plus the development potential for the remainder of the city. As shown in Tables 3-6 and 3-7 in Chapter 3, Project Description, of this Draft EIR, this combined projected new growth in the entire EIR Study Area for the 2040 horizon year includes 4,250 new households, 4,460 new residential units, 8,910 new residents, and 4,155 new employees by 2040. Of these, up to 2,100 new households, 2,200 new residential units, 3,570 new residents, and 2,020 new employees would be within the Downtown Precise Plan Area.

Because the proposed project consists of two long-term policy documents that are intended to guide future development activities and City actions, and because no specific development projects are proposed as part of the project, it is reasonable to assume that future development would occur incrementally or gradually over the 20-year buildout horizon (e.g., 2020 to 2040). However, while this assumption describes the long-range nature of the proposed project, it does not prohibit or restrict when development can occur over the horizon period.

BASELINE

As discussed in Chapter 3, Project Description, of this Draft EIR, although many of the goals, policies, and programs of the existing General Plan are being affirmed and incorporated into the proposed project, this EIR does not evaluate the proposed project compared to the full potential buildout allowed by the existing General Plan, but rather evaluates the impacts of the proposed project compared to existing conditions, as required by CEQA Guidelines Section 15126.2. As shown in Table 4-1, the baseline represents the existing conditions on the ground ("physical conditions"), as described in Table 3-6 and Table 3-7 in Chapter 3, Project Description.

TABLE 4-1 EXISTING BASELINE CONDITIONS

Category	Downtown Precise Plan Area	Remainder of the EIR Study Area	Total EIR Study Area
Households	1,496	26,636	28,132
Residential Units	1,571	27,958	29,529
Total Population	2,315	73,436	75,751
Employees	11,000	33,200	44,200

Note: As described in Chapter 3, Project Description, of this Draft EIR, the EIR Study Area includes is the planning area, sphere of influence, and the city limits. The EIR Study Area is shown on Figure 3-2.
Source: City of San Rafael, 2020.

GENERAL PLAN 2040 POLICIES AND DOWNTOWN CODE

As discussed in Chapter 3, Project Description, a comprehensive list of goals, policies, and programs is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. The proposed goals, policies, and programs aim to reduce vehicle miles traveled, greenhouse gas emissions, air and water pollutants, energy consumption, water demand, and solid waste generation by promoting

infill development; increase opportunities for alternative modes of transportation, pedestrian and bicycle access and connectivity, and local jobs; protect open space; conserve natural resources; and require adherence to green building practices. General Plan policies aim to avoid hazardous conditions and facilitate a healthy and safe environment for residents and visitors to San Rafael. In addition, General Plan policies aim to protect cultural resources, including historic buildings, and ensure new development and redevelopment is compatible with neighboring land uses. While the proposed policies and programs in Appendix B aim to reduce environmental impact, the EIR process provided an additional opportunity to modify the policies and programs to ensure they adequately reduce impacts from potential future projects in San Rafael.

Additionally, the proposed Downtown Code, which would replace existing zoning regulations for all of the properties in the Downtown Precise Plan Area with the exception of a few parcels in the Latham Street area, which would retain their Multifamily Residential District ([Medium Density] 2,500 square feet per dwelling unit [MR2.5]) zoning designation, and the existing open space zoning designations. The changes to General Plan 2020 goals, policies, and programs include both substantive and nonsubstantive changes, while the Downtown Code would consist of new zoning regulations for the Downtown Precise Plan Area.

Substantive General Plan policy and program changes include addition, removal, or functional revisions (i.e., not purely semantic) in ways that have the potential to result in a physical impact on the environment. Discussions of how substantive policy changes and the new Downtown Code may result in adverse physical changes are included in the analyses under each impact criterion in the Impact Discussion section in Chapters 4.1 through 4.18 of the Draft EIR. Amended and new policies collectively reflect the changes to the current General Plan 2020. The proposed goals, policies, and programs have been carefully reviewed for their adequacy in reducing and/or avoiding impacts to the environment that could occur from future development in the city. The proposed General Plan goals, policies, and programs are listed in the impact discussions of Chapters 4.1 through 4.18 to illustrate where they would reduce impacts from potential future development in San Rafael.

The content of the General Plan 2040 policies and the Downtown Code is directly integrated with and reflective of the proposed project as a whole. Therefore, impact discussions for the effects of the proposed project necessarily encompass analysis of the effects of these policies and the Downtown Code as a whole, and policies and code sections with relevance to CEQA topics are discussed in the appropriate chapters. Nonsubstantive changes include the renumbering of policies or minor text revisions, which do not have the potential to result in a physical change to the environment.

PRIORITY DEVELOPMENT AREAS AND TRANSIT PRIORITY AREAS

The Metropolitan Transportation Commission's and Association of Bay Area Governments' (ABAG) *Plan Bay Area* is the San Francisco Bay Area's Regional Transportation Plan/Sustainable Community Strategy. *Plan Bay Area* is the long-range integrated transportation and land use/housing strategy through 2040 for the Bay Area, pursuant to Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act. *Plan Bay Area* lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas (GHG) emissions from transportation vehicle miles traveled (VMT) (excluding goods movement) beyond the per capita reduction targets identified by the California Air Resources Board. *Plan Bay Area* 2040 is a

limited and focused update to the *Plan Bay Area* 2013, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.[2] The existing *Plan Bay Area* 2040 is currently being updated to extend the planning horizon to 2050.[3]

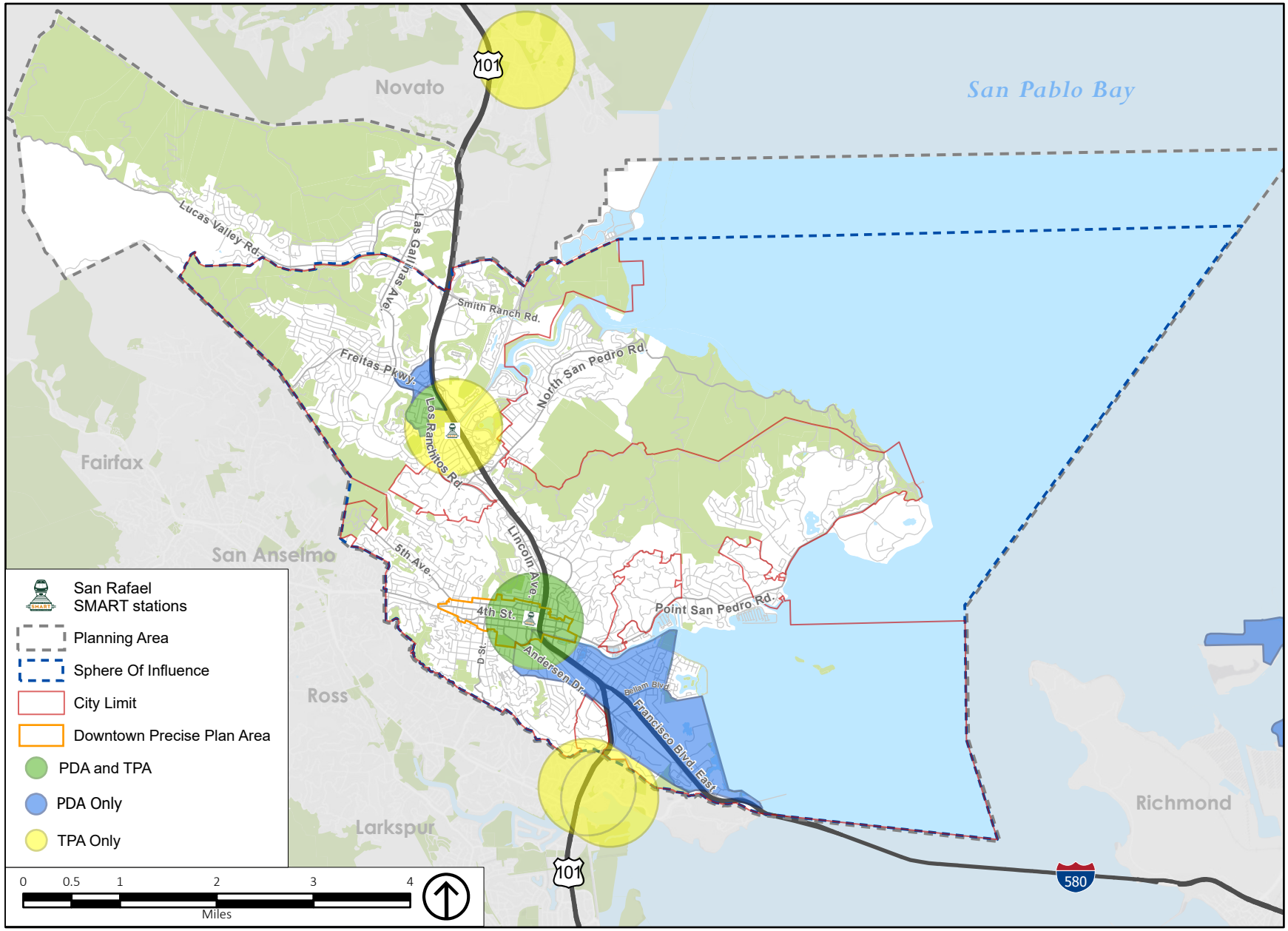
As part of the implementing framework for *Plan Bay Area*, PDAs and TPAs are identified as areas where concentrated development can have beneficial environmental effects and reduce adverse environmental impacts. As shown on Figure 4-1, the EIR Study Area has the following three PDAs and three TPAs:

- North San Rafael PDA. This is the northernmost PDA in the Terra Linda neighborhood. This PDA includes the Northgate Mall, Northgate I Centre, Northgate III, and the Las Gallinas office and gas station areas. As shown on Figure 4-2, this PDA overlaps with the Civic Center Smart Station TPA.
- Civic Center Smart Station TPA. This TPA, also shown on Figure 4-2, is in northern San Rafael and encompasses the 0.5-mile radius surrounding the Marin Civic Center SMART Station. This TPA overlaps with the North San Rafael PDA.
- Southeast San Rafael / Canal PDA. This is the southernmost PDA in San Rafael and includes the southeast part of the city, including the Canal neighborhood. As shown on Figure 4-3, this PDA shares a border with the Downtown San Rafael SMART Station PDA and TPA and the Larkspur TPA.
- Downtown San Rafael SMART Station PDA and TPA. As shown on Figure 4-4, the Downtown San Rafael SMART Station PDA and TPA is partially located in the Downtown Precise Plan Area. This PDA/TPA includes 503 acres surrounding the San Rafael Transit Center. About 200 acres of the Downtown Precise Plan Area is within 0.25 miles, or within a 10-minute walking distance, of the San Rafael Transit Center. This PDA/TPA is a designated "City Center PDA," which is defined as a subregional center of economic and cultural activity served by frequent, dedicated regional transit with connections to frequent subregional and local service. Objectives of City Center PDAs, in conjunction with TPAs, are to reduce GHG emissions, improve public health, alleviate the housing crisis, and facilitate economic development through coordinated land use and transportation planning. ABAG indicates that this PDA is expected to absorb about 40 percent of the city's household growth in the next 20 years, although General Plan 2040 is anticipating an even higher capture rate.[4]
- Larkspur TPA. A very small portion of this TPA that surrounds the Larkspur SMART Station is in the southern boundary of the San Rafael city limits. See Figure 4-1.

[2] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, Plan Bay Area 2040 Final, http://2040.planbayarea.org/, accessed on March 12, 2019.

[3] To read more about *Plan Bay Area,* go to www.planbayarea.org.

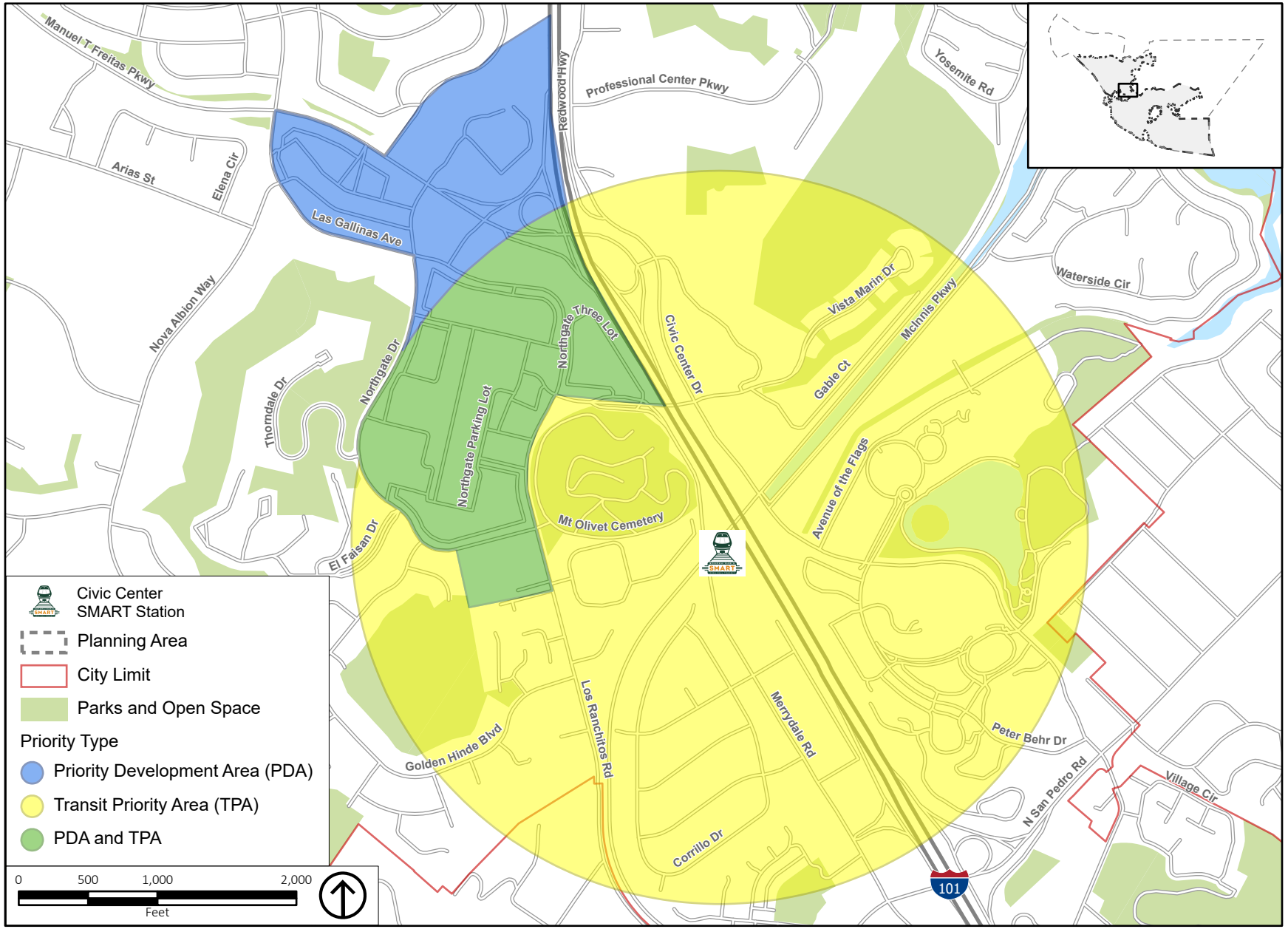
[4] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, *Plan Bay Area* 2040 Plan.



Source: ABAG/MTC, 2017; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4-1

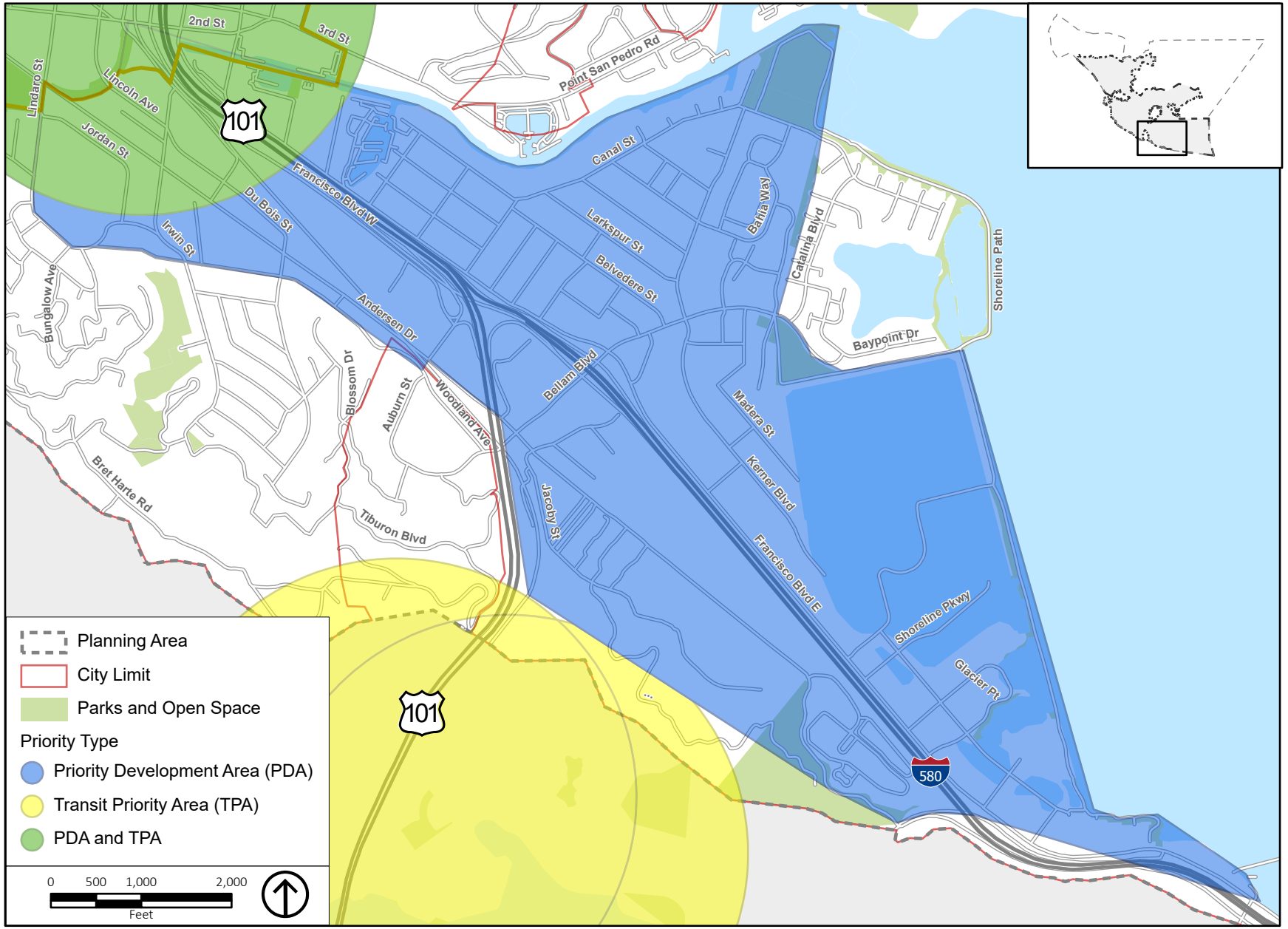
Priority Development Area and Transit Priority Areas



Source: ABAG/MTC, 2017; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

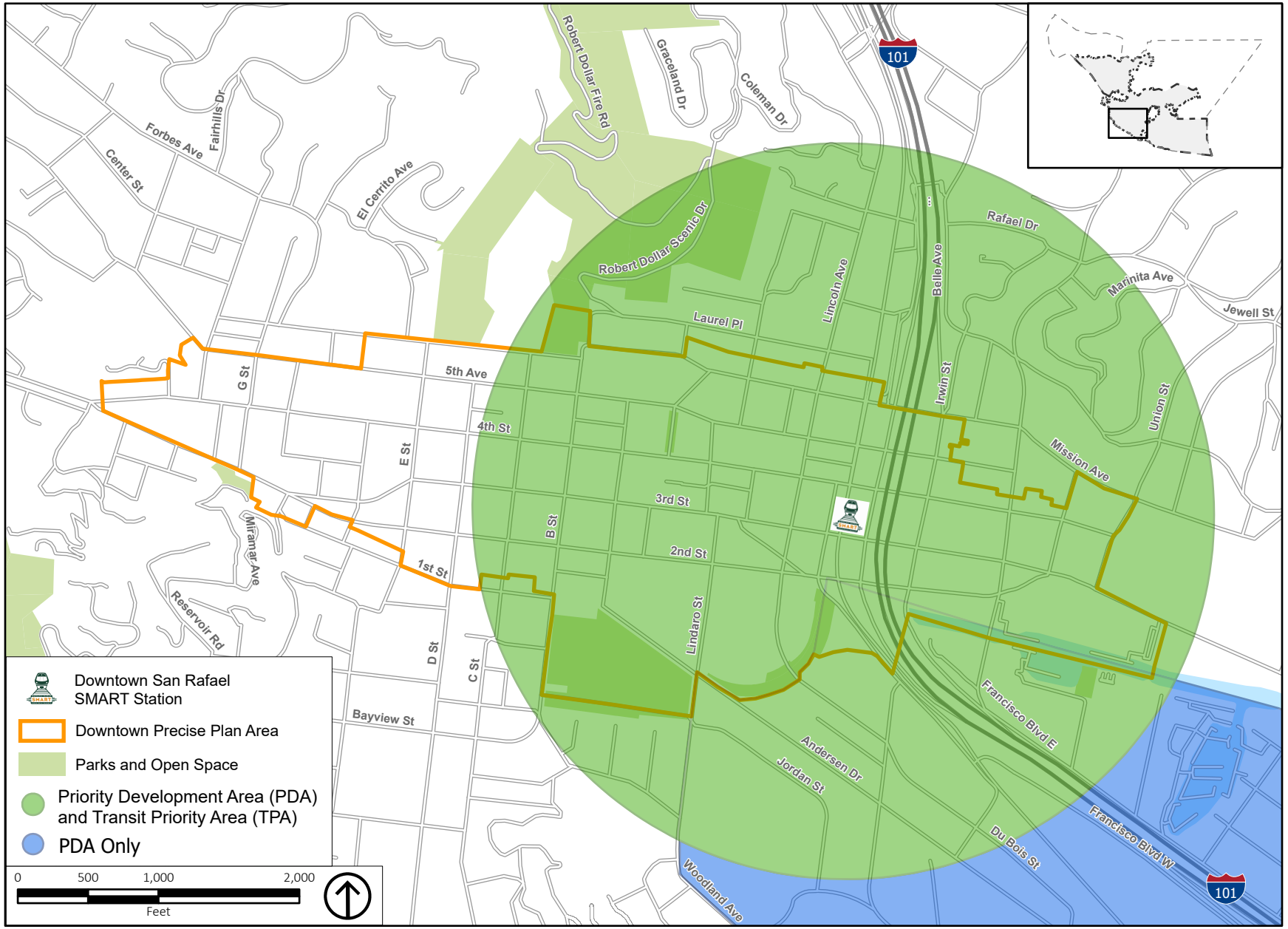
Figure 4-2

North San Rafael PDA and San Rafael Civic Center SMART Station TPA



Source: ABAG/MTC, 2017; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4-3
Southeast San Rafael / Canal PDA



Source: ABAG/MTC, 2017; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4-4
Downtown San Rafael SMART Station PDA and TPA

PRIORITY DEVELOPMENT AREAS

A PDA is a place that has convenient public transit service, often referred to as "transit-oriented," that is prioritized by local governments, such as San Rafael, for housing, jobs, and services within existing communities. A PDA is a funding and planning tool. If a local jurisdiction voluntarily nominates an area for PDA designation, the designation provides the local jurisdiction with access to funds and grants to develop and adopt area plans to plan for, design, and regulate future growth of the area; and constructed needed and/or planned infrastructure improvements.[5] PDAs are voluntarily nominated by the local jurisdiction. Further, the local jurisdiction has the full discretion to set the boundaries of the PDA within the eligible PDA areas that have been identified by *Plan Bay Area*. Overall, well over two-thirds of all regional growth in the San Francisco Bay Area by 2040 is projected to occur in PDAs. The PDAs identified in *Plan Bay Area* 2040 were projected to accommodate 80 percent (or over 525,570 units) of new housing and 66 percent (or 744,230) of new jobs in the region. Development in PDAs leverage existing infrastructure and therefore can minimize development in green field (undeveloped) areas and maximize growth in transit-rich communities to help lower VMT and consequently reduce GHG emissions, air quality pollutants, and noise from vehicles with internal combustion engines dependent on fossil fuels. Additionally, due to the location, infill development in PDAs result in fewer impacts related to agricultural, forestry, mineral, archaeological, and biological resources, energy, geology and soils, hydrology and water quality, and wildfire. Impacts related to concentrated development in the PDAs is discussed throughout this Draft EIR, and specific quantified impacts are described in Chapter 4.3, Air Quality, Chapter 4.8, Greenhouse Gas Emissions, and Chapter 4.16, Transportation, of this Draft EIR.

Certain potential future residential or mixed-use residential projects and projects in PDAs that meet defined criteria in the CEQA Guidelines may be eligible for CEQA streamlining. For example, while not exclusive to PDAs, due to their urban setting, development in a PDA is more likely to qualify for a CEQA Guidelines Section 15332, Infill Development Projects, Class 32 Categorical Exemption.

TRANSIT PRIORITY AREAS

In addition to PDAs, *Plan Bay Area* 2040 also identifies TPAs, which are areas within 0.5 miles of a major transit stop (i.e., a stop with service frequency of 15 minutes or less) that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon of a Transportation Improvement Program adopted pursuant to Section 450.216 or Section 450.322 of Title 23 of the Code of Federal Regulations. TPAs generally include existing neighborhoods served by transit and contain a wide range of housing options along with jobs, schools, and amenities. Certain potential future residential or mixed-use residential projects and projects[6] in TPAs that meet defined criteria in the CEQA Guidelines may be eligible for CEQA streamlining.

With respect to potential future development in a TPA, Senate Bill (SB) 743, which became effective on January 1, 2014, amended CEQA by adding Public Resources Code Section 21099 regarding analysis of transportation, aesthetics, and parking impacts for urban infill projects, among other provisions.

[5] City of San Rafael, Community Development, Planning Division, Priority Development Areas. https://www.cityofsanrafael.org/priority-development-areas-2020/, Accessed December 29, 2020.

[6] A project in a transit priority area is referred to as a transit priority project sometimes referred to as a TPP development.

With respect to transportation impacts, SB 743 required the Governor's Office of Planning and Research to identify new metrics for identifying and mitigating transportation impacts under CEQA, shifting from a congestion-based (level of service or LOS) standard to a VMT standard. Transportation impacts are discussed in Chapter 4.16, Transportation, of this Draft EIR.

With respect to aesthetics and parking, CEQA Section 21099(d)(1), states, "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a TPA shall not be considered significant impacts on the environment." Accordingly, these topics are no longer to be considered in determining significant environmental effects for projects that meet all three of the following criteria:

- Is located on an infill site which is defined as "a lot located within an urban area that has been previously developed or on a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with qualified urban uses."
- Is a residential, mixed-use residential, or an employment-center project.
- Is in a transit priority area, which is defined as "an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or Section 450.322 of Title 23 of the Code of Federal Regulations."

Accordingly, in compliance with SB 743, no significant aesthetic or parking impacts can be made in this environmental analysis for potential future development in the Civic Center Smart Station TPA and the Downtown San Rafael SMART Station TPA, which is also a PDA as shown on Figure 4-4. Aesthetic and parking impacts are not discussed further in this EIR with respect to potential future development in these designated TPAs. As appropriate, aesthetic impacts are considered for potential future development outside of these areas.

PARKING

Effective in 2010, parking inadequacy as a significant environmental impact was eliminated from the CEQA Guidelines by The Governor's Office of Planning and Research, which is the entity charged with drafting guidelines to help agencies implement CEQA. Accordingly, parking adequacy in the EIR Study Area is not discussed further in this EIR.

POTENTIAL EFFECTS OF THE PROJECT ON THE ENVIRONMENT

The California Supreme Court concluded in the *California Building Industry Association vs. Bay Area Air Quality Management District* (CBIA vs. BAAQMD) case that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents." The CBIA vs. BAAQMD ruling provided for several exceptions to the general rule where an analysis of the project on the environment is warranted: 1) if the project would exacerbate existing environmental hazards (such as exposing hazardous waste that is currently buried); 2) if the project qualifies for certain specific specified exemptions (certain housing projects and transportation priority projects per Public Resource Code (PRC)

21159.21 (f),(h); 21159.22 (a),(b)(3); 21159.23 (a)(2)(A); 21159.24 (a)(1),(3);or 21155.1 (a)(4),(6)); 3) if the project is exposed to potential noise and safety impacts on projects due to proximity to an airport (per PRC 21096); and 4) school projects require specific assessment of certain environmental hazards (per PRC 21151.8). Therefore, the evaluation of the significance of project impacts under CEQA focuses on the potential impacts of the proposed project on the environment, including whether the proposed project may exacerbate any existing environmental hazards. Existing environmental hazards in San Rafael include, but are not limited to, seismic hazards, sea level rise, and wildfire. Therefore, while the effects of these hazards on the proposed project are not subject to CEQA review following the *CBIA* case,[7] the City recognizes that seismic, wildfire, and flooding hazards from sea level rise are issues of local issues of concern. Therefore, a discussion of the project's potential to exacerbate these hazardous conditions, is provided in Chapter 4.7, Geology and Soils, Chapter 4.9, Hazards and Hazardous Materials, and Chapter 4.10, Hydrology and Water Quality, of this Draft EIR.

CUMULATIVE IMPACT ANALYSIS

A cumulative impact consists of an impact created as a result of the combination of the project evaluated in the EIR, together with other reasonably foreseeable projects causing related impacts. Section 15130 of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." Used in this context, cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. In the case of a long-range plan such as the General Plan and the Downtown Precise Plan, cumulative effects occur when future development under the long-range plan is combined with development in the surrounding areas, or in some instances, in the entire region.

Where the incremental effect of a project is not "cumulatively considerable," a lead agency need not consider that effect significant but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. The CEQA Guidelines state that a lead agency has discretion to determine if a project's contribution to a significant cumulative impact is cumulatively considerable.

The cumulative discussions in Chapters 4.1 through 4.18 of this Draft EIR explain the geographic scope of the area affected by each cumulative effect (e.g., immediate project vicinity, county, watershed, or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing macro-scale air quality impacts, all development within the air basin contributes to regional emissions of criteria pollutants, and basinwide projections of emissions are the best tool for determining the cumulative impact. In assessing aesthetic impacts, on the other hand, only development within the local area of change would contribute to a cumulative visual effect since the area of change is only visible in its vicinity.

[7] *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369.

CEQA Guidelines Section 15130 permits two different methodologies for the cumulative impact analysis:

- The "list" approach permits the use of a list of past, present, and probable future projects producing related or cumulative impacts, including projects both within and outside the city.
- The "projections" approach allows the use of a summary of projections in an adopted plan or related planning document, such as a regional transportation plan, or in an EIR prepared for such a plan. The projections may be supplemented with additional information such as regional modeling.

The cumulative impact analysis in this Draft EIR relies on a projections approach and takes into account growth from the proposed project within the EIR Study in combination with impacts from projected growth in the rest of Marin County and the surrounding region, as forecast by *Plan Bay Area* 2040. The following provides a summary of the cumulative impact setting for each impact area:

- Aesthetics: The cumulative setting for visual impacts includes potential future development under the proposed project combined with effects of development on lands adjacent to the city in Novato to the north, San Anselmo and Ross to the west, and Larkspur and the unincorporated Marin County communities to the south.
- Agricultural and Forestry Resources: The geographic scope of the cumulative analysis for agricultural and forestry resources considers those agriculture and forestry resources deemed to be resources of Statewide importance in the surrounding incorporated and unincorporated lands, the region, and the state.
- Air Quality: Cumulative air quality impacts could occur from a combination of the proposed project with regional growth within the San Francisco Bay Area Air Basin.
- Biological Resources: The geographic scope of the cumulative analysis for biological resources considers the surrounding incorporated and unincorporated lands and the region.
- Cultural and Tribal Resources: Cumulative impacts to cultural resources could occur from projected growth in the surrounding region.
- Energy: Cumulative impacts to energy resources could occur from the estimated growth in the energy provider's service area.
- Geology and Soils: Potential cumulative geological impacts could arise from future growth in the immediate vicinity of the adjoining jurisdictions.
- Greenhouse Gas Emissions: The cumulative impact analyses for greenhouse gas (GHG) emissions are related to the entire region. Because GHG emissions are not confined to a particular air basin but are dispersed worldwide, the cumulative impact analysis focuses on the global impacts and thus, is by its nature cumulative.
- Hazards and Hazardous Materials: The cumulative analysis considers the effects growth in the rest of Marin County and surrounding region.
- Hydrology and Water Quality: The geographic context used for the cumulative assessment of hydrology and water quality impacts, including the potential to exacerbate the potential for flooding, considers the watersheds that encompass San Rafael.

- Land Use and Planning: The geographic context for the cumulative land use and planning effects considers impacts from projected growth in the rest of Marin County and the surrounding region, as forecast in *Plan Bay Area* 2040.
- Mineral Resources: The geographic scope of the cumulative analysis for mineral resources considers the potential loss of a known regionally or locally significant mineral resource in the surrounding incorporated and unincorporated lands, the region, and the State.
- Noise: The traffic noise levels are based on cumulative traffic conditions that take into account cumulative development in the region.
- Population and Housing: Impacts from cumulative growth are considered in the context of their consistency with regional planning efforts.
- Public Services and Recreation: Cumulative impacts are considered in the context of projected growth in the rest of Marin County and the surrounding region, as forecast by *Plan Bay Area* 2040, and contiguous with the service area boundaries of the service providers evaluated in this section.
- Transportation: The analysis of the proposed project addresses cumulative impacts to the transportation network in the surrounding area.
- Utilities and Service Systems: Cumulative impacts are considered in the context of the estimated growth in each utility's service area.
- Wildfire: The analysis of the proposed project includes a discussion of how cumulative development in the region may exacerbate wildfire risk in San Rafael and the surrounding area.

4.1 AESTHETICS

This chapter describes the existing aesthetic character of the Environmental Impact Report (EIR) Study Area and evaluates the potential environmental consequences on visual resources from future development that could occur by adopting and implementing the proposed project. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts related to implementation of the proposed project.

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 REGULATORY FRAMEWORK

State Regulations

California State Scenic Highways Program

California's Scenic Highway Program was created by the State of California legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The State laws governing the Scenic Highways Program are found in the Streets and Highways Code, Sections 260 through 263. The California Scenic Highway Program is maintained by the California Department of Transportation (Caltrans). Caltrans has not designated any highway within the city of San Rafael as a State Scenic Highway. Furthermore, there are no officially designated State Scenic Highways in the county of Marin.[1]

California Building Code

The State of California provides a minimum standard for building design through Title 24, Part 2, of the California Code of Regulations (CCR), commonly referred to as the California Building Code (CBC). The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The City of San Rafael regularly adopts each new CBC update under the San Rafael Municipal Code (SRMC) Chapter 12.100, Adopted Codes. The CBC includes standards for outdoor lighting that are intended to reduce light pollution and glare by regulating light power and brightness, shielding, and sensor controls.

California Building Code: CALGreen

The California Building Standards Commission adopted the California Green Building Standards Code, also known as CALGreen. As part of the CBC, CALGreen is in Part 11 of Title 24. CALGreen establishes building standards aimed at enhancing the design and construction of buildings using building concepts that reduce negative impacts and increase positive environmental impacts by encouraging sustainable

[1] California Department of Transportation, 2019, California Scenic Highway Mapping System, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed on April 26, 2019.

construction practices. Specifically, Section 5.106.8, Light Pollution Reduction, establishes backlight, uplight, and glare ratings to minimize the effects of light pollution for nonresidential development. The local building permit process enforces the mandatory provisions of CALGreen. The City of San Rafael has regularly adopted each new CALGreen update under the SRMC Chapter 12.100, Adopted Codes.

Senate Bill 743

As described in Chapter 4, Environmental Analysis, of this Draft EIR, Senate Bill (SB) 743, which became effective on January 1, 2014, amended the California Environmental Quality Act (CEQA) by adding California Public Resources Code Section 21099 regarding analysis of aesthetics impacts for urban infill projects, among other provisions. CEQA Section 21099(d)(1), states, "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area (TPA) shall not be considered significant impacts on the environment."

Accordingly, these topics are no longer to be considered in determining significant environmental effects for projects that meet all three of the following criteria:

- Is located on an infill site which is defined as "a lot located within an urban area that has been previously developed or on a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with qualified urban uses."
- Is a residential, mixed-use residential, or an employment-center project.
- Is in a transit priority area, which is defined as "an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or Section 450.322 of Title 23 of the Code of Federal Regulations."

Accordingly, in compliance with SB 743, no significant aesthetic impact findings can be made in this environmental analysis for potential future development in the TPAs surrounding the Civic Center SMART Station and the Downtown San Rafael SMART Station (see Figure 4-2 and Figure 4-4 in Chapter 4, respectively). Aesthetic impacts are not discussed further in this EIR with respect to potential future development in these designated TPAs. As appropriate, aesthetic impacts are only considered for potential future development outside of these areas.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to aesthetics are primarily in the Land Use, Housing, Neighborhoods, and Community Design Elements. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.1.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives to minimize adverse impacts to visual resources in San Rafael. The SRMC is organized by title, chapter, and section. Most provisions related to aesthetics impacts are included in Title 2, Administration, and Title 14, Zoning, as follows:

- Chapter 2.18, Historic Preservation. This chapter is relevant to the preservation of structures, sites, and areas of special character or special historical, architectural, or aesthetic interest or value that contribute to the visual setting in San Rafael. Among other requirements, this chapter requires the protection, enhancement, perpetuation, and use of structures, sites, and areas that are significant examples of architectural styles of the past or are landmarks in the history of architecture.
- Title 14, Zoning. In addition to the General Plan, the Zoning Ordinance is the primary tool that shapes the form and character of physical development in San Rafael. The Zoning Ordinance contains all the Zoning Districts, and identifies land use standards, site development regulations, and other general provisions that ensure consistency between the General Plan and proposed development projects. Section 14.01.030, Purposes, states that the San Rafael Zoning Ordinance is, among other things, intended to reduce or remove negative impacts caused by inappropriate location, use, or design of buildings and improvements, promote design quality in all development, and preserve and enhance key visual features in the community, including the bay shoreline, canal, wetlands, and hillsides. The Zoning Ordinance sets forth the development standards, including those related to visual resources, as follows:
- Chapter 14.12, Hillside Development Overlay District (-H). In addition to the general purposes listed in Section 14.01.030, one of the key purposes of the hillside development overlay district is the implementation of the *Hillside Residential Design Guidelines* to ensure that future development displays sensitivity to the natural hillside setting and compatibility with nearby hillside neighborhoods.
- Chapter 14.15, Canalfront Review Overlay District (-C). Section 14.15.010, Specific Purposes, and Section 14.15.050, Canalfront Design Criteria, provide site design, architecture, and colors and materials design criteria that are intended to protect the unique characteristics of the San Rafael Canalfront area, which is designated by an overlay zone. These criteria work to enhance orientation of existing structures and to ensure new development is oriented with existing development. These sections also serve to improve and enhance public views and access in the San Rafael Canalfront area and promote design excellence through innovative use of materials and creative architecture.
- Chapter 14.16, Site and Use Regulations. Section 14.16.210, Historic Preservation, requires that the alteration of a structure on a landmark site or in a historic district may be subject to a certificate of appropriateness and review by the planning commission, consistent with the requirements of SRMC Chapter 2.18, Historic Preservation. Section 14.16.200, Hillside Residential Development Standards, regulates building heights on hillsides. Section 14.16.227, Light and Glare, regulates the type of colors, materials, and lighting to avoid creating undue off-site light and glare impacts. New or amended building or site colors, materials, and lighting would be required to comply with the standards, subject to review and recommendation by the police department, public works department, and community development department, described in this section. Further requirements include discouraging use of reflective or glossy materials, and the shielding of light fixtures and minimization of foot-candle intensity to minimize impacts on adjacent development. Section 14.16.360, Wireless Communication

Facilities, includes standards to regulate the design and placement of towers, antennas, and other wireless communication transmission and/or reception facilities. Section 14.16.361, Small Wireless Facilities, sets standards, requirements, and procedures for the installation of small wireless facilities.

- Chapter 14.18, Parking. Section 14.18.160, Parking Lot Screening and Landscaping, regulates the type of landscaping and trees for parking lots. Section 14.18.170, Lighting, states that lights provided to illuminate any parking facility or paved area shall be designed to reflect away from residential use and motorists. It is the intent to maintain light standards in a low-profile design, as well as to be compatible to the architectural design and landscape plan. Light fixtures (e.g., pole and wall-mount) should be selected and spaced to minimize conflicts with tree placement and growth.
- Chapter 14.19, Signs. Section 14.19.101, Purpose, states that this chapter is intended to regulate the location, size, type, and number of signs that are permitted in the city. These regulations are in part intended to preserve the visual appearance of the city. Section 14.19.046, Sign Programs, illustrates the City's establishment of a sign program intended to create design standards and provisions to regulate signs used for larger complexes, commercial centers, or buildings with multiple tenants, to achieve aesthetic compatibility between all signs proposed in a project, and with signs on adjacent properties. These standards include design continuity that requires all signs be of a common design theme and placement, use common materials, colors, and illumination. Section 14.19.055, Illumination Standards, further restricts the type of signs that may be permitted. This section minimizes the allowance of signs illuminated by an artificial source so as to influence light and glare on adjacent properties. This section outlines specific design criteria and restrictions for these signs, including an outline of which types of illuminated signs are prohibited within the city.
- Chapter 14.25, Environmental and Design Review Permits. This chapter implements General Plan policies concerning the environment and design by guiding the location, functions, and appearance of development. The key environmental and design goal of the City is to respect and protect the natural environment and ensure that development is harmoniously integrated with the existing qualities of the city. The permits aim to maintain the balance between the natural and built environment, ensure development materials are compatible with the surrounding environment and promote design excellence, contribute to the attractiveness of the city, preserve neighborhood integrity, enhance views from public property, and protect the right for citizens to conduct residential structure modifications while reducing the impacts to the neighboring residences. Section 14.25.050, Design Review Criteria, specifically identifies the standards for site design in Section 14.25.050(E). Section 14.25.050(E)(1), Views, states that major views of the San Pablo Bay, wetlands, bay frontage, the Canal, Mount Tamalpais, and the hills should be preserved and enhanced from public streets and public vantage points. In addition, respect views of St. Raphael's Church up "A" Street. Section 14.25.050(E)(2), Site Features, requires the City to respect site features and recognize site constraints by minimizing grading, erosion, and removal of natural vegetation. Sensitive areas such as highly visible hillsides, steep, unstable or hazardous slopes, creeks and drainageways, and wildlife habitat should be preserved and respected.

San Rafael Design Guidelines

The City adopted the interim *San Rafael Design Guidelines* (Design Guidelines) for residential and non-residential structures to ensure the design of new buildings and additions are compatible with their

surroundings. The Design Guidelines reflect what the City considers to be desirable design and are applicable in all areas except those that are amended by subsequent plans. Design Guidelines specific to both residential and non-residential developments include, but are not limited to, building design, scale, building height, roof shapes, and lighting. Review of projects is conducted by City staff and the Design Review Board to evaluate the quality of project design. In addition, in 2017, the City commissioned an effort by local architects, Design Review Board, and Planning Commissioners to evaluate current design guidelines and other design-related policies to define the elements of good design for projects in Downtown as a way to provide guidance for decision makers and developers. This document is called *Good Design Guidelines for Downtown*.

The Historic and Architecturally Significant Buildings section of the Design Guidelines applies to development in the immediate vicinity of buildings designated by the City of San Rafael as being historically or architecturally significant resources. The list of resources is based on a September 1986 survey. Design Guidelines prescribed for historically or architecturally significant resources in, but are not limited to, pattern and scale, transition, horizontal lines, proportions, materials, differentiation between ground floor and upper floors, roof shapes, and views of the St. Raphael Church spire. The Design Guidelines specifically require a view evaluation for locations in the viewshed of the spire if a future development is over one story.

Hillside Design Guidelines Manual

The *Hillside Design Guidelines Manual*, adopted in October 1991, establishes an environmental and design review process for residential development proposed on hillsides to ensure new development is compatible with neighboring development and that new development would not have a physical or visual impact on the natural setting of the hillside. The *Hillside Design Guidelines Manual* outlines design guidelines that are intended to provide the foundation for the Hillside Residential and Hillside Resource Residential General Plan land use designation, as guidelines for the environmental and design review process, and as guidelines for development on hillsides that does not fall into a hillside land use designation. The design guidelines provided in the *Hillside Design Guidelines Manual* include, but are not limited to, maximum density, maximum building height, additional height limits, preserve mature trees, and preserve unique vegetation. The *Hillside Design Guidelines Manual* outlines guidelines for removal of significant trees, hillside grading and drainage, as well as architectural standards with specific criteria for use of materials and colors.

Conceptual Plans

Canalfront Conceptual Plan and Design Guidelines

The *San Rafael Canalfront Conceptual Plan* (Canalfront Conceptual Plan) and associated *San Rafael Canalfront Design Guidelines* (Canalfront Design Guidelines) are two separate documents, adopted in December 2009. The Canalfront Conceptual Plan recommends the City improve access to the water's edge, which includes providing clear and open views toward the open space of the San Rafael Canal. The Canalfront Design Guidelines provide an architectural framework for future development and redevelopment. The Canalfront Design Guidelines are split into two sections, one that applies design guidelines to the entire canalfront, and a second that applies design guidelines to specific subareas within

the canalfront. The Canalfront Design Guidelines include reference to the water's edge, building scale and mass, building character and articulation, architectural style and materials, among others.

North San Rafael Vision Promenade Conceptual Plan

The *North San Rafael Vision*, completed in 1997, summarizes the community-wide effort for the vision of north San Rafael. The *North San Rafael Vision Promenade Conceptual Plan* (Promenade Conceptual Plan), adopted in November 2002, expands on the *North San Rafael Vision* and includes recommendations for pedestrian and bicycle ways, promenade amenities, and unified promenade themes. The Promenade Conceptual Plan includes criteria and recommendations for architectural elements, signage, lighting, landscaping, and the protection of views applicable to future development in north San Rafael.

Station Area Plans

There are two Station Area Plans, each for the immediate area around the existing SMART (Sonoma-Marin Area Rail Transit) Stations; one adjacent to the Downtown Transit Center and one near the Marin County Civic Center.

Downtown Station Area Plan

The *Downtown Station Area Plan* (Downtown SAP), adopted June 2012, encompasses the area within 0.5 miles of the Downtown San Rafael SMART Station. The Downtown SAP seeks to foster development and site improvements that promote a strong sense of place, to serve as a gateway to downtown San Rafael. The Downtown SAP includes implementation actions for streetscape treatments, pedestrian amenities, artwork, public gathering spaces, restored natural features, and high-quality architecture and design. Downtown SAP Chapter 3, Land Use and Building Design, specifically discusses building design to ensure new development around the station is vibrant and attractive, and complimentary to the characteristics of the area.

Civic Center Station Area Plan

The *Civic Center Station Area Plan* (Civic Center SAP), adopted August 2012 and amended September 2013, establishes land uses and regulations that would enhance the desirable character of the area, ensuring future development does not disrupt the existing character. The Civic Center SAP includes street orientation, building scale and massing, building configuration, parking, setbacks, and ground-level uses.

Shoreline Plans

The *Shoreline Park Master Plan*, completed in September 1989, and the *Shoreline Enhancement Plan*, completed in August 1991, are intended to guide the development of the Shoreline Park, an area of approximately 27.5 acres of land between Pickleweed Park and Point San Quentin on the eastern boundary of the EIR Study Area. The Shoreline Park trail is dedicated for public access and has been undergoing various improvements since the adoption of the *Shoreline Park Master Plan* and the *Shoreline Enhancement Plan*. The *Shoreline Park Master Plan* includes design details and policies that are related to trail materials, fence materials, landscaping, signage, picnic tables, benches and other seating, bollards, trash receptacles, barbeques, and rip rap. The *Shoreline Enhancement Plan* serves as an implementation

document that outlines the quantity and cost of materials and labor to implement the *Shoreline Park Master Plan*.

4.1.1.2 EXISTING CONDITIONS

EIR Study Area

Visual Character

Scenic Resources

Key elements that contribute to the visual character of the EIR Study Area include ridgelines, hillsides, and the waters of the San Francisco Bay, which includes San Pablo Bay and San Rafael Bay. San Rafael is nestled between hilly terrain to the north, west, south, and east, as well as the waters of the San Pablo Bay and San Rafael Bay to the east. Defining ridgelines visible from many vantage points in the EIR Study Area include Big Rock Ridge to the north, Red Hill to the west, Mount Tamalpais to the southwest, and San Pedro Mountain to the east. Development in the EIR Study Area has generally occurred in natural valleys bounded by the hilly terrain. Most neighborhoods in the EIR Study Area are in valleys, providing unique short-, medium-, and long-range views. Additional views from within the EIR Study Area include the Richmond-San Rafael Bridge, which is visible from China Camp State Park, from various mountains and hillsides, and from hillside neighborhoods facing southeast. Some outdoor open space has unobstructed views of portions of the city of San Francisco, including from San Pedro Mountain and from China Camp State Park, among others.

Several water features define the EIR Study Area, particularly along the eastern edge. The San Pablo Bay and San Rafael Bay provide estuary habitats, as well as far-field views of water and western Contra Costa County, along the eastern edge of the EIR Study Area. Several creeks run through the valleys of the EIR Study Area. The Gallinas Creek in northeastern San Rafael splits into two forks, with the north fork running through the Terra Linda and Smith Ranch neighborhoods, and the south fork flowing through and underneath the San Rafael Meadows and Santa Venetia neighborhoods.

Scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g., open space lands, mountain ridges, bay, or ocean views). Cities may also recognize scenic corridors as being locally significant. Scenic corridors are considered a defined area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or series of points along a linear transportation route. Public view corridors are areas in which short-range, medium-range, and long-range views are available from publicly accessible viewpoints, such as from city streets.

There are no officially designated scenic vistas in the EIR Study Area. However, General Plan 2020 identifies the following natural and built resources as visually significant, to the extent they are visible from public streets, parks, and public pathways:

- Mountains and Hillsides. Scenic views from the EIR Study Area to short- and long-range ridgelines and hillside open space include those of Mount Tamalpais, San Rafael Hill, San Pedro Ridge and Big Rock Ridge.

- San Pablo Bay and San Rafael Bay and Bay Wetlands. Both the San Pablo Bay and San Rafael Bay are prominent natural features on the eastern edge of the EIR Study Area, providing wetlands, extensive wildlife habitat, and open space.
- Offshore islands. Several offshore islands serve as wildlife habitat and are visible from higher elevations and limited shoreline areas within the EIR Study Area.
- Mission San Rafael Arcangel. The bell tower of the Mission San Rafael Arcangel in the Downtown Precise Plan Area is visible from some downtown locations, from adjacent hillsides, and from limited portions of I-580 and US-101.
- Marin Civic Center. The Marin Civic Center, designed by renowned architect Frank Lloyd Wright, is a prominent historic structure.
- San Rafael Canal. The San Rafael Canal is a defining water feature to the east of the Downtown Precise Plan Area. Several marinas, walking paths, parks, homes, and businesses are adjacent to the canal.

Neighborhoods

In addition to natural and built scenic resources, the city of San Rafael is known for its varied neighborhoods, each with their own unique visual character. Every neighborhood in the EIR Study Area is unique in its character, design, and physical amenities, each contributing to the diversity and vitality of the community. Some neighborhoods have significant defining features, such as the Eichler homes in the Lucas Valley, Marinwood, and Terra Linda neighborhoods, while others are more generally defined by natural features, such as tree-lined streets and hilly terrain as in the Los Ranchitos, Sun Valley, Fairhills, Lincoln San Rafael Hill, Gerstle Park, Picnic Valley, Bret Harte, and California Park neighborhoods. Several neighborhoods are adjacent to large amounts of open space, such as the Lucas Valley, Marinwood, Smith Ranch, Terra Linda, Los Ranchitos, Santa Venetia, Glenwood, Peacock Gap, Loch Lomond, Bayside Acres, Country Club, Dominican Black Canyon, and Gerstle Park neighborhoods. Each of these neighborhoods are in areas of the EIR Study Area that possess natural environments that define the visual setting of the EIR Study Area.

Neighborhoods in the EIR Study Area can also be distinguished by their commercial areas and density. Low-density neighborhoods with diverse retail include the Terra Linda, North San Rafael Commercial Center, Smith Ranch, Rafael Meadows, Civic Center, Lincoln San Rafael Hills, West End, Downtown, Montecito Happy Valley, Francisco Boulevard West, and the Canal neighborhoods. Neighborhoods that contain higher-density multifamily units include Terra Linda, the eastern edge of the Civic Center, and the Lincoln San Rafael Hill, Downtown, and Canal neighborhoods. Large commercial retail development exists in the Terra Linda and North San Rafael Commercial Centers, and in southeast San Rafael.

Light and Glare

Light pollution refers to all forms of unwanted light in the night sky around and above developed urban areas, including glare, light trespass, sky glow, and over lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species, and often reflects an unnecessarily high level of energy consumption. Light

pollution has the potential to become an issue of increasing concern as new development contributes additional outdoor lighting installed for safety and other reasons.

The EIR Study Area includes several urbanized areas with a variety of residential, commercial, and public uses. Existing sources of light and glare in the EIR Study Area are similar to those that would be found in any urbanized area, and include streetlamps, parking lot lighting, storefront and signage lighting, car headlamps, and interior lighting visible through windows. Light pollution is primarily limited to urban areas of the EIR Study Area, which are largely surrounded by large areas of open space.

Transit Priority Areas

As described in Section 4.1.1.1, Regulatory Framework, of this chapter, the TPA surrounding the San Rafael Civic Center Smart Station and the portion of the TPA surrounding the Downtown San Rafael SMART Station outside the Downtown Precise Plan Area (see Figure 4-2 and Figure 4-4 in Chapter 4, Environmental Analysis) are areas where no significant aesthetic impact findings can be made in this or future environmental analysis, pursuant to SB 743.

Downtown Precise Plan Area

Visual Character

Scenic Resources

Key elements that contribute to the visual character of the Downtown Precise Plan Area are associated with its historic fabric, density and scale, walkability, and its aesthetically rich architecture and natural environment. The northern boundary of the Downtown Precise Plan Area is located on the southern base of the Lincoln San Rafael Hill, a physical barrier between the Downtown Precise Plan Area and north San Rafael, and a backdrop for the Mission San Rafael Arcangel. The primary long-range ridgeline visible from the Downtown Precise Plan Area is Mount Tamalpais to the south. Although there are some views of Mount Tamalpais from the Downtown Precise Plan Area, long-range views of the Mount Tamalpais ridgeline are often obstructed by existing development in some areas and are not holistically visible from all portions of the area. While views of Mount Tamalpais are prominent from higher-elevation streets that are on the border of the Downtown Precise Plan Area such as Mission Avenue, this area is within the TPA surrounding the Downtown San Rafael SMART Station where no significant aesthetic impact findings can be made in this environmental analysis, pursuant to SB 743.

Natural features that contribute to the visual character of the Downtown Precise Plan Area include San Rafael Creek, Irwin Creek, and the San Rafael Canal. The San Rafael Creek is fed by tributaries from San Pedro Mountain to the east and ridgelines to the west of the Downtown Precise Plan Area. The creek flows along the southern boundary of the Downtown Precise Plan Area from Albert Park eastward. San Rafael Creek drains into the San Francisco Bay through the San Rafael Canal. A second water feature, Irwin Creek, splits off the San Rafael Creek at the western end of the San Rafael Canal, and runs underneath US-101 in a combination of culverts and open-air ditches. Although Irwin Creek is a water resource in the Downtown Precise Plan Area, the high-traffic Hetherton thoroughfare to the west, parking lots on top of,

and miscellaneous development to the east of Irwin Creek means that this water resource does not contribute to the visual character of the Downtown Precise Plan Area to the extent that it might.

As discussed previously, General Plan 2020 identifies several specific natural and built resources that are considered visually significant when seen from public rights-of-way. Specific resources in the Downtown Precise Plan Area that are determined to be visually significant in General Plan 2020 include:

- Mission San Rafael Arcangel. The bell tower of the Mission in the Downtown Precise Plan Area is visible from some downtown locations, from adjacent hillsides, and from limited portions of I-580 and US-101.
- San Rafael Canal. The San Rafael Canal is a defining water feature to the east of the Downtown Precise Plan Area. Several marinas, walking paths, parks, homes, and businesses are adjacent to the canal.
- Mountains and Hillsides. Scenic views from the Downtown Precise Plan Area to short- and long-range views of ridgelines and hillside includes views of Mount Tamalpais.

Neighborhoods

General Plan 2020 recognizes the Downtown Precise Plan Area as one of the most culturally and visually significant neighborhoods in the city. Non-native American settlement in San Rafael's Downtown Core began with the establishment of the Mission San Rafael Arcangel in 1817. The area surrounding the Mission grew steadily, following a grid pattern, until the city's incorporation in 1874, which spurred accelerated growth and development in the Downtown Precise Plan Area. Thus, the Downtown Precise Plan Area is partially characterized by its eclectic historic structures. Refer to Chapter 4.5, Cultural and Tribal Cultural Resources, of this Draft EIR, for more information on the historic structures in the Downtown Precise Plan Area.

Downtown San Rafael is currently organized by seven distinct districts that each have their own neighborhood identities and are characterized as:

- The West End District located on the west boundary of the Downtown Precise Plan Area, is characterized by commercial and residential buildings 2- to 3-stories in height, with scattered single-family homes surrounding it.
- The Fifth/ Mission District is home to many commercial service businesses as well as civic properties such as City Hall and the San Rafael Public library. This District is generally characterized by 1- to 4-story buildings and includes the Mission San Rafael Archangel.
- The Fourth Street District is the commercial core of the Downtown Precise Plan Area, as well as a cultural and gathering location. This District has many unique architectural styles from various historic resources. Buildings heights in this District generally range between 2- to 5-stories in height; however, this District includes one building that is 9 to 10 stories in Courthouse Square.
- The Second/Third District encompasses the two major east-west thoroughfares in the Downtown Precise Plan Area which connects west Marin County to US-101. This District contains many single-story commercial retail buildings and is scattered with office and commercial residential mixed-use buildings ranging from 2- to 4-stories in height.

- The Lindaro District contains the San Rafael Corporate Center which consists of 3- and 5-story buildings, with some buildings being over 70 feet tall. Development surrounding the San Rafael Corporate Center is primarily one story in height.
- The Hetherton District is the primary north-south thoroughfare in the Downtown Precis Plan Area, starting in the north by the US-101 off-ramp and ending in the south at the US-101 south on-ramp. The Hetherton district is highly auto oriented and parallels the SMART rail line and station.
- The Montecito District, located on the east end of the Downtown Precise Plan Area, is characterized by commercial uses which range from 1- to 2-stories in height.

Light and Glare

The Downtown Precise Plan Area is designated as urban and built out with a variety of residential, commercial, and public uses. Existing sources of light and glare in the Downtown Precise Plan Area are similar to those that would be found in any urbanized area, and include streetlamps, parking lot lighting, storefront and signage lighting, car headlamps, and interior lighting visible through windows.

Transit Priority Area

As described in Section 4.1.1.1, Regulatory Framework, and shown on Figure 4-4 in Chapter 4, Environmental Analysis, of this Draft EIR, the TPA surrounding the Downtown San Rafael SMART Station is an area where no significant aesthetic impacts findings can be identified in this environmental analysis pursuant to SB 743. As described in Chapter 4, Environmental Analysis, of this Draft EIR, the TPA surrounding the Downtown San Rafael SMART Station includes 503 acres surrounding the San Rafael Transit Center. About 200 acres of the Downtown Precise Plan Area is within 0.25 miles, or within a 10-minute walking distance, of the San Rafael Transit Center. As shown on Figure 4-4, because the TPA only covers the Downtown Precise Plan Area from roughly D Street to the eastern border of the Downtown Precise Plan Area, aesthetic impacts are only considered for potential future development in the area west of D Street. These areas include the proposed West End Village sub-area and portions of the Downtown Core sub-area as proposed in the Downtown Precise Plan (see Figure 3-9 in Chapter 3, Project Description).

Under the existing General Plan 2020 and zoning, the maximum heights allowed in the western portion of this area, which under existing conditions includes portions of the West End District, the Fifth/Mission District, the Fourth Street District, and the Second/Third District, are 30, 36, and 42 feet. Views that are visible from public locations in the West End Village sub-area include medium-range views of the Mount Tamalpais ridgeline and San Rafael Hill.

Heights allowed in the Downtown Precise Plan Area that are not in the TPA surrounding the Downtown San Rafael SMART Station range from 36 to 42 feet. Views that are visible from public locations in this area include medium-range views of the Mount Tamalpais ridgeline.

4.1.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in a significant aesthetic-related impact if it would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.
5. Result in significant cumulative impacts related to aesthetics.

With respect to standard number three, CEQA Section 21071, Urbanized Area Definition, has several metrics by which a city be defined as an urban area. CEQA Section 21071(a)(2) states that a city can be classified as an urban area if the city has a population of less than 100,000 persons and if the population of that city, and not more than two contiguous incorporated cities combined, equals at least 100,000 persons. As described in Chapter 3, Project Description, of this Draft EIR, the population of the EIR Study Area (including unincorporated urbanized areas) is 75,751. Two contiguous cities, Larkspur to the south of the EIR Study Area with 12,253 residents, and San Anselmo to the west of the EIR Study Area with 12,757 residents, brings the total population of the three contiguous cities to 100,761. Therefore, San Rafael is considered an urban area under CEQA Guidelines Section 21071 and this impact discussion is based on the second half of the CEQA standard number three.

4.1.3 IMPACT DISCUSSION

This section analyzes the proposed project's potential impacts to aesthetics. The evaluation of aesthetics and aesthetic impacts is highly subjective. It requires the application of a process that objectively identifies the visual features of the environment and their importance. Aesthetic description involves identifying existing visual character, including visual resources and scenic vistas unique to San Rafael (see Section 4.1.1.2, Environmental Setting). Changes to aesthetic resources due to implementation of the proposed project are identified and qualitatively evaluated based on the proposed modifications to the existing setting and the viewer's sensitivity. Project-related aesthetic impacts are determined using the threshold criteria discussed in Section 4.1.2, Standards of Significance.

AES-1 Implementation of the proposed project could have a substantial adverse effect on a scenic vista.

General Plan 2040

Future development under the proposed General Plan 2040 would have the potential to affect scenic vistas and/or scenic corridors if new or intensified development blocked views of areas that provide or contribute to such visual resources. Potential effects could include blocking views of a scenic vista/corridor from specific publicly accessible vantage points or the alteration of the overall scenic vista/corridor itself. Such alterations could be positive or negative, depending on the characteristics of individual future developments and the subjective perception of observers.

Future development consistent with the proposed General Plan 2040 could potentially result in an adverse impact to a scenic vista or corridor. Future development would have the potential to affect scenic vistas and/or scenic corridors if new or intensified development blocked views of areas that provide or contribute to such vistas. Potential effects could include blocking views of a scenic vista/corridor from specific publicly accessible vantage points or the alteration of the overall scenic vista/corridor itself. Such alterations could be positive or negative, depending on the characteristics of individual future developments and the subjective perception of observers.

The proposed Community Design and Preservation (CDP) and Conservation and Climate Change (C) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to scenic vistas and resources. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on scenic vistas:

Goal CDP-1: A Beautiful City. Preserve and strengthen San Rafael's natural and built features to enhance the appearance and livability of the city.

- Policy CDP-1.1: City Image. Reinforce San Rafael's image by respecting the city's natural features, protecting its historic resources, and strengthening its focal points, gateways, corridors, and neighborhoods.
- Policy CDP-1.2: Natural Features. Recognize and protect the key natural features that shape San Rafael's identity, including the Bay, local hills and ridgelines, creeks and wetlands, tree cover, and views of Mt. Tamalpais and other natural landmarks. Height limits and other building standards should respect San Rafael's natural topography and reinforce its sense of place, including the character and boundaries of individual neighborhoods.
- Policy CDP-1.3: Hillside Protection. Protect the visual integrity and character of San Rafael's hillsides and ridgelines.
  - Program CDP-1.3A: Hillside Design Guidelines. Continue to implement hillside design guidelines through the design review process, as well as larger lot size requirements where there are access limitations or natural hazards. Update the design guidelines as needed.
- Policy CDP-1.4: Waterfront Identity. Strengthen San Rafael's identity as a waterfront city, providing improved visual and physical access to San Pablo Bay, San Rafael Bay, and the San Rafael Canal.

  - Program CDP-1.4A: Canalfront Design Plan. Implement the Canalfront Conceptual Design Plan (2009) recommendations. Development near the shoreline should maximize views to the water and public access to the shoreline.
  - Program CDP-1.4B: Canal Promenade. Pursue development of a continuous pathway or promenade along the Canal waterfront.

- Policy CDP-1.5: Views. Respect and enhance to the greatest extent possible, views to the Bay and its islands; wetlands, marinas, and canal waterfront; hillsides and ridgelines; Mt. Tamalpais; Marin Civic Center; and St. Raphael's bell tower; as seen from streets, parks, and public pathways.
  - Program CDP-1.5A: Evaluating View Impacts. Consider the impact of proposed development on views, especially views of Mt Tamalpais and nearby ridgelines. Where feasible, new development should frame views of ridges and mountains and minimize reduction of views, privacy, and solar access.
  - Program CDP-1.5B: Guidance on View Protection. Establish clearer, more objective City guidelines and standards on view protection, privacy, and solar access for new development, additions, and alterations.
  - Program CDP-1.5C: Downtown Height Profile. Develop zoning and design tools that encourage both continuity and variation in building heights, along with improved solar access and interesting roof elements such as domes, cupolas, and corner towers. Views of Downtown should be accented by memorable building elements, rather than a flat profile of buildings of uniform height.

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.10: Hillside Preservation. Encourage preservation of hillsides, ridgelines, and other open areas that serve as habitat and erosion protection as well as visual backdrops to urban areas.
  - Program C-1.10A: Hillside Design Guidelines. Continue to implement Hillside Design Guidelines as well as management practices that promote ecological health, hazard reduction, and climate change mitigation.

In addition to the proposed General Plan 2040 goals, polices, and programs listed, as described in Chapter 3, Project Description, of this Draft EIR, the proposed Community Design and Preservation Element was reorganized as part of the proposed General Plan 2040 update and addresses five primary goals: a beautiful city, a sense of place, an improved public realm, quality construction and design, and protected cultural heritage. The policies emphasize protection of natural features, views, and the waterfront; improvements to gateways and corridors; and upgrades to plazas, public spaces, and streetscapes. This element also covers street trees, landscaping, and wayfinding signage more comprehensively than General Plan 2020 did. Furthermore, principles of good design have been incorporated.

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development under the proposed General Plan 2040 is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where future development would have a lesser impact on scenic vistas. The proposed General Plan 2040 reinforces existing uses, heights, and densities in most locations, with allowances for greater intensity only in a limited number of locations that support the goal of a more sustainable, less auto-oriented city. Specifically, areas of concentrated

growth would occur in areas such as the North San Rafael PDA and San Rafael Civic Center SMART Station TPA. As described in Section 4.1.1.1., Regulatory Framework, under subheading "Senate Bill 743" and shown on Figure 4-2 in Chapter 4, Environmental Analysis, potential future development in the TPA surrounding the San Rafael Civic Center SMART Station would be exempt from aesthetics evaluation. Therefore, similar views would continue to be visible between elements of the built environment and over lower-intensity areas and no new impacts to views of the existing scenic resources described in Section 4.1.2.1, Existing Conditions, under subheading "Scenic Resource" would occur under the proposed General Plan 2040.

All potential future development that is subject to discretionary approval would be required to undergo environmental and design review prior to project approval pursuant to SRMC Chapter 14.25, Major Environmental and Design Review Permits, as necessary. SRMC Chapter 14.25 identifies three levels of environmental and design review that occur on varying intensities of development. The environmental and design review process serves to preserve and enhance views from other buildings and public property (see SRMC Section 14.25.010, Specific Purposes), thereby reducing the risk of development blocking public views of significant visual resources. Furthermore, potential future development in the city would be subject to the various planning documents that govern scenic quality in the city, as described in Section 4.1.1, Regulatory Framework. This includes the *San Rafael Design Guidelines*, the *Hillside Design Guidelines Manual, San Rafael Canalfront Conceptual Plan, San Rafael Canalfront Design Guidelines, Downtown Station Area Plan, Civic Center Station Area Plan, Shoreline Park Master Plan,* and the neighborhood-specific design policies meant to enhance and preserve the visual integrity of San Rafael's unique neighborhoods as new development is proposed.

As such, development and design review on the proposal of potential future development would limit the significant adverse impact that potential future development could have on a scenic vista or corridor. Compliance with SRMC Chapter 14.25, along with implementation of the proposed General Plan 2040 goals, policies, and programs, would ensure any impacts to scenic vistas and/or corridors would be *less-than-significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As described in Chapter 3, Project Description, of this Draft EIR, roughly half of the potential future development anticipated to occur throughout 2040 would occur in the Downtown Precise Plan Area, which is primarily built out. Therefore, potential future development would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development where future development would have a lesser impact on scenic vistas.

As previously described in Section 4.1.1.1, Regulatory Framework, under subheading "Senate Bill 743" and shown on Figure 4-4 in Chapter 4, Environmental Analysis, the TPA surrounding the Downtown San Rafael SMART Station is an area where no significant aesthetic impact findings can be made in this environmental analysis or from potential future development pursuant to SB 743. Therefore, this discussion only addresses potential future development from roughly D Street to the western border of

the Downtown Precise Plan Area. This area includes the Downtown Precise Plan's West End Village sub-area and the western portion of the Downtown Core sub-area (see Figure 3-9 in Chapter 3, Project Description). The following discussion describes the potential for impacts to views of scenic resources from potential future development in these two sub-areas.

West End Village Sub-Area

As described in Section 4.1.1.2, Existing Conditions, the maximum heights allowed in the West End Village sub-area and pursuant to General Plan 2020 are up to 42 feet with up to two additional stories (i.e., 20 feet) when height bonuses are granted under certain conditions, for a total maximum height of 62 feet after a potential height bonus is granted. A 30-foot maximum height exists in the central portion of the West End Village sub-area, while the 42-foot height allowance lies above Fourth Street. The 36-foot height allowance is located on both the northern and southern edge of the West End Village sub-area. The 30-foot height limit generally maintains the small-scale character of the West End Village sub-area.

The West End Village sub-area is the only sub-area that is entirely outside of the boundary of the Downtown San Rafael SMART Station TPA. As shown on Figure 3-8 in Chapter 3, Project Description, of this Draft EIR, there are three maximum base heights in the West End Village sub-area: 30 feet, 40 feet, and 50 feet. As with the existing General Plan 2020, height bonuses can be granted under certain conditions which can potentially extend the maximum heights allowed in this sub-area. Figure 3-8 shows two tiers of height bonuses- Tier 1 which allows a height bonus of 10 feet in the northern and central portions of the West End Village sub-area, and Tier 2 which allows a height bonus of 20 feet in the eastern portion of the West End Village sub-area. Therefore, with potential height bonuses, the northern and southern portions of the sub-area have a maximum height allowance of 50 feet, the central portion has a maximum height allowance of 40 feet, and select properties in the eastern portion of the sub-area have a maximum height allowance of 70 feet. The central portion of the West End Village sub-area is currently zoned for Medium-Density Residential (MR 2.5) development and would remain as is and heights would not be modified (maximum of 40 feet after a height bonus is applied). Overall, the maximum height allowance in the West End Village sub-area would increase from 62 feet to 70 feet.

Views that are visible from public locations at street level in the West End Village sub-area include intermittent medium-range views of the Mount Tamalpais ridgeline and San Rafael Hill to the north. As described in Section 4.1.1.2, Existing Conditions, under subheading "Neighborhoods" in the Downtown Precise Plan Area, the areas currently identified as the West End District, the Fifth/Mission District, the Fourth Street District, and the Second/Third District, currently include a mix of buildings that range from 1 to 5 stories in height. Assuming an average of 10 feet per story, existing buildings range from 10 to 50 feet tall. Pedestrian-level views of the Mount Tamalpais ridgeline and San Rafael Hill from public viewing locations are currently obstructed due to the natural topography, existing mature trees, and existing buildings. While some views may exist through vacant or underutilized sites, existing regulations on such sites already permit buildings up to 42 feet in height with up to two stories or roughly 20 feet of additional height when height bonuses are granted. Because maximum building heights are currently permitted up to roughly 62 feet, the potential for new building heights to be permitted up to 70 feet in some portions of the West End Village sub-area would not create a greater obstruction of views of the Mount Tamalpais ridgeline or San Rafael Hill. Furthermore, as discussed in Section 4.1.1.2, Existing Conditions, there are no designated publicly accessible viewing locations for Mount Tamalpais or San Rafael Hill in the West End

Village sub-area. Additionally, as stated above, potential future development would be required to comply with the provisions of the Downtown Code requiring building stepbacks, as well as the proposed General Plan 2040 goals, policies, and programs and with the SRMC Chapter 14.25 provisions, which reduce impacts that potential future development could have on scenic views. Specifically, Section 14.25.050(E)(1), Views, states that major views of the Mount Tamalpais and the hills should be preserved and enhanced from public streets and public vantage points. Therefore, the increase in maximum height allowed in the West End Village sub-area as a result of implementation of the Downtown Precise Plan would be *less than significant*.

Downtown Core Sub-Area

There is a small portion of the Downtown Core sub-area that is not within the Downtown San Rafael SMART Station TPA, located from the east of E Street to slightly east of D Street. Like the West End Village sub-area described above, the maximum heights currently allowed in the area outside of the TPA in the Downtown Core sub-area are up to 42 feet with up to two additional stories (i.e., 20 feet) when height bonuses are granted under certain conditions. Heights up to 36 feet are currently allowed along the northern edge of this area and up to 42 feet in the core all the way to the southern edge. The proposed Downtown Code would allow heights up to 60 feet and up to 80 feet where height bonuses are granted under certain conditions. Therefore, the maximum height allowed in this area with height bonuses would increase from roughly 62 feet to 80 feet. As shown on Figure 3-8, the proposed 80-foot height maximum that is outside of the TPA is on select parcels only.

Views that are visible from public locations in the part of the Downtown Core sub-area that is outside of the TPA include similar intermittent medium-range views of the Mount Tamalpais ridgeline and San Rafael Hill. Like the description of the existing conditions in the West End Village sub-area, existing buildings include a mix of 1- to 5-story (10 to 50 feet tall) buildings and current regulations permit maximum heights of up to 62 feet when height bonuses are granted. Current views of Mount Tamalpais ridgeline and San Rafael Hill are likewise currently obstructed due to the natural topography, existing mature trees, and existing buildings. As potential future development in the West End Village, the potential for new building heights to be permitted up to 65 feet from 62 feet in some portions of this area would not create a greater obstruction of views of the Mount Tamalpais ridgeline or San Rafael Hill. Potential future development would be required to comply with the provisions of the Downtown Code requiring building stepbacks, as well as the proposed General Plan 2040 goals, policies, and programs and with the SRMC Chapter 14.25 provisions, specifically, Section 14.25.050(E)(1), Views, which states that major views of the Mount Tamalpais and the hills should be preserved and enhanced from public streets and public vantage points. Therefore, the increase in maximum height allowed in the part of the Downtown Core sub-area that is outside of the TPA as a result of implementation of the Downtown Precise Plan would be *less than significant*. Significance without Mitigation: Less than significant.

AES-2 Implementation of the proposed project could substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

As described in Section 4.1.1.1, Regulatory Framework, there are no State-designated scenic highways within, or in the vicinity of, the EIR Study Area. Therefore, implementation of the proposed project would not damage existing scenic resources within a state scenic highway and *no impact* would occur.

Significance without Mitigation: No impact.

AES-3 Implementation of the proposed project in an urbanized area could conflict with applicable zoning and other regulations governing scenic quality.

General Plan 2040

As described in Impact Discussion AES-1, no impacts associated with State regulations governing designated State scenic highways would occur.

The proposed General Plan 2040 is the primary planning document for the city of San Rafael. The proposed update is intended to ensure consistency between the General Plan, Zoning Ordinance, and State law. Because the proposed General Plan 2040 is the overriding planning document for the City, and because the proposed General Plan 2040 involves amending the General Plan 2020 and the Zoning Ordinance in the Downtown Precise Plan Area to improve consistency, adoption and implementation of the proposed General Plan would have no impact with respect to being inconsistent with policies or regulations governing scenic quality.

In addition to the goals, policies, and programs listed in Impact Discussion AES-1, the proposed Community Design and Preservation (CDP) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts that development could have on existing visual character. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on scenic quality:

Goal CDP-4: Quality Construction and Design. Encourage quality construction and design that enhances San Rafael's character and creates places of lasting value.

- Policy CDP-4.1: Design Guidelines and Standards. Use design guidelines and standards to strengthen the visual and functional qualities of San Rafael's neighborhoods, districts, and centers. Guidelines and standards should ensure that new construction, additions, and alterations are compatible with the surrounding neighborhoods while still allowing for innovative, affordable design.
  - Program CDP-4.1A: Design Guidelines. Maintain design guidelines for residential, non- residential, and mixed-use construction. Guidelines should define the elements of good design and encourage compatible building patterns, scale, mass, and transitions between areas. Design guidelines should be periodically updated to respond to construction trends, neighborhood feedback, and changes in the way people live, work, and travel.

- Policy CDP-4.3: Creative Architecture and Design. Encourage creative architecture while respecting the context of each site.
  - Program CDP-4.3A: Reinforcing Design Context. Ensure that design guidelines recognize the distinct characteristics of San Rafael neighborhoods. Guidelines should ensure that new development respects the character-defining elements of neighborhoods, including height, scale, materials, and setbacks.

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development under the proposed General Plan 2040 is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. As described in Impact Discussion AES-1, all potential future development that is subject to discretionary approval would be required to undergo environmental and design review prior to project approval, as necessary. The development review process would rely on the goals, policies, and programs in the proposed General Plan 2040, ordinances in the SRMC, and additional regulations governing scenic quality that would be implemented at site-specific locations through the various plans the City has adopted and approved, as listed in Section 4.1.1.1, Regulatory Framework. These include the *San Rafael Design Guidelines*, the *Hillside Design Guidelines Manual, San Rafael Canalfront Conceptual Plan, San Rafael Canalfront Design Guidelines, Downtown Station Area Plan, Civic Center Station Area Plan, Shoreline Park Master Plan,* and the neighborhood-specific design policies meant to enhance and preserve the visual integrity of San Rafael's unique neighborhoods as new development is proposed. While development resulting from implementation of General Plan 2040 could potentially impact scenic quality in the EIR Study Area, such development would be required to adhere to the proposed goals, policies, and programs, with adopted zoning regulations, and with additional adopted plans; therefore, implementation of General Plan 2040 would not conflict with applicable zoning or other regulations governing scenic quality and the impact is *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Same as the discussion for the proposed General Plan 2040, as described in Chapter 3, Project Description, of this Draft EIR, the proposed Downtown Code would amend SRMC Title 14, Zoning, and replace existing zoning regulations for all of the properties in the Downtown Precise Plan Area with the exception of a few parcels in the Latham Street area, which would retain their Multifamily Residential District ([Medium-Density] 2,500 square feet per dwelling unit [MR2.5]) zoning designation, and the existing open space zoning designations. Once adopted, should there be any conflict between the existing Zoning Ordinance and the Downtown Precise Plan, the Downtown Precise Plan shall prevail. Therefore, implementation of the Downtown Precise Plan would not conflict with applicable zoning or other regulations governing scenic quality and the impact is found to be *less than significant.*

Significance without Mitigation: Less than significant.

AES-4 Implementation of the proposed project could create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

General Plan 2040

Nighttime illumination and glare impacts are the effects of a development's exterior lighting upon adjoining uses and areas. Light and glare impacts are determined through a comparison of the existing light sources with the lighting plans or policies incorporated in development proposals.

Currently, the EIR Study Area contains many existing sources of nighttime illumination. These include street and parking area lights, security lighting, and exterior lighting on existing residential, commercial, and institutional buildings. Additional on-site light and glare is caused by surrounding land uses and traffic on US-101 and I-580.

As discussed under Impact Discussion AES-1, the goals, policies, and programs included in the proposed General Plan 2040 were determined not to cause an adverse physical change that could create aesthetic impacts in the EIR Study Area. Individual developments would continue to be subject to General Plan policies and SRMC provisions related to aesthetics, including potential project-level design review requirements.

Implementation of General Plan 2040 would result in potential future development, which would intensify related lighting sources. In addition to new building, security, and lighting for parking areas, buildout of the EIR Study Area would also include lighting that would illuminate future development locations. Because the proposed General Plan 2040 anticipates an increase in development throughout the EIR Study Area, its implementation would result in more development, which would introduce more exterior glazing (i.e., windows and doors) that could result in new sources of glare.

The proposed Community Design and Preservation (CDP) Element, the proposed Conservation and Climate Change (C) Element, and the proposed Community Services and Design Element contain goals, policies, and programs that require local planning and development decisions to consider impacts related to an increase in light and glare. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts as a result of new sources of light and glare:

Goal CDP-4: Quality Construction and Design. Encourage quality construction and design that enhances San Rafael's character and creates places of lasting value.

- Policy CDP-4.11: Lighting. Encourage lighting for safety and security while preventing excessive light spillover and glare. Lighting should complement building and landscape design.
  - Program CDP-4.11A: Lighting Plans. Continue to require lighting plans for projects proposing exterior lighting. The design review process should be used to evaluate lighting for safety, consistency with dark sky objectives, and potential mitigation to reduce negative impacts on nearby properties.

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.19: Light Pollution. Reduce light pollution and other adverse effects associated with night lighting from streets and urban uses.
  - Program C-1.19A: Dark Sky Ordinance. Adopt a dark sky ordinance, including lighting standards and enforcement provisions that reduce light pollution. In the interim, refer to guidelines from the International Dark Sky Association during the review of major projects involving night lighting.
  - Program CSI-4.7D: Street Lighting Program. Continue efforts to improve street lighting, staying mindful of the need to balance financial, public safety, and environmental objectives.

Besides general best management practices that require lighting that is context sensitive in style and intensity required under CALGreen, new developments would also have to comply with the General Plan goals, policies, and programs and SRMC provisions that ensure new land uses do not generate excessive light levels. The City's General Plan goals, policies, and programs also require reducing light and glare spillover from future development to surrounding land uses by buffering or shading new development. Furthermore, future development would occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where existing development already contributes to nighttime illumination or glare. Therefore, the lighting associated with the proposed General Plan 2040 would not substantially increase nighttime light and glare within the EIR Study Area or its surroundings and impacts relating to light and glare would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Same as the potential future development in the remainder of the EIR Study Area, the potential future development in the Downtown Precise Plan Area would also occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where existing development already contributes to nighttime illumination or glare. Potential future development would also be required to comply with the general best management practices that require lighting that is context sensitive in style and intensity pursuant to CALGreen.

Table 1.1.040.A, of the Downtown Precise Plan Downtown Code indicates that SRMC Sections 14.18.170 (Lighting), 14.16.227 (Light and Glare), and 14.19.055 (Illumination Standards) would not be replaced upon adoption of the Downtown Code and the existing regulations on light and glare would remain. Therefore, individual developments that occur as a result of implementation of the Downtown Precise Plan would be subject to General Plan policies and SRMC provisions related to lighting, including potential project-level design review requirements. As such, development that occurs as a result of implementation of the Downtown Precise Plan would not substantially increase nighttime light and glare within the Downtown Precise Plan Area or its surroundings and impacts relating to light and glare would be *less than significant*.

Significance without Mitigation: Less than significant.

AES-5 Implementation of the proposed project could result in a cumulatively considerable impact to aesthetic resources.

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, the cumulative setting includes growth within the EIR Study Area in combination with projected growth in the rest of Marin County and the surrounding region. The cumulative setting for visual impacts includes potential future development under both the proposed General Plan 2040 and the Downtown Precise Plan, combined with effects of development on lands adjacent to the EIR Study Area. Significant impacts, including those associated with scenic resources, visual character, and increased light and glare would generally be site-specific and would not contribute to cumulative impacts after implementation of the General Plan 2040 goals, policies, and programs or the Downtown Precise Plan, or the provisions stated in the SRMC.

Because of the developed nature of the projected areas of growth in San Rafael, future development under General Plan 2040 and the Downtown Precise Plan, in combination with other new development, would not negatively impact the visual character of the city or the surrounding communities. Furthermore, the proposed project would not constitute a significant adverse impact because new development and redevelopment within the EIR Study Area is anticipated to occur as growth occurs.

The proposed General Plan 2040 goals, policies, and programs listed in Impact Discussion AES-1 would not cause adverse physical changes that could create aesthetic impacts in San Rafael. Individual developments would continue to be subject to General Plan goals, policies, and programs and the SRMC provisions related to aesthetics, including potential project-level design review requirements. Additionally, as part of the approval process, potential new development as a result of implementation of the proposed project would be subject to architectural, environmental, and site design review, as applicable, to ensure that the development is aesthetically pleasing and compatible with adjoining land uses. With the development review mechanisms in place, approved future development under the proposed project would not create substantial impacts to visual resources in San Rafael or the surrounding communities. Therefore, the proposed project would not result in a cumulatively considerable impact to aesthetic resources and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to agricultural and forestry resources. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 REGULATORY FRAMEWORK

State Regulations

Farmland Mapping and Monitoring Program

The California Natural Resources Agency is charged with restoring, protecting, and maintaining the State's natural, cultural, and historical resources. Within it, the State Department of Conservation provides technical services and information to promote informed land use decisions and sound management of the State's natural resources. The Department of Conservation manages the Farmland Mapping and Monitoring Program, which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. Every two years, the Farmland Mapping and Monitoring Program publishes a field report for each county in the state. The most recent field report for Marin County was published in 2016. The Marin County Important Farmland 2016 categorizes land by agricultural production potential, according to the following classifications:[1]

- Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance is similar to Prime Farmland, but with minor shortcomings, such as steeper slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been farmed at some time during the four years prior to the mapping date.
- Farmland of Local Importance includes land that is not irrigated but is cultivated or has the potential for cultivation.
- Grazing Land is the land on which the existing vegetation is suited to the grazing of livestock.

[1] State of California Department of Conservation, Farmland Mapping and Monitoring Program, Marin County, https://www.conservation.ca.gov/dlrp/fmmp/Pages/Marin.aspx, accessed on August 15, 2019.

- Urban and Built-Up Land is occupied by structures with a building density of at least one unit per 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential structures, industrial structures, commercial structures, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment structures, and water control structures.
- Other Land is land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities strip mines; borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as "other" land.
- Water is used to describe perennial water bodies with an extent of at least 40 acres.

Williamson Act

The California Land Conservation Act of 1965, better known as the Williamson Act, conserves agricultural and open space lands through property tax incentives and voluntary restrictive land use contracts administered by local governments under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum ten-year rolling term contracts, with counties and cities also acting voluntarily. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value. Nonrenewal status is applied to Williamson Act contracts that are within the nine-year termination process, during which the annual tax assessment for the property gradually increases.

Public Resources Code Section 12220(g)

This section of the Public Resources Code defines "forest land" for the purposes of CEQA. According to the Public Resources Code Section 12220(g), "forest land" is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water-quality, recreation, and other public benefits.

Government Code Section 51104

This section of the Government Codes defines "Timber," "Timberland," and "Timberland Production Zone" for the purposes of CEQA and "Timberland Preserve Zone," which may be used in city and county general plans.

- Timber means trees of any species maintained for eventual harvest for forest production purposes, whether planted or of natural growth, standing or down, on privately or publicly owned land, including Christmas trees, but does not mean nursery stock.
- Timberland means privately owned land, or land acquired for State forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.

- Timberland Production Zone or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "Timberland Preserve Zone" means "Timberland Production Zone."

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan does not include goals, policies, or programs relevant to agriculture or forestry resources as there are no such resources in the City of San Rafael Planning Area.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) does not include specific regulations that pertain to minimizing impacts to agricultural or forestry resources. There are no zoning designations specific to either agriculture or forestry lands in the EIR Study Area. SRMC Section 14.13.030, Land Use Regulations, includes agriculture and cultivation of crops as a conditional use in the Wetland Overlay zone (-WO). However, the -WO zone does not outline specific provisions for the use of wetlands as agriculture and crop cultivation land. These uses are, however, included in the definition of the Open Space zone in SRMC Section 19.10.020 as follows: any parcel or area of land or water which is essentially unimproved natural landscape area, such as rivers, streams, watershed and shoreline lands, forest and agricultural lands, ridges, hilltops, canyons and other scenic areas, acquired and/or leased by the city for open space purposes.

Marin Countywide Plan

The 2017 *Marin Countywide Plan* is a comprehensive long-range guide for land use in the unincorporated portions of the county, including land outside of San Rafael's city limit but within the EIR Study Area. The *Marin Countywide Plan* includes the following agricultural (AG) policies identified in the Natural Systems and Agriculture Element:

- AG-1.1 Limit Residential Use. Maintain agricultural production as the principal use on agricultural lands by limiting residential development to that which is reasonably related to agriculture.
- AG-1.2 Encourage Contractual Protection. Facilitate agricultural conservation easements, land and transfer of development rights between willing owners when used to preserve agricultural lands and resources.
- AG-1.4 Limit Non-Agricultural Zoning. Apply non-agricultural zoning only in areas where conflict with agricultural uses will be minimized, and ensure that development standards preserve and enhance nearby agricultural uses.
- AG-1.5 Restrict Subdivision of Agricultural Lands Within the Coastal, Inland Rural, and Bayland Corridors. Require that the subdivision of agricultural lands shall only be allowed upon demonstration that long-term productivity on each parcel created would be enhanced as a result of subdivision. In the City-Centered Corridor, subdivision on agricultural lands shall only be allowed upon demonstration that the overall agricultural productivity of the subdivided parcels would not be reduced as a result of the subdivision. In considering subdivisions in all corridors, the County may

approve fewer parcels than the maximum number of parcels allowed by applicable Countywide Plan land use designation and by the Development Code, based on site characteristics such as topography, soil, water availability, and the capacity to sustain viable agricultural operations.

- AG-1.6 Limit Non-Agricultural Development. Limit non-agricultural development in the Agricultural Production Zone to allowed residential and accessory uses ancillary to compatible with agricultural production. Require dwellings and other non-agricultural development to be limited in size and grouped together in building envelopes covering no more than 5 percent of the property or as determined through a site-specific analysis of agricultural and environmental constraints and resources, with the remainder preserved for agricultural production. Residential and non-agricultural development on very large parcels may be limited to less than five percent of the land area.
- AG-1.7 Limit Ancillary Non-Agricultural Land Uses. Require non-agricultural lands to be ancillary to and compatible with agricultural land uses, agricultural production, and the rural character of the area, and to enhance the economic viability of agricultural operations.
- AG-1.8 Maintain the Agricultural Land Base. Encourage private and public owners of lands that have traditionally been used for agriculture to keep land in agricultural use by continuing existing agricultural uses, developing compatible new agricultural uses, and/or leasing lands to agricultural operators.
- AG-1.9 Continue Agricultural Uses on Federal Land. Encourage continuation of agricultural operations and uses in the pastoral zones of the Point Reyes National Seashore and the Golden Gate National Recreation Area through long-term tenure agreements (leases) with agricultural operators.
- AG-1.10 Protect Productive Agricultural Soils. Discourage or prohibit non-agricultural buildings, impermeable surfaces, or other non-agricultural uses on soils classified by the Natural Resources Conservation Service as Prime Farmland soils or Farmland soils of Statewide Importance.
- AG-1.11 Preserve Rangeland Forage. Discourage the conversion of rangeland to non-agricultural uses.
- AG-1.12 Support Sustainable Water Supplies. Explore opportunities to provide sustainable water supplies, such as water conservation, collection, treatment, and reuse, to support small-scale agricultural diversification in a manner that does not adversely affect aquatic or other resources.
- AG-1.13 Protect Water Quality to Keep Mariculture Viable. Protect and enhance the quality of waters used for mariculture through cooperation with other stakeholders, and outreach and education.

4.2.1.2 EXISTING CONDITIONS

The EIR Study Area includes lands identified as Farmland of Local Importance and Grazing Land as defined by the California Department of Conservation (CDC). Farmland of Local Importance includes land which is not irrigated, but is cultivated or has the potential for cultivation. The CDC has designated approximately 2,000 acres of land as agricultural in the EIR Study Area, specifically used as grazing. Grazing Land is land defined by the CDC as having vegetation suitable to the grazing of livestock. This agricultural land is in the EIR Study Area north of the San Rafael city limits and west of US-101 along Lucas Valley Road, as well as on privately owned land in the China Camp State Park area in the eastern portion of the EIR Study Area. Grazing Land is protected through the Lucas Valley Preserve, which is operated by the Marin County Parks District[2] and the Lucas Valley Homeowners Association.[3] The Downtown Precise Plan Area is classified by

[2] Lucas Valley Preserve, Marin County Parks, 2019, https://www.marincountyparks.org/parkspreserves/preserves/lucas-valley, accessed on August 15, 2019.

the California Department of Conservation as Urban and Built-Up land and therefore there are no lands designated as agriculture or agriculture-related use. There are no lands under a Williamson Contract agricultural easement,[4] nor are there any forestlands designated for timber production or preservation in the EIR Study Area.[5]

4.2.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant agriculture and forestry resources impacts if it would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
3. Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
4. Result in the loss of forest land or conversion of forest land to non-forest use.
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.
6. Result in significant cumulative impacts to agricultural and forestry resources.

4.2.3 IMPACT DISCUSSION

AGF-1	**Implementation of the proposed project could convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.**

General Plan 2040

There are no lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the EIR Study Area. Per the Marin County Important Farmland Map, land within the EIR Study Area is primarily classified as Urban and Built-Up Land, with some grazing land to the northwest of

[3] Lucas Valley Homeowners Association, Covenants, Conditions, and Restrictions (CC&R), Common Area 13, 2002, http://www.lvha.org/, accessed on August 15, 2019.

[4] California Department of Conservation, Division of Land Resource Protection, 2016, Marin County Williamson Act FY 2015/2016.

[5] California Department of Conservation, Division of Land Resource Protection, 2016, Marin County Williamson Act FY 2015/2016.

and some Farmland of Local Importance to the northeast and southeast.[6] Additionally, no land use changes are proposed that would result in conversion of land used for grazing or land designated Farmland of Local Importance within the vicinity of the EIR Study Area. Further, the proposed Land Use (LU) Element includes Policy LU-1.5, Development Beyond the Urban Service Area, would retain areas outside of San Rafael's Urban Service Area, but within the Planning Area, as agricultural or open space uses. As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development in the EIR Study Area would occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. Therefore, implementation of General Plan 2040 would have *no impact* on conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses.

Significance without Mitigation: No impact.

Downtown Precise Plan

Like potential future development in the remainder of the EIR Study Area, potential future development in the Downtown Precise Plan Area would occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. Therefore, implementation of the Downtown Precise Plan would have *no impact* regarding the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses.

Significance without Mitigation: No impact.

AGF-2 Implementation of the proposed project could conflict with existing zoning for agricultural use or with a Williamson Act contract.

General Plan 2040

Title 19 of the SRMC defines the Open Space designation as an open space area, such as a parcel or area of land, which can include forest and agricultural lands. Additionally, the Wetland Overlay Zone includes agriculture and cultivation of crops as a conditional use. However, there is no zoning designation within the SRMC specific to agriculture or that governs use of lands solely for agricultural purposes. Implementation of the proposed project would not include changing of zoning on any lands designated as Open Space or which have a Wetland Overlay. Furthermore, lands within the county of Marin that are protected under a Williamson Act contract are located outside the EIR Study Area. Therefore, implementation of General Plan 2040 would have *no impact* to lands zoned for agricultural use or under a Williamson Act contract.

Significance without Mitigation: No impact.

[6] State of California, 2016, Farmland Mapping and Monitoring Program, Marin County Important Farmland.

Downtown Precise Plan

There are no lands in or adjacent to the Downtown Precise Plan Area that are zoned for agricultural use or protected under a Williamson Act contract. Therefore, same as potential future development in the remainder of the EIR Study Area, potential future development in the Downtown Precise Plan Area would have a *no impact* to lands zoned for agricultural use or under a Williamson Act contract.

Significance without Mitigation: No impact.

AGF-3	**Implementation of the proposed project could conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).**

General Plan 2040

There are no lands within or adjacent to the EIR Study Area designated as forestland or timberland, nor are there any lands zoned timberland production. There are lands in the EIR Study Area that contain Oak Woodland and Oak/Bay Woodland in China Camp State Park, as well as on lands to the west and adjacent to the EIR Study Area. However, potential future development from implementation of General Plan 2040 would occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Implementation of General Plan 2040 would not include any land use changes to any naturally preserved lands within or adjacent to the EIR Study Area. Therefore, implementation of General Plan 2040 would have *no impact* on forestland, timberland, or land zoned for timberland production.

Significance without Mitigation: No impact.

Downtown Precise Plan

The Downtown Precise Plan Area is within the same setting described above, therefore, like the remainder of the EIR Study Area, potential future development in the Downtown Precise Plan Area would have *no impact* on forestland, timberland, or land zoned timberland production.

Significance without Mitigation: No impact.

AGF-4	**Implementation of the proposed project could result in the loss of forest land or conversion of forest land to non-forest use.**

General Plan 2040

As stated in Impact Discussion AGF-3, there are no lands within or adjacent to the EIR Study Area designated as forestland. Further, potential future development would occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential serving development and would not result in the loss of forest land or conversion of forest land to non-forest uses. Therefore, no loss or conversion of forest land to non-forest uses would occur, and implementation of the General Plan 2040 would have *no impact.*

Significance without Mitigation: No impact.

Downtown Precise Plan

As stated above, there are no lands within or adjacent to the EIR Study Area designated as forestland, thus same as potential future development in the remainder of the EIR Study Area, potential future development in the Downtown Precise Plan Area would not result in the loss of forestland, and *no impact* would occur.

Significance without Mitigation: No impact.

AGF-5	**Implementation of the proposed project could involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.**

General Plan 2040

As discussed in Chapter 3, Project Description, of this Draft EIR, proposed land use changes are concentrated in urbanized locations of the EIR Study Area and other developed sites. Implementation of General Plan 2040 would not result in converting any land that is currently open space, farmland, or forestland to an urban use. Therefore, implementation of General Plan 2040 would have a *no impact* regarding the conversion of farmland or timberland of any type to a nonagricultural or non-forestry use.

Significance without Mitigation: No impact.

Downtown Precise Plan

Same as land use changes in the remainder of the EIR Study Area under General Plan 2040, the proposed land use changes in the Downtown Precise Plan Area are concentrated in urbanized locations and other developed sites. Implementation of the Downtown Precise Plan would not result in converting any land that is currently open space, farmland, or forestland to an urban use. Therefore, implementation of the Downtown Precise Plan would have a *no impact* to agricultural and forestry resources.

Significance without Mitigation: No impact.

AGF-6 Implementation of the proposed project could result in a cumulatively considerable impact to agricultural or forestry resources.

As discussed in Chapter 4, Environmental Analysis of this Draft EIR, the cumulative setting includes growth within the EIR Study Area in combination with projected growth in the rest of Marin County and the surrounding region, as forecast by the *Plan Bay Area* 2040. The geographic scope of the cumulative analysis for agricultural and forestry resources considers the surrounding incorporated and unincorporated lands, as well as the state.

Cumulative impacts would occur when a series of actions leads to a loss of agricultural or forestry resources that are of statewide importance, which occurs when agricultural or forest lands are converted to nonagricultural and non-forest uses. This typically occurs in newly urbanized areas where development encroaches on agricultural or forested areas through general plan land use and zoning amendments, leading to the long-term conversion of agricultural or forested lands.

According to the California Department of Food and Agriculture, if current development trends continue, 1.3 million acres of California agricultural land, including 670,000 acres of prime, unique and statewide important farmland, will be developed by 2050.[7] The California Department of Forestry and Fire Protection (CAL FIRE) enforces the laws that regulate logging on privately owned lands in California. The Forest Practice Act was enacted in 1973 to ensure that logging is done in a manner that will preserve and protect our fish, wildlife, forests and streams. According to CAL FIRE, there has been a major decline in timber harvesting that has resulted in a 72 percent decrease in volume since 1955 and generally, the volume of timber harvested has declined steadily from a high in 1988.[8]

As discussed in Impact Discussion AGF-1 through AGF-5 above, implementation of the proposed project would not result in the conversion of land from agricultural or forestry resources to land designated for development. Future development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, and does not include any lands with uses designated for agricultural or forestry purposes. Therefore, the proposed project would not result in a cumulatively considerable impact to agricultural and forestry resources and no cumulative impact would occur.

Significance without Mitigation: No impact.

[7] California Department of Food and Agriculture, https://www.cdfa.ca.gov/agvision/docs/Agricultural_Loss_and_Conservation.pdf.

[8] California Department of Forestry and Fire Protection, Annual Report 2019, page 16.

AGRICULTURE AND FORESTRY RESOURCES

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4.3 AIR QUALITY

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to air quality. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project. Greenhouse gas (GHG) emissions impacts are addressed in Chapter 4.8, Greenhouse Gas Emissions, of this Draft Environmental Impact Report (EIR).

The evaluation in this chapter is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. In this chapter "emissions" refers to the actual quantity of pollutant, measured in pounds per day (lbs/day) and "concentrations" refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).

The analysis in this chapter is based on buildout of the proposed General Plan 2040, which includes the buildout of the Downtown Precise Plan Area. The proposed buildout is modeled using the California Air Resources Board's (CARB) 2017 Emissions Factor Model (EMFAC2017); the Off-Road Emissions Factor Model (OFFROAD2017); natural gas use provided by Pacific Gas and Electric (PG&E) compiled for the City's recent GHG emissions inventory; and trip generation and vehicle miles traveled (VMT) provided by Fehr & Peers. Trip generation is available as Appendix I, Transportation Data, and VMT calculation are in Chapter 4.16, Transportation, of this Draft EIR. The criteria air pollutant emissions modeling is included in Appendix D, Air Quality and Greenhouse Gas Emissions Data, of this Draft EIR.

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the federal Clean Air Act ("National") and California Clean Air Act, respectively. The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from a specific source; secondary air pollutants occur through chemical reactions. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Each of the primary and secondary criteria air pollutants and its known health effects are described next, and Table 4.3-1 summarizes the potential health effects associated with the criteria air pollutants.

- **Carbon Monoxide (CO)** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.[1]
- **Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the BAAQMD has established a significance threshold for this pollutant.
- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[5] NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm).
- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[2]
- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities,

[1] Bay Area Air Quality Management District, 2017, Revised. *California Environmental Quality Act Air Quality Guidelines*.
[2] Bay Area Air Quality Management District, 2017, Revised. *California Environmental Quality Act Air Quality Guidelines*.

and motor vehicles. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen by the Air Resources Board.

Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The United States Environmental Protection Agency (USEPA) scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.[7]

- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[3]
- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Because emissions of lead are found only in projects that are permitted by the BAAQMD, lead is not an air quality of concern for the proposed project.

[3] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on March 12, 2019.

TABLE 4.3-1 CRITERIA AIR POLLUTANT HEALTH EFFECTS SUMMARY

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	▪ Chest pain in heart patients ▪ Headaches, nausea ▪ Reduced mental alertness ▪ Death at very high levels	▪ Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	▪ Cough, chest tightness ▪ Difficulty taking a deep breath ▪ Worsened asthma symptoms ▪ Lung inflammation	▪ Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	▪ Increased response to allergens ▪ Aggravation of respiratory illness	▪ Same as carbon monoxide sources
Particulate Matter (PM_{10} and $PM_{2.5}$)	▪ Hospitalizations for worsened heart diseases ▪ Emergency room visits for asthma ▪ Premature death	▪ Cars and trucks (particularly diesels) ▪ Fireplaces and woodstoves ▪ Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	▪ Aggravation of respiratory disease (e.g., asthma and emphysema) ▪ Reduced lung function	▪ Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	▪ Behavioral and learning disabilities in children ▪ Nervous system impairment	▪ Contaminated soil

Sources: California Air Resources Board. 2009, December 2. ARB Fact Sheet: Air Pollution and Health. Accessed on February 21, 2019. https://www.arb.ca.gov/research/health/fs/fs1/fs1.htm; South Coast Air Quality Management District. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf

Toxic Air Contaminants

The California Health and Safety Code defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 US Code Section 7412[b]) is a toxic air contaminant. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems.[4] At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[5] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control measures. The majority of the estimated health risks from TACs can be attributed to relatively few compounds. The most important compounds are particulate matter from diesel-fueled engines.

[4] United States Environmental Protection Agency. 2019. Health and Environmental Effects of Hazardous Air Pollutants. https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants

[5] California Air Resources Board, 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

In 1998, CARB identified Diesel Particulate Matter (DPM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. According to the BAAQMD, PM emitted from diesel engines contributes to more than 85 percent of the cancer risk in the SFBAAB. Cancer risk from TACs is highest near major DPM sources.[6]

4.3.1.2 REGULATORY FRAMEWORK

Federal, State, and local air districts have passed laws and regulations intended to control and enhance air quality. Land use in the city is subject to the rules and regulations imposed by the USEPA, CARB, the California Environmental Protection Agency (CalEPA), and BAAQMD. The regulatory framework that is potentially applicable to the proposed project is also summarized below.

Federal and State Regulations

AAQS have been adopted at federal and state levels for criteria air pollutants. In addition, both the federal and State governments regulate the release of TACs. San Rafael is in the SFBAAB and is subject to the rules and regulations imposed by the BAAQMD, the national AAQS adopted by the USEPA, and the California AAQS adopted by CARB. Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the United States Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

Both California and the federal government have established health based AAQS for seven air pollutants, which are shown in Table 4.3-2. These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are

[6] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004-2013), April.

observed. California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:[7]

- Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards
- Heavy-Duty (Tractor-Trailer) GHG Regulation.
- SB 1078 and SB 107: Renewables Portfolio Standards.
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

TABLE 4.3-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
Ozone (O_3) [c]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$) [d]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	

[7] See Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR for a description of regulations that reduce emissions including Assembly Bill 32, also known as the Global Warming Solutions Act, Senate Bill 375, also known as the Sustainable Communities and Climate Protection Act. See Chapter 4.16, Transportation, for a description on Senate Bill 743, and how it relates to reducing vehicle miles traveled or "VMT".

TABLE 4.3-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
	Calendar Quarter	*	1.5 µg/m^3	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4) [e]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter; *Standard has not been established for this pollutant/duration by this entity.
[a] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
[b] National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
[c] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
[d] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
[e] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
Source: California Air Resources Board, 2017, Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed on October 24, 2018.

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and reduce exposure to these contaminants to protect public health. A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code Section 7412[b]) is a toxic air contaminant. Under State law, CalEPA, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). AB 1807 sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the airborne toxics control measure must reduce exposure to below that threshold. If there is no safe threshold, the airborne toxics control measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities[8] are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Regional Regulations

Bay Area Air Quality Management District

The BAAQMD is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the SFBAAB. Air quality conditions in the SFBAAB have improved significantly since the

[8] Each district is responsible for establishing the prioritization score threshold at which facilities are required to prepare a health risk assessment. In the Bay Area, facilities that generate a cancer risk of greater or equal to 10 in a million and a non-cancer chronic or acute risk greater or equal to 10 in a million are high priority facilities. Types of facilities that have the potential to generate risks of this level include refineries, other heavy industrial manufacturing/industrial processes, and fueling stations.

BAAQMD was created in 1955.[9] The BAAQMD prepares air quality management plans (AQMP) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the National O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

2017 Clean Air Plan

The BAAQMD adopted the 2017 *Clean Air Plan, Spare the Air, Cool the Climate* (2017 Clean Air Plan) on April 19, 2017, making it the most recent adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues to provide the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020. Furthermore the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following: [10]

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A multipollutant control strategy was developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. The control strategy includes these key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel and high-carbon goods and services.

[9] Bay Area Air Quality Management District, 2010 (Revised 2017), Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[10] Bay Area Air Quality Management District, 2017, April 19, Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed on March 18, 2019.

- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Community Air Risk Evaluation Program

The BAAQMD Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area, primarily DPM. The last update to this program was conducted in 2014. Based on findings of the 2014 report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant cancer risks: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk–weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.[11]

The major contributor to acute and chronic noncancer health effects in the SFBAAB is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[12] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.[13]

Assembly Bill 617 Community Action Plans

AB 617 was signed into law in July 2017 to develop a new community-focused program to more effectively reduce exposure to air pollution and preserve public health in environmental justice communities. AB 617 directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution by monitoring emissions and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission-reduction planning. The State approved communities for year 1 of the program as well as

[11] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013), http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx, accessed on March 12, 2019.

[12] Bay Area Air Quality Management District, 2006, Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area, https://www.baaqmd.gov/~/media/files/planning-and-research/care-program/care_p1_findings_recommendations_v2.pdf, accessed on March 12, 2019.

[13] Bay Area Air Quality Management District, 2010, Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx, accessed on March 12, 2019.

communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation areas as well as areas with large sources of air pollution (refineries, seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[14]

- Year 1 Communities:
  - West Oakland. The West Oakland community was selected for BAAQMD's first Community Action Plan. In 2017, cancer risk from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy trucks and cars, port and rail sources, large industries, and, to a lesser extent, other sources such as residential sources (i.e., wood burning). The majority (over 90 percent) of cancer risk is from $DPM_{2.5}$.[15]
  - Richmond. Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historical and current monitoring studies, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact.[16]
- Year 2 to 5 Communities: East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2 to 5 of the AB 617 program.[17]

As identified above, AB 617 is not directly applicable to San Rafael since BAAQMD has not currently designated the City of San Rafael or communities within the City as disproportionally impacted by air pollution in either the Year 1 or Year 2-to-5 communities.

Air District Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within the city. The BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under the BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business

[14] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[15] BAAQMD. 2019, October 2. West Oakland Community Action Plan. https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan

[16] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[17] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

or property." Under the BAAQMD 's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other Air District Regulations

In addition to the plans and programs described above, the BAAQMD administers several specific regulations on various sources of pollutant emissions that would apply to potential future development constructed over the buildout of the proposed General Plan 2040 and Downtown Precise Plan, including:

- Regulation 2, Rule 2, New Source Review
- Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- Regulation 6, Rule 1, General Requirements
- Regulation 6, Rule 2, Commercial Cooking Equipment
- Regulation 8, Rule 3, Architectural Coatings
- Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- Regulation 8, Rule 7, Gasoline Dispensing Facilities
- Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)
- Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities

Transportation Authority of Marin

The Transportation Authority of Marin (TAM) is the congestion management agency for Marin County. TAM is tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision making and air quality plans. TAM's latest congestion management program (CMP) is the Marin County Congestion Management Program 2017 Update. TAM's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, TAM's updated CMP includes multimodal performance standards and trip reduction and transportation demand management strategies consistent with the goal of reducing regional VMT in accordance with Senate Bill 375 (SB 375). Strategies identified in the 2013 CMP for Marin County, where local jurisdictions are responsible agencies, include:

- Designated Roadway System. Establish and maintain the designated CMP roadway system that allows performance monitoring in terms of established level-of-service LOS standards.
- Roadway System Level of Service. Establish level-of-service standards using the Transportation Research Board's Highway Capacity Manual or an accepted alternative.
- System Performance. Establish performance measures to evaluate current and future multimodal system performance for the movement of people and goods.
- Travel Demand Management. Promote alternative transportation methods to reduce traffic congestion, increase use of park-and-ride lots, improvements in the balance between jobs and housing, and other strategies for reducing vehicle trips, including flexible work hours, telecommuting, and parking management programs.

- Land Use Analysis. Analyze the impacts of land use decisions made by local jurisdictions on the regional transportation system (both highways and transit).
- Travel Demand Model. Develop a uniform database on traffic impacts for use in a countywide travel demand.
- Capital Improvement Program. Include a seven-year Capital Improvement Program to maintain or improve the performance of the multimodal system for the movement of people and goods and to mitigate regional transportation impacts identified through the Land Use Analysis Program.
- Deficiency Plan Procedures. Determine every two years whether Marin County and cities and towns within the county conform to the requirements of the CMP based on information obtained through monitoring.

Plan Bay Area 2040

As described in Chapter 4, Environmental Evaluation, of this Draft EIR, ABAG and MTC are regional planning agencies tasked with coordinating land use and transportation planning in the Bay Area, including development of the Bay Area's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), known as *Plan Bay Area*. The 2040 update to *Plan Bay Area* was adopted jointly by the ABAG and MTC on July 26, 2017. *Plan Bay Area* incorporates the region's SCS, which is required pursuant to SB 375 to reduce per capita VMT and associated GHG emissions. As part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas within existing communities. TPAs are half-mile buffers surrounding major transit stops or terminals. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated within PDAs. As shown on Figure 4-1, in Chapter 4.0, Environmental Evaluation, the EIR Study Area has three PDAs and three TPAs.[18]

Local Regulations[19]

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to the protection of air quality are primarily in the Air and Water Quality Element, which cross-references the Circulation Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of goal, policy, and program changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness

[18] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, Plan Bay Area 2040 Final, http://2040.planbayarea.org/, accessed on March 12, 2019.

[19] The current San Rafael Climate Change Action Plan (2019 CCAP) was approved and adopted by the City on May 20, 2019. While the 2019 CCAP includes measures that reduce emissions, the 2019 CCPC is not directly applicable to criteria air pollutants and air toxics (i.e., the focus of the air quality analysis). Please see Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, for a discussion on how the 2019 CCAP relates to reduced emissions.

and potential to result in an adverse physical impact later in this chapter under Section 4.3.3, impact discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives to minimize adverse impacts to air quality. The SRMC is organized by title, chapter, and section. Most provisions related to air quality impacts are included in Title 5, Traffic Regulations, Title 9, Health and Sanitation, Title 10, Business, Professions, Occupations, Industries, and Trades, Title 12, Building Regulations, and Title 14, Zoning, as follows

- Chapter 5.81, Trip Reduction and Travel Demand Requirements. Requires the City to implement a trip reduction and travel demand ordinance (Ord. 1657 Section 1 (part), 1994).
- Chapter 9.19, Refuse and Recycling Materials Collection and Disposal. The burning of solid waste is prohibited without a permit from the City and government body or agency responsible for fire protection, air pollution, or public health and safety.
- Chapter 10.92, Prohibits Polystyrene Foam Disposal Food Packaging. Retail food vendors are prohibited from providing prepared food or take-out food to customers in, on, or with disposable food packaging that includes polystyrene foam.
- Chapter 12.345, Wood-Burning Appliances. Prohibits non-EPA Phase II-certified wood heaters or wood-burning fireplaces to be installed in new construction, additions, or remodels of any size. The conversion of a gas fireplace to a wood-burning fireplace is prohibited.
- Chapter 14.16, Site and Use Regulations. Section 14.16.305, Small Wind Energy Systems, establishes standards to regulate the design and placement of small wind energy systems on public and private property to minimize the potential safety and aesthetic impacts on neighboring property owners and the community. Section 14.16.307, Solar Installations, identifies requirements for solar installations on developed properties (e.g., rooftop solar) and solar energy production facilities for off-site power distribution.
- Chapter 14.18, Parking Standards. Section 14.18.45, Designated Parking for Clean Air Vehicles, requires parking spaces serving new nonresidential buildings be designated for low-emitting, fuel-efficient, and carpool/van pool vehicles, as defined by Section 5.102 of CALGreen. Section 14.18.090, Bicycle Parking, requires bicycle parking be provided for new nonresidential buildings and major renovations of nonresidential buildings that have 30 or more parking spaces, and for all public/quasi-public uses.

4.3.1.3 EXISTING CONDITIONS

San Francisco Bay Area Air Basin Conditions

The SFBAAB comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County.

Air quality in the SFBAAB is determined by such natural factors as topography, meteorology, and climate in addition to the presence of existing air pollution sources and ambient conditions, as described below.[20]:

- Meteorology: The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, that distort normal wind flow patterns. The Coast Range[21] splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allows air to flow in and out of the Bay Area and the Central Valley. The climate is dominated by the strength and location of a semipermanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.
- Wind Patterns: During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais in Marin County, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San José when it meets the East Bay hills. Wind speeds may be strong locally in areas where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon, and the sea breeze deepens and increases in velocity while spreading inland. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. In the winter, stormy conditions with moderate to strong winds are frequent, as are periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing because of little or no wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.
- Wind Circulation: Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak—namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

[20] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines.
[21] The Coast Ranges traverses California's west coast from Humboldt County to Santa Barbara County.

- **Inversions:** An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly. Elevation inversions[22] are more common in the summer and fall, and radiation inversions[23] are more common during the winter. The highest air pollutant concentrations generally occur during inversions.
- **Temperature:** Summer temperatures are determined in large part by the effect of differential heating between land and water surfaces. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed. During the day the temperature contrast between the coast and inland areas is small, and at night it is large.
- **Precipitation:** The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants disperse more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

Attainment Status of the SFBAAB

The AQMP provides the framework for air quality basins to achieve attainment of the State and federal AAQS through the State Implementation Plan. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme.

- **Unclassified.** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment.** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment.** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- **Nonattainment/Transitional.** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

[22] When the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley.

[23] During the night, the ground cools off, radiating the heat to the sky.

The attainment status for the SFBAAB is shown in Table 4.3-3. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

TABLE 4.3-3 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment (marginal) [a]
PM_{10} – 24-hour	Nonattainment	Unclassified/ Attainment [b]
$PM_{2.5}$ – 24-hour and Annual	Nonattainment	Nonattainment
CO – 8-hour and 1-hour	Attainment	Attainment
NO_2 – 1-hour	Attainment	Unclassified
SO_2 – 24-hour and 1-hour	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. Severity classification current as of February 13, 2017.
b. In December 2014, US EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ National AAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.
Source: California Air Resources Board, 2017, Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed on October 24, 2018; Bay Area Air Quality Management District. 2017. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status#thirteen, accessed on October 22, 2018.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the city have been documented and measured by the BAAQMD. In 2019 BAAQMD had 31 operational monitoring stations around the Bay Area.[24] The nearest station is the San Rafael Monitoring Station at 534 Fourth Street. Data from this station is summarized in Table 4.3-4. The data show regular violations of the State and federal PM_{10} standards and federal $PM_{2.5}$ standard. Based on BAAQMD's Planning Healthy Places, the City of San Rafael is within a 24-hour $PM_{2.5}$ exceedance area.[25]

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Disadvantaged communities identified by CalEnviroScreen 3.0 (i.e., environmental justice communities) may be disproportionately affected by

[24] BAAQMD. 2019. July 1. 2109 Air Monitoring Network Plan. https://www.baaqmd.gov/~/media/files/technical-services/2019_network_plan-pdf.pdf?la=en

[25] BAAQMD. 2016, May 20. Planning Health Places, A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning. https://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en

and vulnerable to poor air quality.[26] Figure 4.3-1 shows the communities that may be disproportionately affected by poor air quality in the city. The CalEnviroScreen cumulative score is a cumulative measure of overall environmental justice burden based on 24 indicators, including pollution, social, and health indicators, four of which are specifically having to do with air quality or air pollution.

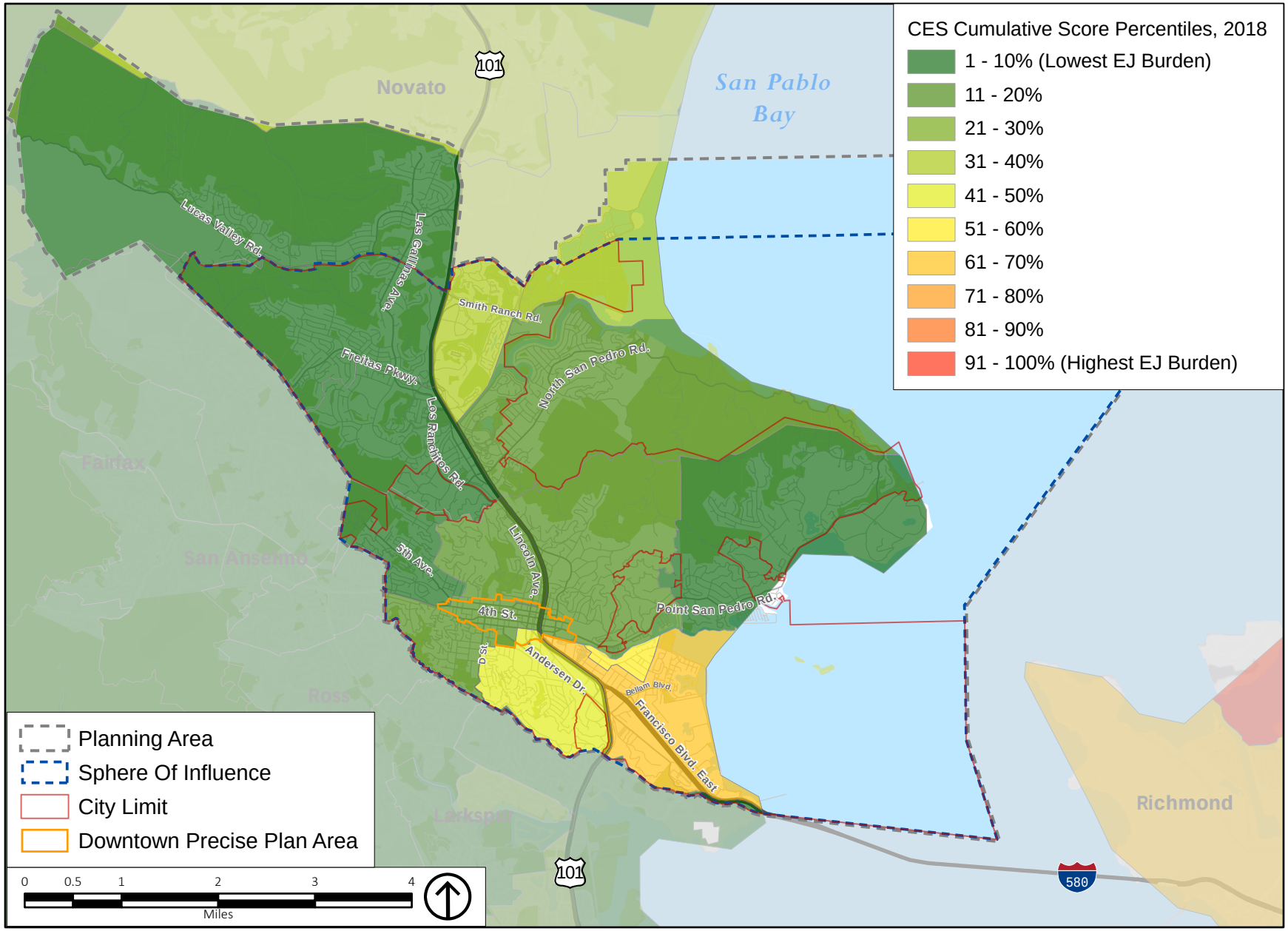
Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

TABLE 4.3-4 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
Pollutant/Standard	**2014**	**2015**	**2016**	**2017**	**2018**
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	0	0	0	0	0
State 8-hour ≥ 0.07 ppm	0	0	0	0	0
Federal 8-Hour > 0.075 ppm	0	0	0	0	0
Maximum 1-Hour Conc. (ppm)	0.088	0.081	0.088	0.088	0.072
Maximum 8-Hour Conc. (ppm)	0.068	0.070	0.067	0.063	0.053
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0624	0.0440	0.0455	0.0534	0.0553
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m^3	0	0	0	2	2
Federal 24-Hour > 150 µg/m^3	0	0	0	0	1
Maximum 24-Hour Conc. (µg/ m^3)	39.0	42.2	26.6	91.5	160.0
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3	1	2	0	8	13
Maximum 24-Hour Conc. (µg/m^3)	38.1	36.3	15.6	74.7	167.6

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter. Data from the San Rafael Monitoring Station.
Source: California Air Resources Board, 2020, Air Pollution Data Monitoring Cards (2014, 2015, 2016, 2017, and 2018), http://www.arb.ca.gov/adam/index.html, accessed on March 1, 2020.

[26] Under Senate Bill 535, disadvantaged communities are defined as the top 25% scoring areas from CalEnviroScreen along with other areas with high amounts of pollution and low populations.



Source: CalEnviroScreen, 2018; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.3-1
CalEnviroScreen 3.0 Cumulative Score by Percentile

Placement of New Sensitive Receptors

Because placement of sensitive land uses falls outside CARB's jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

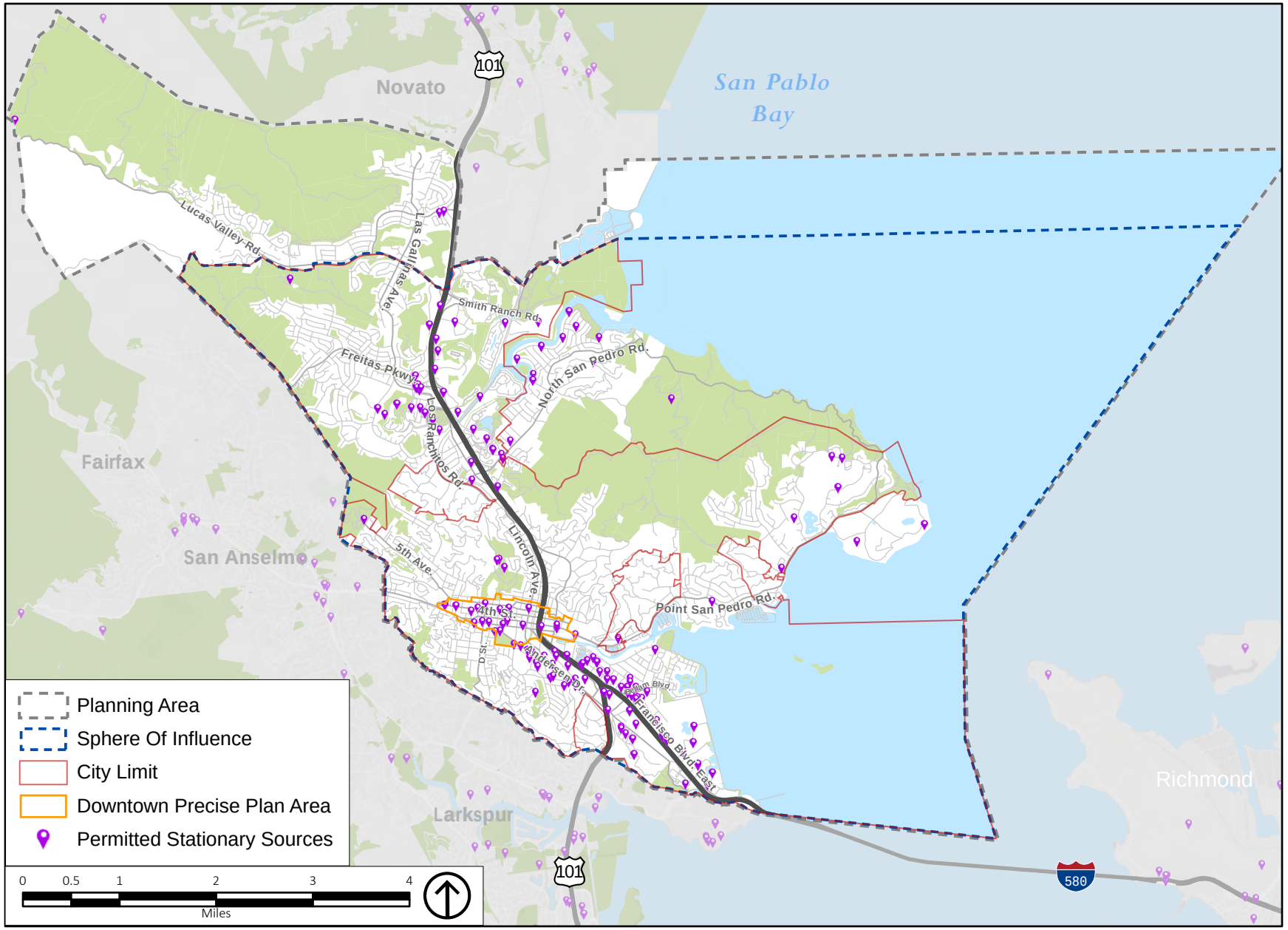
CARB's recommendations on the siting of new sensitive land uses identified in Table 4.3-5 were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and 1,3-butadiene from passenger vehicles.

TABLE 4.3-5 CARB RECOMMENDATIONS FOR SITING NEW SENSITIVE LAND USES

Source/Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: California Air Resources Board, May 2005, *Air Quality and Land Use Handbook: A Community Health Perspective*.

Figure 4.3-2 identifies stationary sources (BAAQMD-permitted sources) in the city as well as major roadways where BAAQMD recommends either implementation of best management practices to reduce risk or preparation of site-specific analysis to ensure air quality compatibility.



Source: BAAQMD, 2018; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.3-2

BAAQMD Air Quality Compatibility Siting Recommendations for San Rafael

Existing Emissions

Criteria Air Pollutant Emissions Inventory

Table 4.3-6 identifies the existing criteria air pollutant emissions inventory using emission rates for year 2019 (current conditions). The inventories are based on existing land uses in the City and SOI. The Year 2019 inventory represents the projected emissions currently generated by existing land uses using the baseline year 2019 emission factors for on-road vehicles.

Stationary Sources

Stationary sources of air pollution—including complex sources such as metal smelting, wastewater treatment plants, and refineries as well as smaller facilities such as diesel generators, gasoline dispensing facilities (GDFs or gas stations), and boilers—are regulated and subject to permit conditions established by the BAAQMD.[27] Stationary sources in the city are shown on Figure 4.3-2.

TABLE 4.3-6 EXISTING SAN RAFAEL CITY AND SOI REGIONAL CRITERIA AIR POLLUTANT EMISSIONS INVENTORY

	2019 EIR Study Area Criteria Air Pollutant Emissions (pounds per day)					
Pollutant/Standard	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Transportation [a]	140	878	1,416	4	398	166
Energy [b]	52	451	219	3	36	36
Off-Road Equipment [c]	82	110	3,854	0	17	13
Consumer Products [d]	1,142	0	0	0	0	0
Total	**1,416**	**1,439**	**5,490**	**7**	**451**	**216**
	2019 EIR Study Area Criteria Air Pollutant Emissions (tons per year)					
Pollutant/Standard	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Transportation [a]	24	152	246	1	69	29
Energy [b]	10	82	40	1	7	7
Off-Road Equipment [c]	15	20	703	0	3	2
Consumer Products [d]	208	0	0	0	0	0
Total	**257**	**255**	**989**	**1**	**79**	**38**

Notes:
a. On-road transportation VMT is provided by VMT and modeled with EMFAC2017. VMT for the General Plan is based on the "project's effect" of VMT in the City and SOI. As a result, unlike the Climate Change Action Plan inventory, the inventory conducted for the proposed General Plan 2040 includes the full trip length of intrajurisdictional trips.
b. Building electricity and natural gas are based on data provided by the City for the GHG emissions inventory conducted for their Climate Change Action Plan from PG&E and MCE. The electricity rates were adjusted to reflect the increase in housing units and employment within the City.
c. On-road vehicles and equipment are based on the OFFROAD2017 emissions inventory and include construction equipment and commercial equipment.
d. Residential consumer product use based on the emissions factors in the CalEEMod Users Guide Version 2016.3.2.
Source: PlaceWorks, 2020.

[27] Permitted facilities are mapped by BAAQMD and can be found at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

Odors

The city of San Rafael has a solid waste transfer station and two wastewater treatment plants that have the potential to generate odors. Odors are also associated with certain manufacturing processes and with some commercial operations (restaurants, etc.) that may be located near residential uses. Nuisance odors are regulated by under BAAQMD Regulation 7, Odorous Substances, and Regulation 1, Rule 1-301, Public Nuisance. Under the BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

4.3.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant air quality impacts if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5. Result in significant cumulative air quality impact.

4.3.2.1 BAAQMD AIR QUALITY CEQA GUIDELINES

As described earlier in this chapter, the analysis presented below is based on the methodology recommended by the BAAQMD. The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area and provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended numeric thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Air Quality Guidelines. These thresholds are designed to establish the level at which the BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA.

In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of a December 17, 2015, California Supreme Court decision (*California Building Industry Association v BAAQMD*) which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[28] The court

[28] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not rule on

also found that CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The court also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, BAAQMD published a new version of the Guidelines, dated May 2017, that includes revisions made to address the California Supreme Court's opinion. This latest version of the BAAQMD CEQA Guidelines was used to prepare the analysis in this EIR.

Criteria Air Pollutant Emissions and Precursors

Regional Significance Criteria

The BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4.3-7. Criteria for both the construction and operational phases of the project are shown.

TABLE 4.3-7 BAAQMD REGIONAL (MASS EMISSIONS) CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Notes: pounds per day = lbs/day
Source: Bay Area Air Quality Management District, 2017, CEQA Guidelines May 2017.

BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SFBAAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the USEPA, BAAQMD prepares the Clean Air Plan that details regional programs to attain the AAQS. Mass emissions in

the merits of the thresholds of significance, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning in the BAAQMD 2017 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (*California Building Industry Association v. BAAQMD*, Case Nos. A135335 and A136212 (Court of Appeal, First District, August 13, 2013)).

Table 4.3-7 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SFBAAB. The thresholds are based on the trigger levels for the federal New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the SFBAAB would be affected. Projects that do not exceed the BAAQMD regional significance thresholds in Table 4.3-7 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 4.3-7, emissions would cumulatively contribute to the nonattainment status and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4.3-7, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment—because mass emissions are not correlated with concentrations of emissions—or how many additional individuals in the SFBAAB would experience the health effects cited above.

BAAQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the Bay Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standard are met in the SFBAAB.

CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Community Risk and Hazards

Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby residential sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[29] Project-level construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[30]

Community Risk and Hazards: Project

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in one million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant project contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution.[31]

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following:

- An excess cancer risk level of more than 100 in one million or a chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[32]

[29] Bay Area Air Quality Management District, 2010, Screening Tables for Air Toxics Evaluations during Construction.

[30] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

[31] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

[32] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

In February 2015, Office of Environmental Health Hazard Assessment adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer-causing chemicals as well as age-specific breathing rates.[33]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which cause, or has a natural tendency to cause, injury, or damage to business or property. Under BAAQMD's Rule 1-301. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[34] For a plan-level analysis, BAAQMD requires the identification of potential existing and planned location of odors sources and policies to reduce odors.

4.3.2.2 METHODOLOGY

The air quality analysis was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with potential future development that could occur during the buildout horizon of the proposed project.

Emissions Inventory

The emissions inventory for the EIR Study Area includes the following sectors:

- Transportation: Transportation emissions forecasts were modeled using emission rates from CARB's EMFAC2017, version 1.0.2, Project Level (PL) web database. Modeling includes the SAFE Part 1 and Part 2 EMFAC2017 model adjustment factors released by CARB. Model runs were based on daily VMT data provided by Fehr & Peers and calendar year 2019 (existing) and 2040 emission rates. The VMT provided includes the full trip length for land uses in the city. This differs from the emissions inventory prepared for the *City of San Rafael Climate Change Action Plan* (CCAP), which includes a 50 percent reduction in trip lengths for trips that start or end the city but travel outside the city (intra-jurisdictional trips). Consistent with CARB's methodology within the *Climate Change Scoping Plan*

[33] Office of Environmental Health Hazard Assessment, 2015, February, Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.

[34] Bay Area Air Quality Management District, 2017, May, California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on October 25, 2018.

Measure Documentation Supplement, daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays to determine annual emissions.

- Energy: Energy use for residential and nonresidential land uses in the EIR Study Area were modeled using natural gas data provided by the City from the 2016 GHG emissions inventory conducted for the CCAP, which is based on natural gas use provided by PG&E. Residential and nonresidential energy forecasts are adjusted for increases in housing units and employment, respectively. The emissions rates for residential and nonresidential natural gas are based on the CalEEMod Users Guide.
- Off-Road Equipment: Emission rates from CARB's OFFROAD2017, version 1.0.1, web database were used to estimate criteria air pollutant emissions from light commercial and construction equipment in the EIR Study Area. OFFROAD2017 is a database of equipment use and associated emissions for each county compiled by CARB. Emissions were compiled using OFFROAD2017 for the county of Marin for year 2019. In order to determine the percentage of emissions attributable to the EIR Study Area, light commercial equipment is estimated based on employment for San Rafael as a percentage of Marin County. Construction equipment use is estimated based on building permit data for the city of San Rafael and the county of Marin from data compiled by the United States Census. The light commercial equipment emissions forecast is adjusted for changes in employment in the EIR Study Area. It is assumed that construction emissions for the forecast year would be similar to historical levels. Annual emissions are derived by multiplying daily emissions by 365 days.
- Area Sources: Area sources are based on the emission factors from the CalEEMod Users Guide for emissions generated from use of consumer products and cleaning supplies.

Impacts of the Environment on a Future Project

BAAQMD's CEQA Guidelines include methodology for jurisdictions wanting to evaluate the potential impacts from placing sensitive receptors proximate to major air pollutant sources. For assessing community risk and hazards for siting a new receptor, sources within a 1,000-foot radius of a project site are typically considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day) and permitted sources.[35] Figure 4.3-2 identifies areas within San Rafael where BAAQMD recommends best management practices or further study to ensure air quality compatibility of new sensitive land uses proximate to major sources of air pollution.

Buildout under the proposed General Plan 2040 could result in siting sensitive uses (e.g., residential) near sources of emissions (e.g., freeways, industrial uses, etc.). Developing new sensitive land uses near sources of emissions could expose persons that inhabit these sensitive land uses to potential air quality-related impacts. However, the purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project. *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478). Thus, CEQA does not require analysis of the potential environmental effects from siting sensitive receptors near existing sources, and this type of analysis is not provided in Section 4.3.4, impact discussion.

[35] Bay Area Air Quality Management District, 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines.

While it is generally not within the purview of CEQA to analyze impacts of the environment on a project, the proposed Conservation and Climate Change (C) and Equity, Diversity, and Inclusion (EDI) Elements of the proposed General Plan 2040 include a goal, policy, and programs that would require new sensitive land uses to incorporate setbacks, barriers, landscaping, or other design features to minimize air quality impacts and achieve appropriate health standards. The following goals, policies, and programs would serve to protect air quality in the EIR Study Area:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
  - Program C-2.2A: Protection of Sensitive Receptors. Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of US-101 or I-580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.
  - Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.3: Community Health. Increase community awareness about best practices for maintaining physical and mental health. Incorporate such practices in City-sponsored activities and programs (see also Policy PROS-2.5).
  - Program EDI-2.3C: Municipal Code Review. Periodically evaluate City codes and ordinances for their impact on health, including provisions for tobacco, vaping, and smoke-free multi-family housing; standards for indoor air quality; and HVAC [heating, ventilation, and air conditioning] systems able to sustain safe living conditions during wildfires, power outages, and extreme weather events.

4.3.3 IMPACT DISCUSSION

AIR-1	Implementation of the proposed project could conflict with or obstruct implementation of the applicable air quality plan.

General Plan 2040

A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the Bay Area.

As described in Section 4.3.2, Standards of Significance, BAAQMD requires a consistency evaluation of a plan with its current AQMP measures. BAAQMD considers project consistency with the AQMP in accordance with the following:

- Does the project support the primary goals of the AQMP?
- Does the project include applicable control measures from the AQMP?
- Does the project disrupt or hinder implementation of any AQMP control measures?
- A comparison that the project VMT or vehicle trip increase is less than or equal to the projected population increase.

Bay Area Air Quality Management District 2017 Clean Air Plan Goals

The primary goals of the 2017 Clean Air Plan are to attain the State and federal AAQS, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal.

Attain Air Quality Standards

BAAQMD's 2017 Clean Air Plan strategy is based on regional population and employment projections in the Bay Area compiled by ABAG, which are based in part on cities' General Plan land use designations. These demographic projections are incorporated into *Plan Bay Area* 2040. Demographic trends incorporated into *Plan Bay Area* 2040 determine VMT in the Bay Area, which BAAQMD uses to forecast future air quality trends. The SFBAAB is currently designated a nonattainment area for O_3, $PM_{2.5}$, and PM_{10} (State AAQS only).

Future growth associated with the proposed General Plan 2040 would occur incrementally throughout the 2040 buildout horizon. As discussed further in Chapter 4.14, Population and Housing, of this Draft EIR, the proposed population and employment projections of the General Plan 2040 would result in a less-than-significant impact related to regional growth. As described in Chapter 4.14, the proposed General Plan 2040 contains goals, policies, and programs that are intended to guide development in San Rafael through the 2040 horizon year in a manner that reduces/minimizes VMT. Potential future development in the city

is projected to occur primarily in TPA s and PDAs on a limited number of vacant parcels, as infill/intensification on already developed and/or underutilized sites, in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Thus, emissions resulting from potential future development associated with the proposed General Plan 2040 would not hinder BAAQMD's ability to attain the California or National AAQS. Accordingly, impacts would be *less than significant*.

Reduce Population Exposure and Protect Public Health

Buildout of the proposed General Plan 2040 could result in new sources of TACs and $PM_{2.5}$. Stationary sources, including smaller stationary sources (e.g., dry cleaners, restaurants with char-broilers, emergency generators, and boilers) are subject to review by BAAQMD as part of the permitting process. Adherence to BAAQMD permitting regulations would ensure that new stationary sources of TACs do not expose populations to significant health risk. Mobile sources of air toxics (e.g., truck idling) are not regulated directly by BAAQMD. As a result, development allowed by the proposed General Plan 2040 could result in new sources of criteria air pollutant emissions and/or TACs near existing or planned sensitive receptors. Mitigation Measure AIR-3.2—described in Impact Discussion AIR-3—would ensure mobile sources of TACs not covered under BAAQMD permits are considered during subsequent project-level environmental review by the City. Individual development projects would be required to achieve the incremental risk thresholds established by BAAQMD. Thus, implementation of the proposed General Plan 2040 would not result in introducing new sources of TACs that on a cumulative basis that could expose sensitive populations to significant health risk. Therefore, impacts would be *less than significant*.

Reduce GHG Emissions and Protect the Climate

Consistency of the proposed General Plan 2040 with State, regional, and local plans adopted for the purpose of reducing GHG emissions are discussed under Impact Discussion GHG-2 in Chapter 4.6, Greenhouse Gas Emissions, of this Draft EIR. Future development allowed by the proposed General Plan 2040 would be required to adhere to statewide measures that have been adopted to achieve the GHG reduction targets of AB 32 and SB 32. The proposed General Plan 2040 is consistent with regional strategies for infill development identified in *Plan Bay Area* 2040. Furthermore, the proposed General Plan 2040 would also be consistent with the City's CCAP. While Impact Discussion GHG-1 identifies that the proposed General Plan 2040 would generate a substantial increase in emissions, Impact Discussion GHG-2 identifies that the proposed General Plan 2040 is consistent with state, regional, and local plans to reduce GHG emissions. Therefore, the proposed General Plan 2040 is consistent with the goal of the 2017 Clean Air Plan to reduce GHG emissions and protect the climate, and the impact would be *less than significant*.

2017 Clean Air Plan Control Measures

Table 4.3-8 identifies the control measures in the 2017 Clean Air Plan that are required by BAAQMD to reduce emissions for a wide range of both stationary and mobile sources. As shown in Table 4.3-8, the proposed General Plan 2040 would not conflict with the 2017 Clean Air Plan and would not hinder

BAAQMD from implementing the control measures in the 2017 Clean Air Plan. Accordingly, impacts would be *less than significant*.

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Consistency
Stationary Source Control Measures	Stationary and area sources are regulated directly by BAAQMD; therefore, as the implementing agency, new stationary and area sources in the city would be required to comply with BAAQMD regulations. BAAQMD routinely adopts/revises rules or regulations to implement the stationary source (SS) control measures to reduce stationary source emissions. Based on the type of the proposed land uses (primarily residential and commercial) under the proposed project, implementation of the proposed project would not hinder the ability of BAAQMD to implement these SS control measures. Major stationary source are more commonly associated with industrial manufacturing or warehousing. However, BAAQMD and the City have existing regulations in place to ensure potential future development under the proposed project would not conflict with the applicable SS control measures. Nonresidential land uses may generate small quantities of stationary source emissions during project operation (e.g., emergency generators, dry cleaners, and gasoline dispensing facilities); however, these small-quantity generators would require review by BAAQMD for permitted sources of air toxics, which would ensure consistency with the 2017 Clean Air Plan. The proposed project includes the following policies and programs in the Equity, Inclusion, and Diversity Element (EDI) to support emissions reductions from stationary sources proximate to disadvantaged communities: ▪ Policy EDI-2.5: Environmental Justice ▪ Program EDI-2.5A: Reducing Exposure to Hazards ▪ Program EDI-2.5B: Reducing Indoor Air Pollution ▪ Program EDI-2.5C. Environmental Hazard Data The Conservation and Climate Change (C) Element also include policies and programs for coordination with BAAMQD on air pollutant reductions and considering air quality conditions when siting new receptors: ▪ Policy C-2.1: State and Federal Air Quality Standards ▪ Program C-2.1A: Cooperation with Other Agencies ▪ Policy C-2.2: Land Use Compatibility and Building Standards ▪ Program C-2.2A: Protection of Sensitive Receptors ▪ Program C-2.2B: New Sources of Air Pollution
Transportation Control Measures	Transportation (TR) control measures are strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, and traffic congestion for the purpose of reducing motor vehicle emissions. Although most of the TR control measures are implemented at the regional level—that is, by MTC or Caltrans—the 2017 Clean Air Plan relies on local communities to assist with implementation of some measures. The proposed project includes the policies in the Mobility (M) Element to address the TR control measures as follows: Expanding the pedestrian and bicycle network: ▪ Policy M-6.1: Encouraging Walking and Cycling ▪ Program M-6.1A: Bicycle and Pedestrian Master Plan Implementation ▪ Program M-6.1B: Station Area Plans ▪ Program M-6.1C: Canal Community Based Transportation Plan (CBTP) ▪ Program M-6.2A Pedestrian and Bicycle Safety ▪ Program M-6.2B: Vision Zero ▪ Policy M-6.3L Connectivity ▪ Program M-6.3A: Implementation of Pathway Improvements ▪ Program M-6.3B: Improvements in Unincorporated Areas ▪ Program M-6.3C: Bicycle Parking ▪ Policy M-6.4: Urban Trails Network ▪ Program M-6.4A: Urban Trails Master Plan ▪ Policy M-6.5: Pilot Projects

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Consistency
	▪ Policy M-6.6: Coordination ▪ Program M-6.6A: Bikeshare Program Reduce vehicle travel in the city. ▪ Policy M-3.3: Transportation Demand Management ▪ Policy M-4.3L Smart Improvements ▪ Policy M-4.7: Intermodal Transit Hubs ▪ Program M-4.7A: Transit Center Relocation ▪ Policy M-5.6: Truck Impacts ▪ Policy M-7.B: Parking Standards ▪ Policy M-7.9: Parking for Transit Users Support implementation of zero-carbon transportation solutions: ▪ Policy M-3.6: Low-Carbon Transportation ▪ Program M-3-6A: ZEV Plan ▪ Program P-3.6B: Zero Emission Municipal Vehicles ▪ Program M-7.8A: Charging Station ▪ Program M-6.3D: Electric Bicycles Safe Routes to Schools: ▪ Program M-6.2D: Safe Routes Programs ▪ Policy M-5.5: School-Related Traffic ▪ Program M-5.5A: School Transportation The Conservation and Climate Change (C) Element includes policies and programs that support the transition to cleaner fuels, including: ▪ Policy C-2.3: Improving Air Quality through Land Use and Transportation Choices ▪ Policy C-2.6: Education and Outreach ▪ Program C-2.6B: Equipment and Generators
Energy and Climate Control Measures	The energy and climate (EN) control measures are intended to reduce energy use as a means to reducing adverse air quality emissions. The Conservation and Climate Change (C) Element includes policies and programs to align the City's goals with that of Marin Clean Energy and other countywide plans addressing energy conservation and renewable energy. ▪ Policy C-4.1: Renewable Energy ▪ Policy C-4.1A: Marin Clean Energy Targets ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning ▪ Policy C-5.3: Advocacy ▪ Program C-5.3B: State and Federal Actions ▪ Program C-5.3C: Regional Collaboration Furthermore, potential future development in the buildout of the proposed General Plan 2040 would be built to comply with the latest Building Energy Efficiency Standards and CALGreen standards. Therefore, implementation of the proposed project would not conflict with these EN control measures.
Buildings Control Measures	The buildings (BL) control measures focus on working with local governments to facilitate adoption of best GHG emissions control practices and policies. The Community Design and Preservation (CDP) Element and the Conservation and Climate Change (C) Element include policies and programs for energy efficiency and sustainability: ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1B: PACE Financing

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Consistency
	▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.2: Energy Conservation ▪ Program C-4.2A: Energy Efficiency Outreach ▪ Program C-4.2B: Green Building Standards ▪ Program C-4.2C: Energy Efficiency Incentives ▪ Program C-4.2D: Time-of-Sale Energy Audits ▪ Program C-4.2E: Cool Roofs and Pavements ▪ Policy C4.3 Managing Energy Demand ▪ Program C-4.3A: innovative Technologies ▪ Policy C-4.4: Sustainable Building Materials ▪ Program C-4.4A: Use of Alternative Building Materials ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning In addition, new developments accommodated under the proposed project would be built to comply with the latest Building Energy Efficiency Standards and CALGreen standards. Thus, the proposed project would not conflict with these BL control measures.
Agriculture Control Measures	Agricultural practices in the Bay Area accounts for a small portion, roughly 1.5 percent, of the Bay Area GHG emissions inventory. The GHGs from agriculture include methane and nitrous oxide, in addition to carbon dioxide. While the agriculture (AG) control measures target larger-scale farming practices that are not proposed under the project, the type of urban farming (i.e., community gardens) associated with the proposed project would support reduced GHG emissions by increasing the amount of food grown and consumed locally. The Conservation and Climate Change (C); the Parks, Open Space, and Recreation (PROS); and the Equity, Inclusion, and Diversity (EDI) Elements include the following policies and programs that would reduce emissions from agriculture. ▪ Program C-3.3B: Non-traditional Gardens ▪ Policy PROS-2.8: Community Gardens ▪ Policy EDI-2.8: Food Access ▪ Program EDI-2.8A: Incentives ▪ Policy EDI-2.9: Urban Agriculture ▪ Program EDI-2.9A: Obstacles to Food Production Therefore, implementation of the proposed project would not conflict with these AG control measures.
Natural and Working Lands Control Measures	The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands. The Community Design and Preservation (CDP); the Conservation and Climate Change (C); the Parks, Open Space, and Recreation (PROS); and the Safety (S) Elements include the following policies and programs on carbon sequestration: ▪ Policy CDP-3.5: Street Trees ▪ Program CDP-3.5A: Street Tree Planting and Maintenance ▪ Program CDP-3.5B: Street Tree Inventory ▪ Program CDP-3.5C: Street Trees for New Development ▪ Program CDP-3.5D: Street Tree Maintenance ▪ Policy C-1.9: Enhancement of Creeks and Drainageways ▪ Policy C-3.3: Low Impact Development ▪ Program C-3.3B: Non-traditional Gardens ▪ Policy C-3.4: Green Streets ▪ Program C-3.4A: Green Streets Planning ▪ Program C-3.4B: Funding ▪ Policy C-5.5: Carbon Sequestration ▪ Policy PROS-1.18: Sustainable Park Operations ▪ Program PROS-1.18A: Sustainable Design

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Consistency
	▪ Policy PROS-3.3: Open Space Management Plan ▪ Program PROS-3.3A: Open Space Management Plan ▪ Policy PROS-3.10: Public Education ▪ Program S-4.1G: Open Space and Forestry Management
Waste Management Control Measures	The waste management (WA) control measures include strategies to increase waste diversion rates through efforts to reduce, reuse and recycle. The Community Services and Infrastructure (CSI) Element includes the following policies and programs to reduce landfilled waste: ▪ Policy CSI-4.17: Reducing Landfilled Waste Disposal ▪ Program CSI-4.17A: Waste Reduction ▪ Program CSI-4.17B: Recycling ▪ Program CSI-4.17C: Construction and Demolition Waste ▪ Program CSI-17D: Waste Reduction Programs ▪ Program CSI-4.17E: Community Composting ▪ Program CSI-4.17F: Food to Energy ▪ Program CSI-4.17G: Recyclable Waste Receptacles ▪ Policy CSI-4.18: Waste Reduction Advocacy and Education ▪ Program CSI-4.18A: Recycling Education Implementation of the ongoing City regulations and proposed policies to reduce waste would ensure implementation of the proposed project would not conflict with these WA control measures.
Water Control Measures	The 2017 Clean Air Plan includes measures to reduce water use. The Conservation and Climate Change (C) and the Community Services and Infrastructure (CSI) Elements include the following policies and programs to increase plumbing water efficiency and reduce landscape water use: ▪ Policy C-3.8: Water Conservation ▪ Program C-3.8A: Water Conservation Programs ▪ Program C-3.8B: Public Education ▪ Program C-3.8C: Reclaimed Water Use ▪ Program C-3.8D: Greywater and Rainwater ▪ Program C-3.8E: Reducing Municipal Water Use ▪ Policy C-3.9: Water Efficient Landscaping ▪ Program C-3.9A: Demonstration Gardens ▪ Policy CSI-4.12: Recycled Water ▪ Program CSI-4.12A: CMSA Capacity Expansion ▪ Program CSI-4.12B: Las Gallinas Expansion Project ▪ Program CSI-4.12C: Sewer Line Replacement.
Super-GHG Control Measures	Super-GHGs include methane, black carbon, and fluorinated gases. The compounds are sometimes referred to as short-lived climate pollutants because their lifetime in the atmosphere is generally fairly short. Measures to reduce super-GHGs are addressed on a sector-by-sector basis in the 2017 Clean Air Plan. Through ongoing implementation of the City's CCAP, the City will continue to reduce local GHG emissions, meet State, regional, and local reduction targets, which would ensure implementation of the proposed project would not conflict with these SL control measures. The Community, Design, and Preservation (CDP) and the Conservation and Climate Change (C) Elements include policies and programs for encouraging use of renewable energy. ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1B: PACE Financing ▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning

TABLE 4.3-8 CONTROL MEASURES FROM THE BAAQMD 2017 CLEAN AIR PLAN

Type	Consistency
	▪ Policy C-5.3: Advocacy ▪ Program C-5.3B: State and Federal Actions ▪ Program C-5.3C: Regional Collaboration
Further Study Control Measures	The majority of the further study control measures apply to sources regulated directly by BAAQMD. Because BAAQMD is the implementing agency, new and existing sources of stationary and area sources in the project area would be required to comply with these additional study control measures in the 2017 Clean Air Plan.

Source: Bay Area Air Quality Management District, 2017 Revised, California Environmental Quality Act Air Quality Guidelines.

Regional Growth Projections for VMT and Population

BAAQMD's 2017 Clean Air Plan incorporates the growth projections from the City's current General Plan 2020. Potential future development as a result of implementing the proposed General Plan 2040 would result in additional sources of criteria air pollutants. Growth accommodated by the proposed General Plan 2040 could occur through the 2040 buildout horizon. BAAQMD's approach to evaluating impacts from criteria air pollutants generated by a plan's long-term growth is to compare population estimates to the VMT estimates. This is because BAAQMD's AQMP plans for growth in the SFBAAB are based on regional population projections identified by ABAG and growth in VMT identified by TAM. Changes in regional, community-wide emissions in the EIR Study Area could affect the ability of BAAQMD to achieve the air quality goals in the AQMP. Therefore, air quality impacts for a plan-level analysis are based on consistency with the regional growth projections. Table 4.3-9 compares the projected increase in population with the projected increases in total VMT.

TABLE 4.3-9 COMPARISON OF THE CHANGE IN POPULATION AND VMT IN THE EIR STUDY AREA

				Change from Baseline		Change from 2040 No Project	
Category	Baseline	2040 Without Project [a]	2040 With Project	Change	Percent	Change	Percent
City							
Population	61,230	NA	69,240	8,010	13%	NA	NA
Employment	42,050	NA	46,100	4,050	10%	NA	NA
SP	103,280	111,825	115,340	12,060	12%	3,515	3%
VMT per Day [a]	3,214,988	3,391,163	3,352,369	137,381	4%	-38,794	-1%
VMT/person	52.5	NA	48.4	-4.1	-8%	NA	NA
VMT/SP	31.1	30.3	29.1	-2.1	-7%	**-1.3**	**-4%**
Remainder of EIR Study Area							
Population	14,521	NA	15,421	900	6%	NA	NA
Employment	2,150	NA	2,215	65	3%	NA	NA
SP	16,671	17,286	17,636	965	6%	350	2%
VMT per Day [a]	399,338	420,975	385,521	-13,817	-3%	-35,454	-8%
VMT/person	27.5	NA	25.0	-2.5	-9%	NA	NA
VMT/SP	24.0	24.4	21.9	-2.1	-9%	**-2.5**	**-10%**

Notes: SP: Service Population
[a] Based on VMT data provided by Fehr & Peers. The 2040 without-project scenario is the Current General Plan.
Source: City of San Rafael, PlaceWorks, and Fehr & Peers, 2020.

As previously stated, BAAQMD's AQMP requires that the VMT increase by less than or equal to the projected population increase from the proposed General Plan 2040 (e.g., generate the same or less VMT per population). However, because the proposed General Plan 2040 accommodates both residential and nonresidential growth, a better indicator of how efficiently the city is growing can be made by comparing the increase in VMT to the increase in service population (e.g., generate the same or less VMT per service population). This approach is similar to the efficiency metrics for GHG emissions, which consider the total service population when calculating project efficiency. In addition, because the 2017 Clean Air Plan used growth projections based, in part, on cities' General Plan land use designations, the growth rate in VMT compared to service population is evaluated between buildout under the proposed General Plan 2040 and buildout under the currently allowed under General Plan 2020.

VMT estimates based on data provided by Fehr & Peers were calculated for the EIR Study Area. As shown in Table 4.3-9, implementation of the proposed General Plan 2040 would increase daily VMT by 137,381 vehicle miles per day in the city, or about 4 percent, when compared to existing conditions. However, implementation of the proposed General Plan 2040 would result in lower VMT per capita than under existing conditions (8 percent lower in the city and 9 percent lower in the remainder of the EIR Study Area), and lower VMT per service population than under existing conditions (7 percent lower in the city and 9 percent lower in the remainder of the EIR Study Area). Compared to the demographic and VMT growth projections of the 2040 Without Project conditions (i.e., growth that would occur as currently allowed and projected under General Plan 2020), the 2040 With Project conditions would also decrease the VMT/SP by approximately 4 percent in the city and 10 percent in the remainder of the EIR Study Area. This indicates that buildout conditions under the proposed General Plan 2040 would be more efficient in reducing VMT on a per service population basis. Thus, the proposed General Plan 2040 would be consistent with the goals of the 2017 Clean Air Plan. Therefore, impacts would be *less than significant*.

In summary, implementation of the proposed General Plan 2040 would not conflict with the 2017 Clean Air Plan, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area is mostly within the Downtown San Rafael SMART Station PDA and TPA (see Figure 4-4 in Chapter 4, Environmental Evaluation, of this Draft EIR), which includes 503 acres surrounding the San Rafael Transit Center. About 200 acres of the Downtown Precise Plan Area is within 0.25 mile, or a 10-minute walking distance, of the San Rafael Transit Center. Potential future development would primarily occur within this TPA and PDA on a limited number of vacant parcels, as infill/intensification on already developed and/or underutilized sites, in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Potential future development in this area, like the proposed General Plan 2040, would occur incrementally throughout the 2040 buildout horizon, would be compatible with regional growth projections, would be required to achieve the incremental risk thresholds established by BAAQMD, and would reduce GHG emissions and protect the climate. Implementation of Mitigation Measure AIR-3.2—described in Impact Discussion AIR-3—would ensure mobile sources of TACs not covered under BAAQMD permits are considered during subsequent project-level environmental review by the City. The proposed

Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not conflict with the 2017 Clean Air Plan, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

AIR-2 Implementation of the proposed project could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is in nonattainment under applicable federal or State ambient air quality standard.

This section analyzes potential impacts related to air quality that could occur from the buildout associated with the proposed General Plan 2040 and the Downtown Precise Plan in combination with the regional growth in the SFBAAB from construction and operational activities. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS. At a plan level, air quality impacts are measured by the potential for a project to exceed BAAQMD's significance criteria and contribute to the State and federal nonattainment designations in the SFBAAB. Any project that produces a significant regional air quality impact in an area that is in nonattainment adds to the cumulative impact. As described in Impact Discussion AIR-1, the proposed General Plan 2040 and Downtown Precise Plan would be consistent with the 2017 Clean Air Plan. However, construction and operational activities associated with potential future development under the proposed General Plan 2040 and Downtown Precise Plan could generate a substantial increase in criteria air pollutant emissions that could exceed the BAAQMD regional significance thresholds.

General Plan 2040: Construction

Construction activities would temporarily increase criteria air pollutant emissions within the SFBAAB. The primary source of NO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. BAAQMD considers all impacts related to fugitive dust emissions (PM_{10} and $PM_{2.5}$) from construction to be less than significant with implementation of BAAQMD's best management practices (see Table 4.3-7). The primary sources of VOC emissions are the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included under Section 4.3.1.1, Air Pollutants of Concern.

Construction activities associated with the potential future development from implementation of the proposed General Plan 2040 would occur over the buildout horizon, causing short-term emissions of criteria air pollutants. Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Due to the scale of development activity associated with buildout of proposed General Plan 2040, cumulative emissions would likely exceed the BAAQMD regional significance thresholds. In accordance

with the BAAQMD methodology, emissions that exceed the regional significance thresholds would cumulatively contribute to the nonattainment designations of the SFBAAB. Emissions of VOC and NO_X are precursors to the formation of O_3. In addition, NO_X is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Therefore, the proposed General Plan 2040 would cumulatively contribute to the nonattainment designations of the SFBAAB for O_3 and particulate matter (PM_{10} and $PM_{2.5}$) during construction.

For the proposed General Plan 2040, which is a broad-based policy plan, it is not possible to determine whether the scale and phasing of individual projects would exceed the BAAQMD's short-term regional or localized construction emissions thresholds. When applicable, potential future development under the proposed General Plan 2040 would be subject to separate environmental review pursuant to CEQA in order to identify and mitigate potential air quality impacts. Any such subsequent environmental review of development projects would be required to assess potential impacts under BAAQMD's project-level thresholds based on site-specific construction phasing and buildout characteristics. Existing federal, State, and local regulations and goals, policies, and programs of the proposed General Plan 2040 described throughout this chapter protect local and regional air quality. Continued compliance with these regulations would reduce construction-related impacts.

The proposed Conservation and Climate Change (C) Element contains one policy and one program that require local planning and development decisions to consider impacts from particulate matter pollution (i.e., fugitive dust). The following General Plan policy and program would minimize potential adverse impacts related to particulate matter air pollution:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.1: State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.
  - Program C-2.1A: Cooperation with Other Agencies. Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.
- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
  - Program C-2.4A: Particulate Matter Exposure. Through development review, require that Best Available Control Technology (BACT) measures (such as setbacks, landscaping, paving, soil and dust management, and parking lot street sweeping) are used to protect sensitive receptors from particulate matter. This should include control of construction-related dust and truck emissions as well as long-term impacts associated with project operations. Where appropriate, health risk assessments may be required to evaluate risks and determine appropriate mitigation measures.

Fugitive Dust from Construction

As part of the City's development approval process pursuant to General Plan Programs C-2.1A and C-2.4A, the City of San Rafael requires applicants of discretionary development projects that are subject to CEQA

to control construction-related dust by complying with the current BAAQMD basic control measures for fugitive dust control[36]as follows:

- Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Pave, apply water twice daily or as often as necessary to control dust, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust.
- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydroseed or apply nontoxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit vehicle traffic speeds on unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.

Because BAAQMD considers all impacts related to fugitive dust emissions (PM_{10} and $PM_{2.5}$) from construction from all development in their jurisdiction to be less than significant with implementation of BAAQMD's best management practices (see Table 4.3-7), the ongoing implementation of BAAQMD's requirements by the City pursuant General Plan Programs C-2.1A and C-2.4A would ensure impacts would be *less than significant*.

Other Air Pollutants from Construction

BAAQMD identifies screening sizes of development projects in the BAAQMD CEQA Guidelines that apply to development projects in San Rafael and throughout BAAQMD's jurisdiction. Development projects that are below the screening size are assumed to have less-than-significant impacts. Development projects that are larger than the screening size are required to demonstrate that the construction phase of the project would not exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines. If construction-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the City requires the project applicants to incorporate project-specific mitigation measures to reduce air pollutant emissions (NO_X) during construction activities to below the thresholds (e.g., see BAAQMD CEQA Guidelines, Table 8-2, Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold, or applicable construction mitigation measures subsequently approved by BAAQMD). Therefore, without the preparation of project-specific analysis on a

[36] BAAQMD's current CEQA Guidelines can be found on their website: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa

project-by-project basis for development proposals that exceed the BAAQMD screening sizes, construction emission impacts at the program level are considered *significant*.

Impact AIR-2.1: Construction activities associated with potential future development could potentially violate an air quality standard or cumulatively contribute to an existing or projected air quality violation.

Mitigation Measure AIR-2.1: To reduce temporary increases in criteria air pollutant emissions (NO_X) during the construction phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.4 (Particulate Matter Pollution Reduction) to be implemented as part of the project approval process:

- New Program: Require projects that exceed the BAAQMD screening sizes to evaluate project-specific construction emissions in conformance with the BAAQMD methodology and if construction-related criteria air pollutants exceed the BAAQMD thresholds of significance, require the project applicant to mitigate the impacts to an acceptable level.

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Construction

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area has the potential to generate a substantial increase in criteria air pollutant emissions from construction. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant*.

Significance with Mitigation: Less than significant.

General Plan 2040: Operation

BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including VOC, NO, PM_{10}, and $PM_{2.5}$. Development projects below the significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. According to BAAQMD's CEQA Guidelines, long-range plans, such as the proposed General Plan 2040, present unique challenges for assessing impacts. Due to the SFBAAB's nonattainment status for ozone and PM and the cumulative impacts of growth on air quality, these plans almost always have significant, unavoidable, adverse air quality impacts.

Implementation of the proposed General Plan 2040 would result in an increase in development intensity in the EIR Study Area. Buildout of the proposed General Plan 2040 would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). Although BAAQMD's CEQA Air Quality Guidelines only require an emissions inventory of criteria air pollutants for project-level analyses, enough information regarding the

buildout of the proposed General Plan 2040 is available to generate an inventory of criteria air pollutants to identify the magnitude of emissions. Table 4.3-10 identifies these emissions. Subsequent environmental review of applicable development projects would be required to assess potential impacts under BAAQMD's project-level thresholds.

TABLE 4.3-10 CITY OF SAN RAFAEL AND SOI CRITERIA AIR POLLUTANT EMISSIONS FORECAST

	Criteria Air Pollutants (Average Pounds/Day)			
Category	VOC	NO_x	PM_{10}	$PM_{2.5}$
Existing Land Uses (City + SOI) at 2040				
Transportation [a]	104	341	402	163
Energy [b]	52	451	36	36
Off Road Equipment [c]	82	110	17	13
Consumer Products [d]	1,142	—	—	—
Total Average Daily (pounds/day)	1,380	902	455	213
Proposed Project Land Uses (City + SOI) 2040				
Transportation [a]	107	353	415	169
Energy [b]	59	510	41	41
Off-Road Equipment [c]	89	120	19	15
Consumer Products [d]	1,391	—	—	—
Total Average Daily (pounds/day)	1,647	983	475	224
Change from Existing Land Uses	**268**	**80**	**20**	**11**
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold	Yes	Yes	No	No
Scenario	**Tons per Year**			
	VOC	NO_x	PM_{10}	$PM_{2.5}$
Existing Land Uses at 2040	251	162	79	37
Proposed Project Land Uses at 2040	300	176	83	39
Change from Existing Land Uses	**49**	**15**	**4**	**2**
BAAQMD Annual Project-Level Threshold	10	10	15	10
Exceeds Annual Threshold	Yes	Yes	No	No

Note: Emissions may not total to 100 percent due to rounding.
[a] On-road transportation VMT is provided by Fehr & Peers and modeled with EMFAC2017 using 2040 emission rates. VMT for the General Plan is based on the "project's effect" of VMT in the City and SOI. As a result, unlike the CCAP inventory, the inventory conducted for the General Plan includes the full trip length of intrajurisdictional trips.
[b] Building electricity and natural gas are based on data provided by the City for the GHG emissions inventory conducted for their CCAP from PG&E and MCE. The electricity rates were adjusted to reflect the increase in dwelling units and employment within the City.
[c] On-road vehicles and equipment are based on the OFFROAD2017 emissions inventory and include construction equipment and commercial equipment.
[d] Emissions from consumer products is based on the CalEEMod User's Guide Version 2016.3.2 for residential consumer product use.
Source: PlaceWorks, 2020.

The proposed Conservation and Climate Change (C) Element contains a goal, policies, and programs that require local planning and development decisions to consider impacts to air quality. The following General Plan goal, policies, and programs would serve to minimize potential adverse impacts to air quality:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.1: State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.

- Program C-2.1A: Cooperation with Other Agencies. Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.

- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
  - Program C-2.2A: Protection of Sensitive Receptors. Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of US-101 or I-580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.
  - Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

- Policy C-2.3: Improving Air Quality Through Land Use and Transportation Choices. Recognize the air quality benefits of reducing dependency on gasoline-powered vehicles. Implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, and support the shift to electric and cleaner-fuel vehicles.
  - Program C-2.3A: Air Pollution Reduction Measures. Implement air pollution reduction measures as recommended by BAAQMD's Clean Air Plan and supporting documents to address local sources of air pollution in community planning. This should include Transportation Control Measures (TCM) and Transportation Demand Management (TDM) programs to reduce emissions associated with diesel and gasoline-powered vehicles.

- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources..
  - Program C-2.4C: Wood-Burning Stoves and Fireplaces. Regulate wood-burning stoves and fireplaces to reduce particulate pollution.
  - Program C-2.6B: Equipment and Generators. Encourage the use of non- gasoline powered leaf blowers and other yard maintenance equipment, as well as clean-powered generators.

As shown in Table 4.3-10, buildout of the proposed General Plan 2040 would generate a substantial increase in criteria air pollutant emissions that exceeds the BAAQMD regional significance thresholds for VOC, NO_x, PM_{10}, and $PM_{2.5}$. As stated above in the discussion of construction impacts, BAAQMD identifies screening sizes of development projects in the BAAQMD CEQA Guidelines. Development projects that are below the screening size are assumed to have less-than-significant impacts. Development projects that are larger than the screening size are required to demonstrate that the operational phase of the project would not exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines. If operation-related criteria air pollutants are determined to have the potential to exceed the BAAQMD

thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the City requires the project applicants to incorporate project-specific mitigation measures to reduce long-term air pollutant emissions during operation to below these thresholds. Possible mitigation measures to reduce long-term emissions can include, but are not limited to, the following:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with Section 2485 of 13 California Code of Regulations Chapter 10.
- Implement Tier 1 or Tier 2 voluntary measures that improve energy efficiency identified in the California Green Building Standards Code.
- Fuel switching: Require appliances to be electric rather than gas powered.

Therefore, compliance with applicable policies and programs would contribute to minimizing long-term emissions. However, implementation of the proposed General Plan 2040 would still exceed the BAAQMD significance thresholds for operation as shown in Table 4.3-10. Accordingly, implementation of the proposed General Plan 2040 could result in *significant* long-term regional air quality impacts.

Impact AIR-2.2: Operational activities associated with potential future development could cumulatively contribute to the non-attainment designations of the San Francisco Bay Area Air Basin.

Mitigation Measure AIR-2.2: To reduce long-term increases in air pollutants during the operation phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2 (Land Use Compatibility and Building Standards) be implemented as part of the project approval process:

- New Program: Require projects that exceed the BAAQMD screening sizes to evaluate project-specific operation emissions in conformance with BAAQMD CEQA Guidelines, and if operation-related air pollutants exceed the BAAQMD-adopted thresholds of significance, require the project applicants to mitigate the impact to an acceptable level.

Significance with Mitigation: Significant and unavoidable. Compliance with the policies and programs in the proposed General Plan 2040 and implementation of Mitigation Measure AIR-2.2 would reduce impacts to the maximum extent feasible. Further, as shown in Table 4.3-11, compared to existing baseline year conditions, emissions of NO_X are projected to decrease from current levels despite growth associated with the proposed project. However, regional and localized operational emissions could exceed the BAAQMD significance thresholds. Consequently, implementation of the proposed project could cumulatively contribute to the nonattainment designations of the SFBAAB. The identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent individual projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance. However, due to the programmatic nature of the proposed General Plan 2040, no additional mitigating policies are available, and the impact is considered *significant and unavoidable*.

TABLE 4.3-11 NET CHANGE IN REGIONAL CRITERIA AIR POLLUTANT EMISSIONS FROM EXISTING BASELINE

	Criteria Air Pollutants (Average Pounds/Day)			
Category	**VOC**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Existing Average Daily	1,416	1,439	451	216
Proposed Project Average Daily	1,647	983	475	224
Change from Existing Land Uses	**231**	**-456**	**24**	**8**
BAAQMD Average Daily Project-Level Threshold	54	54	82	54
Exceeds Average Daily Threshold	Yes	No	No	No
Scenario	**Tons per Year**			
	VOC	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Existing Annual Emission	257	255	79	38
Proposed Project Annual Emissions	300	176	83	39
Change from Existing Land Uses	**42**	**-79**	**4**	**1**
BAAQMD Annual Project-Level Threshold	10	10	15	10
Exceeds Annual Threshold	Yes	No	No	No

Note: Emissions may not total to 100 percent due to rounding.
Source: PlaceWorks, 2020.

Downtown Precise Plan: Operation

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would result in direct and indirect criteria air pollutant emissions from transportation, energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment). The impact analysis described under the proposed General Plan 2040 includes the buildout projections for the Downtown Precise Plan Area. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *significant and unavoidable.* An evaluation of project-specific details for future development could demonstrate future projects are below the applicable thresholds; therefore, this program-level conclusion does not prohibit a less-than-significant conclusion at the project level in the future.

Significance with Mitigation: Significant and unavoidable.

AIR-3 Implementation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.

If implementation of the proposed General Plan 2040 and the Downtown Precise Plan would cause or contribute significantly to elevated pollutant concentration levels, it could expose sensitive receptors to air pollutants to elevated pollutant concentrations for construction and operation, which are evaluated in the analysis below. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects. A discussion of the proposed General Plan 2040 policies and programs that ensure that air quality is considered when siting new sensitive receptors to air pollutants is included in Section 4.3.2.2,

Methodology, under subheading "Impacts of the Environment on a Future Project" (see also Program C-2.2A: Protection of Sensitive Receptors).

General Plan 2040: Construction Community Risk and Hazards

Future construction under the proposed General Plan 2040 would temporarily elevate concentrations of TACs and diesel-$PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. Because the details regarding future construction activities are not known at this time—including phasing of future individual projects, construction duration and phasing, and preliminary construction equipment—construction emissions are evaluated qualitatively in accordance with BAAQMD's plan-level guidance. Subsequent project-specific evaluation of qualifying future development projects would be required to assess potential impacts under BAAQMD's project-level thresholds and mitigate those impacts to acceptable levels. Mitigation Measures to reduce risk may include, but are not limited to, using construction equipment rated as US Environmental Protection Agency Tier 4 Interim for equipment of 50 horsepower or more, or using construction equipment fitted with Level 3 Diesel Particulate Filters for all equipment of 50 horsepower or more. However, construction emissions associated with the proposed General Plan 2040 could exceed BAAQMD's project level and cumulative significance thresholds for community risk and hazards. Therefore, construction-related health risk impacts associated with the proposed General Plan 2040 are considered *significant*.

Impact AIR-3.1: Construction activities associated with potential future development could expose nearby receptors to substantial concentrations of toxic air contaminants.

Mitigation Measure AIR-3.1a: Implement Mitigation Measure AIR-2.1.

Mitigation Measure AIR-3.1b: To ensure sensitive receptors are not exposed to toxic air contaminant emissions during the construction phase for discretionary development projects that are subject to CEQA that exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2: (Land Use Compatibility and Building Standards) be implemented as part of the project approval process:

- New Program: As recommended by the California Air Resources Board, require projects that would result in construction activities within 1,000 feet of residential and other land uses that are sensitive to toxic air contaminants (e.g., hospitals, nursing homes, day care centers), as measured from the property line of the project, to prepare a construction health risk assessment in accordance with policies and procedures of the Office of Environmental Health Hazard Assessment and the BAAQMD CEQA Guidelines that identifies mitigation measures are capable of reducing potential cancer and noncancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0).

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Construction Community Risk and Hazards

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would cause or contribute significantly to elevated pollutant

concentration levels that could expose sensitive receptors. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance with Mitigation: Less than significant.

General Plan 2040: Operational Phase Community Risk and Hazards

Types of land uses that typically generate substantial quantities of TACs and $PM_{2.5}$ include industrial and manufacturing (stationary sources) and warehousing (truck idling) land uses.

Stationary (Permitted) Sources

Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the proposed General Plan 2040 would be expected to release TACs. TAC emissions generated by stationary and point sources of emissions within the SFBAAB are regulated and controlled by BAAQMD. However, emissions of TACs from mobile sources when operating at a property (e.g., truck idling) are regulated by statewide rules and regulations, not by BAAQMD, and have the potential to generate substantial concentrations of air pollutants.

Land uses that would require a permit from BAAQMD for emissions of TACs include chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. Emissions of TACs from stationary sources would be controlled by BAAQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under Regulation 2, New Source Review, as well as Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities. Review under New Source Review ensures that stationary source emissions (permitted sources) would be reduced or mitigated below BAAQMD significance thresholds. Though these sources would incrementally contribute to the proposed General Plan 2040's inventory individually, they would be mitigated to the standards identified above. The proposed Conservation and Climate Change (C) and the Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to air quality. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on air quality by increasing standards and promoting cooperation with outside agencies:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.1: State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.
  - Program C-2.1A: Cooperation with Other Agencies. Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.
- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering,

landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.

- Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
  - Program C-2.6B: Equipment and Generators. Encourage the use of non–gasoline powered leaf blowers and other yard maintenance equipment, as well as clean-powered generators.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.5: Environmental Justice. Ensure that land use and transportation decisions do not create disparate environmental health conditions, such as air pollution and exposure to hazardous materials, for lower income residents and other vulnerable populations. Work to reduce or eliminate such hazards where they currently exist.
  - Program EDI-2.5A: Reducing Exposure to Hazards. As appropriate, utilize conditional use permit requirements for businesses adjacent to residential neighborhoods to reduce resident exposure to noise, odor, smoke, vibration, and other potentially harmful impacts. Work with business owners to encourage responsiveness when these issues arise.
  - Program EDI-2.5B: Reducing Indoor Air Pollution. Support the distribution of bilingual information on indoor air pollution hazards to vulnerable populations, including lower income renters. Respond to complaints about smoke and odors in multi-family projects and facilitate remediation.
  - Program EDI-2.5C: Environmental Hazard Data. Maintain data on environmental hazards, such as soil and groundwater contamination and the vulnerability of the population to such hazards, using sources such as Cal Enviroscreen.

The policies and programs listed above would contribute to minimizing potential health risk impacts to sensitive receptors. Overall, combined with the standards and permitting processes described above, impacts related to permitted stationary sources of TACs are considered *less than significant.*

Nonpermitted Sources

Mobile sources of TACs are not regulated by BAAQMD. The primary mobile source of TACs within the EIR Study Area is truck idling and use of off-road equipment. New warehousing operations could generate substantial DPM emissions from off-road equipment use and truck idling. In addition, some warehousing and industrial facilities may include use of TRUs for cold storage. New land uses in the city that would be permitted under the proposed General Plan 2040 that use trucks, including trucks with TRUs, could generate an increase in DPM that would contribute to cancer and noncancer health risk in the SFBAAB. Additionally, these types of facilities could also generate particulate matter (PM_{10} and $PM_{2.5}$) that may cause an exceedance or contribute to the continuing exceedance of the federal and State AAQS. These new land uses could be near existing sensitive receptors. In addition, trucks would travel on regional transportation routes through the Bay Area, contributing to near-roadway DPM concentrations. As described in Impact Discussion AIR-2, the City requires the project applicants to prepare project-specific

analysis of qualifying project and incorporate project-specific mitigation measures to reduce toxic air contaminants. If the results show that the incremental cancer risk exceeds ten in one million (or the risk thresholds in effect at the time a project is considered), or the appropriate noncancer hazard index exceeds 1.0, or 0.3 μ/m^3 of $PM_{2.5}$; or the thresholds as determined by the BAAQMD at the time a project is considered, the applicant shall be required to mitigate the potential cancer and noncancer risks to an acceptable level. Typical mitigation measures to reduce risk impacts may include but are not limited to:

- Restricting idling on-site beyond Air Toxic Control Measures idling restrictions, as feasible.
- Electrifying warehousing docks.
- Truck Electric Vehicle (EV) Capable trailer spaces.
- Requiring use of newer equipment and/or vehicles.
- Restricting off-site truck travel through the creation of truck routes.

Therefore, without project-specific analysis health risk impacts from nonpermitted sources associated with development of industrial and commercial land uses are considered *significant*.

Impact AIR-3.2. Operational activities associated with potential future development could expose sensitive receptors to substantial toxic air contaminant concentrations from nonpermitted sources.

Mitigation Measure AIR-3.2: To ensure sensitive receptors are not exposed to toxic air contaminant emissions during the operation phase for discretionary development projects that are subject to CEQA which exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the City shall adopt the following General Plan Program to support Policy C-2.2: (Land Use Compatibility and Building Standards) be implemented as part of the project approval process:

- New Program: Require applicants for industrial or warehousing land uses or commercial land uses that would generate substantial diesel truck travel (i.e., 100 diesel trucks per day or 40 or more trucks with diesel-powered transport refrigeration units per day) to contact BAAQMD to determine the appropriate level of operational health risk assessment (HRA) required. If required, the operational HRA shall be prepared in accordance with the Office of Environmental Health Hazard Assessment and BAAQMD requirements and mitigated to an acceptable level.

Significance with Mitigation: Significant and unavoidable. Development allowed by the proposed General Plan 2040 could result in new sources of criteria air pollutant emissions and/or TACs near existing or planned sensitive receptors. Review of development projects by BAAQMD for permitted sources of air toxics (e.g., industrial facilities, dry cleaners, and gasoline dispensing facilities) in addition to proposed General Plan 2040 goals, policies, and programs would ensure that health risks are minimized. Additionally, Mitigation Measure AIR-3.2 would ensure mobile sources of TACs not covered under BAAQMD permits are considered during subsequent project-level review by the City of San Rafael. Individual development projects would be required to achieve the incremental risk thresholds established by BAAQMD, and TAC and $PM_{2.5}$ project-level impacts would be less than significant. However, these projects could contribute to significant cumulative risk in the Bay Area that could affect sensitive populations and disadvantaged communities. As a result, the General Plan Update's contribution to cumulative health risk is considered *significant and unavoidable*.

Downtown Precise Plan: Operational Phase Community Risk and Hazards

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would be expected to release TACs, and applicable land uses would require a permit from BAAQMD for emissions of TACs. Likewise, mobile emissions that are not regulated by BAAQMD are also expected. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *significant and unavoidable.*

Significance with Mitigation: Significant and unavoidable.

General Plan 2040: CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO, called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

TAM's CMP must be consistent with the ABAG/MTC's *Plan Bay Area*, which is updated periodically. An overarching goal of the *Plan Bay Area* is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle VMT and associated GHG emissions reductions. As discussed in Impact Discussion AIR-2 under subheading, "Operational Emissions," the proposed General Plan 2040 includes requiring local planning and development decisions to consider impacts to air quality related to travel demand management, including Policy-2.3: Improving Air Quality Through Land Use and Transportation Choices, which requires the City to recognize the air quality benefits of reducing dependency on gasoline-powered vehicles and implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, and support the shift to electric and cleaner-fuel vehicles. This policy is supported by Program C-2.3A: Air Pollution Reduction Measures, which requires the City to implement air pollution reduction measures as recommended by BAAQMD's Clean Air Plan and supporting documents to address local sources of air pollution in community planning. Additional goals, polices, and programs are identified in the Mobility (M) Element as follows:

Goal M-3: Cleaner Transportation. Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.

- Policy M-3.3: Transportation Demand Management. Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, work schedules, pedestrian and bicycle

improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.

- Program M-3.3A: Develop TDM Program Guidelines. Develop TDM Program Guidelines – or work in partnership with other local governments to develop Guidelines-- than can be used to mitigate potential VMT increases in new development and encourage reductions in existing development.
- Program M-3.3B: Support for TDM. Work cooperatively with governmental agencies, non- profits, businesses, institutions, schools, and neighborhoods to provide and support TDM programs.
- Program M-3.3C: City TDM Program. Implement a TDM program for City employees, potentially in partnership with other local governments, public agencies, and transit providers. Promote the program as a model for other employers.
- Program M-3.3D: Shifting Peak Hour Trips. Support efforts to limit traffic congestion by shifting peak hour trips to non-peak hour, modifying school hours to stagger start and end times, and encouraging flexible work schedules.

Overall, these components of the proposed General Plan 2040 would be consistent with the overall goals of the *Plan Bay Area*. Additionally, the proposed General Plan 2040 would not hinder the capital improvements outlined in the CMP. Thus, the proposed General Plan 2040 would not conflict with TAM's CMP. Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact.[37] Based on the transportation analysis conducted as part of this environmental analysis, the highest increase in traffic associated with proposed General Plan 2040 would be 6,343 daily trips at Mission Avenue from Lincoln Avenue to Grand Avenue. There are no locations where traffic volumes would exceed the BAAQMD screening criteria of 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited.[38] Therefore, overall, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the city and vicinity. Localized air quality impacts related to mobile-source emissions would therefore be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: CO Hotspots

Like development in the remainder of the city, potential future development in the Downtown Precise Plan Area could have areas of vehicle congestion that have the potential to create pockets of CO, called hotspots. As described above, a maximum increase of 6,343 daily trips would occur on Mission Avenue from Lincoln Avenue to Grand Avenue, which is partially in the Downtown Precise Plan Area. This would not increase traffic volumes at affected intersections by more than BAAQMD screening criteria of 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited.[39] The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the

[37] Bay Area Air Quality Management District, 2017 (Revised). *CEQA Air Quality Guidelines*.
[38] Based on information provided by Fehr & Peers.
[39] Based on information provided by Fehr & Peers.

proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

AIR-4 Implementation of the proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The following discusses potential operation- and construction-related odor impacts associated with implementation of the proposed General Plan 2040 and the Downtown Precise Plan.

General Plan 2040: Operation-Related Odors

Potential impacts could occur if new sources of nuisance odors are placed near sensitive receptors. Table 4.3-12 identifies screening distances from potential sources of objectionable odors within the SFBAAB. Odors from these types of land uses are regulated under BAAQMD Regulation 7, Odorous Substances.[40]

TABLE 4.3-12 BAAQMD ODOR SCREENING DISTANCES

Land Use/Type of Operation	Screening Distance
Wastewater Treatment Plan	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plan	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/ Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles

Source: Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, Table 3-3, Odor Screening Distances, and associated Appendix D of these Guidelines.

[40] It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors since they typically do not generate significant odors that affect a substantial number of people. Larger restaurants that employ five or more people are subject to BAAQMD Regulation 7, Odorous Substances.

While not all sources in Table 4.3-12 are found in San Rafael (e.g., rendering plants, confined animal facilities), commercial and industrial areas in the city have the potential to include land uses that generate nuisance odors. Buildout permitted under the proposed General Plan 2040 could include new sources of odors, such as composting, green waste, and recycling operations; food processing; and painting/coating operations, because these are types of uses in the commercial and/or industrial areas in the city. Future environmental review could be required for industrial projects listed in Table 4.3-12 to ensure that sensitive land uses are not exposed to objectionable odors. BAAQMD Regulation 7, Odorous Substances, requires abatement of any nuisance generating an odor complaint.[41] Facilities listed in Table 4.3-12 would need to consider measures to reduce odors as part of their project approval process, which could include CEQA review.

The proposed Land Use (LU), Conservation and Climate Change (C), and Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to air quality from odors. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on odors:

Goal LU-2: A Complete Community. San Rafael is a complete community, with balanced and diverse land uses.

- Policy LU-2.13: Odor Impacts. Consider odor impacts when evaluating land uses and development projects near wastewater treatment plants, treatment plant expansion projects, waste transfer stations, and other odor potential sources.
  - Program LU-2.13A: Evaluation of Odor Impacts. Evaluate odor impacts as part of development review.

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.2: Land Use Compatibility and Building Standards. Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.
  - Program C-2.2A: Protection of Sensitive Receptors. Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of US-101 or I-580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.

[41] Typical abatement includes passing air through a drying agent followed by two successive beds of activated carbon to render air odor free.

- Program C-2.2B: New Sources of Air Pollution. Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.5: Environmental Justice. Ensure that land use and transportation decisions do not create disparate environmental health conditions, such as air pollution and exposure to hazardous materials, for lower income residents and other vulnerable populations. Work to reduce or eliminate such hazards where they currently exist.
  - Program EDI-2.5A: Reducing Exposure to Hazards. As appropriate, utilize conditional use permit requirements for businesses adjacent to residential neighborhoods to reduce resident exposure to noise, odor, smoke, vibration, and other potentially harmful impacts. Work with business owners to encourage responsiveness when these issues arise.
  - Program EDI-2.5B: Reducing Indoor Air Pollution. Support the distribution of bilingual information on indoor air pollution hazards to vulnerable populations, including lower income renters. Respond to complaints about smoke and odors in multi-family projects and facilitate remediation.

The proposed General Plan 2040 would also accommodate future residential, retail, and commercial development. These uses would not generate substantial odors that would affect a substantial number of people. During operation, residences and restaurants could generate odors from cooking. However, odors from cooking are not substantial enough to be considered nuisance odors that would affect a substantial number of people. Furthermore, nuisance odors are regulated under BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds.[42] In addition, odors are regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance.

Review of projects using BAAQMD's odor screening distances during future CEQA review, implementation of the policies and programs above, and compliance with BAAQMD Regulation 7 would ensure that odor impacts are minimized to *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: Operation-Related Odors

Like potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would permit uses that could generate odors. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce air pollutants; therefore, the impacts and mitigation described for the proposed General Plan 2040 would

[42] It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors since they typically do not generate significant odors that affect a substantial number of people. Larger restaurants that employ five or more people are subject to BAAQMD Regulation 7, Odorous Substances.

also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

General Plan 2040: Construction-Related Odors

During construction activities of future developments in the city, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: Construction-Related Odors

As with potential future development in the remainder of the city, potential future development in the Downtown Precise Plan could generate temporary and intermittent odors from construction. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

AIR-5 Implementation of the proposed project could cumulatively contribute to air quality impacts in the San Francisco Bay Area Air Basin.

The cumulative area of analysis is the SFBAAB, which includes the EIR Study Area. As identified in Section 4.3.1*,* Environmental Setting, California is divided into air basins for the purpose of managing the air resources of the state on a regional basis based on meteorological and geographic conditions. Similar to GHG emissions impacts, air quality impacts are regional in nature because no single project generates enough emissions that would cause an air basin to be designated a nonattainment area. Therefore, the impacts previously discussed are evaluated in the cumulative context and no additional cumulative analysis is needed.

In summary, implementation of Mitigation Measures AIR-2.1, AIR-3.1a, and AIR-3.1b would reduce construction level impacts to a less than significant level, and Mitigation Measures AIR-2.2 and AIR-3.2 would reduce project-level impacts on an individual basis; however, cumulative impacts are considered *significant and unavoidable* for criteria air pollutants and air toxics during the operational phases as described above.

Significance with Mitigation: Significant and unavoidable. Criteria air pollutant emissions generated by land uses within the proposed project could exceed the BAAQMD thresholds (see Impact AIR-2). Air quality impacts identified in Impact Discussion AIR-2 constitute the proposed project's contribution to cumulative air quality impacts in the SFBAAB. Mitigation Measures AIR-2.1 through AIR-3.2, identified

previously to reduce project-related emissions, would reduce impacts to the extent feasible. Due to the programmatic nature of the proposed project, no additional mitigation measures are available. Air pollutant emissions associated with the proposed project would result in a cumulatively considerable contribution to air quality impacts and impacts would be *significant and unavoidable*.

4.4 BIOLOGICAL RESOURCES

This chapter describes existing biological resources within the Environmental Impact Report (EIR) Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed project. A summary of the relevant regulatory framework and existing conditions is followed by an impact discussion of the proposed project and cumulative impacts.

This chapter is based on the *San Rafael General Plan 2040 & Downtown Precise Plan Biological and Wetland Resources Background Report* (Biological Background Report) prepared by Environmental Collaborative in January 2020. The Biological Background Report is attached to this Draft EIR as Appendix E, Biological Resources Data.

4.4.1 ENVIRONMENTAL SETTING

4.4.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (FESA) and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section 7 or Section 10 of the FESA. FESA defines "take" as "*harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct*." Title 50, Wildlife and Fisheries, Part 17, Endangered and Threatened Wildlife and Plants, Section 17.3, Definitions, of the Code of Federal Regulations, defines the term "harass" as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering. Furthermore, Section 17.3 defines "harm" as an act that either kills or injures a listed species. By definition, "harm" includes habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering.

Section 10(a) of the FESA establishes a process for obtaining an incidental take permit that authorizes nonfederal entities to incidentally take federally listed wildlife or fish. Incidental take is defined by FESA as take that is *"incidental to, and not the purpose of, the carrying out of an otherwise lawful activity*." Preparation of a habitat conservation plan (HCP) is required for all Section 10(a) permit applications. The USFWS and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) have joint authority under the FESA for administering the incidental take program. NOAA Fisheries Service has jurisdiction over anadromous fish species and USFWS has jurisdiction over all other fish and wildlife species.

Section 7 of the FESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the FESA, or result in the

destruction or adverse modification of its habitat. Federal agencies are also required to minimize impacts to all listed species resulting from their actions, including issuance of permits or funding. Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat (FESA requires that the USFWS identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered). This consultation results in a Biological Opinion prepared by the USFWS stating whether implementation of the HCP will result in jeopardy to any HCP Covered Species or will adversely modify critical habitat and the measures necessary to avoid or minimize effects to listed species.

Although federally listed animals are legally protected from harm no matter where they occur, Section 9 of the FESA provides protection for endangered plants by prohibiting the malicious destruction on federal land and other "take" that violates State law. Protection for plants not living on federal lands is provided by the California Endangered Species Act (CESA).

Clean Water Act

The United States Army Corps of Engineers (USACE) is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the United States (U.S.). These waters, and their lateral limit, include streams that are tributaries to navigable waters and their adjacent wetlands.[1] The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the ordinary high-water mark[2] or the limit of adjacent wetlands.[3] Any permanent extension of the limits of an existing water of the U.S., whether natural or human-made, results in a similar extension of USACE jurisdiction.

Waters of the U.S. fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses generally lacking plant cover, such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands are aquatic habitats that support hydrophytic wetland plants and include marshes, wet meadows, seeps, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal ponds, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the U.S.

Waters and wetlands that cannot trace a continuous hydrologic connection to a navigable water of the U.S. are not tributary to waters of the U.S. These are termed "isolated wetlands." Isolated wetlands are jurisdictional when their destruction or degradation can affect interstate or foreign commerce.[4] The USACE may or may not take jurisdiction over isolated wetlands depending on the specific circumstances.

In general, a project proponent must obtain a Section 404 permit from the USACE before placing fill or grading in wetlands or other waters of the U.S. Prior to issuing the permit, the USACE is required to consult with the USFWS under Section 7 of the FESA if the project may affect federally listed species.

[1] Code of Federal Regulations, Title 33, Navigation and Navigable Waters, Part 328.3(a).
[2] Code of Federal Regulations, Title 33, Navigation and Navigable Waters, Part 328.3(e).
[3] Code of Federal Regulations, Title 33, Navigation and Navigable Waters, Part 328.3(b).
[4] Code of Federal Regulations, Title 33, Navigation and Navigable Waters, Part 328.3(a).

All USACE permits require water quality certification under Section 401 of the Clean Water Act. In the San Francisco Bay Area, this regulatory program is administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Project proponents who propose to fill wetlands or other waters of the U.S. must apply for water quality certification from the San Francisco Bay RWQCB. The San Francisco Bay RWQCB has adopted a policy requiring mitigation for any loss of wetland, streambed, or other jurisdictional area.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act. In December 2017, the Department of the Interior (DOI) issued a memorandum reversing the incidental take interpretation of the MBTA. Under the latest determination of the DOI, the take of a migratory bird or its active nest (i.e., with eggs or young) that is incidental to a lawful activity does not violate the MBTA. However, this opinion from the DOI is only the latest interpretation. This legal opinion is contrary to the long-standing interpretation for over 40 years that held the MBTA strictly prohibits the intentional or incidental killing of birds or destruction of their nests when in active use.

State Regulations

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under CESA.[5] CESA is similar to the FESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of the CEQA Guidelines, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" rare or endangered species.

[5] California Fish and Game Code Section 2050 *et seq.*

California Fish and Game Code

The CDFW is responsible for enforcing the California Fish and Game Code (CFGC), which contains several protections from "take" for a variety of species. The CDFW also protects streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601 to 1606 of the CFGC. The CFGC stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the CDFW, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

The CFGC also lists animal species designated as Fully Protected or Protected, which may not be taken or possessed at any time. The CDFW does not issue licenses or permits for take of these species except for necessary scientific research, habitat restoration/species recovery actions, or live capture and relocation pursuant to a permit for the protection of livestock. Fully protected species are listed in CFGC Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42, respectively.

Several provisions in the CFGC provide for the protection of birds and bird nests in active use. Unless the CFGC or its implementing regulations provide otherwise, under California law it is unlawful to:

- Take a bird, mammal, fish, reptile, or amphibian.
- Take, possess, or needlessly destroy the nest or eggs of any bird.
- Take, possess, or destroy any bird of prey in the orders Strigiformes (owls) and Falconiformes (such as falcons, hawks and eagles) or the nests or eggs of such bird.
- Take or possess any of the thirteen fully protected bird species listed in CFGC Section 3511.
- Take any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird).
- Take or possess any migratory non-game bird as designated in the MBTA or any part of such bird, except as provided by rules or regulations adopted by the DOI under the MBTA.
- Take, import, export, possess, purchase, or sell any bird (or products of a bird), listed as an endangered or threatened species under the CESA unless the person or entity possesses an Incidental Take Permit or equivalent authorization from CDFW.

Non-native species, including European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and rock pigeon (*Columba livia*), are not afforded any protection under the MBTA or CFGC.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act,[6] the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. The RWQCB asserts jurisdiction over isolated waters and wetlands, as well as waters and wetlands that are regulated by the USACE. Therefore, even if a

[6] California Water Code Sections 13000 through 14920.

project does not require a federal permit, it still requires review and approval by the RWQCB. When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of waste discharge requirements into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction best management practices.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the California Native Plant Protection Act, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under the CESA but rather under CEQA.

The California Native Plant Society (CNPS) is a non-governmental conservation organization that has developed a list of plants of special concern in California. The following explains the designations for each plant species:[7]

- **Rank 1A.** Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
- **Rank 1B.** Plants Rare, Threatened, or Endangered in California and Elsewhere
- **Rank 2A.** Plants Presumed Extirpated in California, But Common Elsewhere
- **Rank 2B.** Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
- **Rank 3.** Plants About Which More Information is Needed; A Review List
- **Rank 4.** Plants of Limited Distribution; A Watch List

California Natural Communities

Sensitive natural communities are natural community types considered to be rare or of a "high inventory priority" by the CDFW. Although sensitive natural communities have no legal protective status under FESA or CESA, they are provided some level of consideration under CEQA. Appendix G of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The level of significance of a project's impact on any particular sensitive natural community will depend on that natural community's relative abundance and rarity.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland, and/or other sensitive natural community would normally be considered

[7] California Native Plant Society, 2020, CNPS Rare Plant Ranks, https://www.cnps.org/rare-plants/cnps-rare-plant-ranks, accessed on November 25, 2020.

to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality and degree of past disturbance, and the anticipated impacts to the specific community type.

Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act[8] of 2001 acknowledges the importance of private land stewardship to the conservation of the state's valued oak woodlands. This act established the California Oak Woodlands Conservation Program, which aims to conserve oak woodlands existing in the state's working landscapes by providing education and incentives to private landowners. The program provides technical and financial incentives to private landowners to protect and promote biologically functional oak woodlands.

Regional Regulations

McAteer-Petris Act

In 1969, the McAteer-Petris Act designated the San Francisco Bay Conservation and Development Commission (BCDC) as the agency responsible for the protection of the San Francisco Bay. The two primary goals of the BCDC are (1) to prevent the unnecessary filling of San Francisco Bay, and (2) to increase public access to and along the Bay shoreline. BCDC fulfills its mission through the implementation of the *San Francisco Bay Plan* (Bay Plan), an enforceable plan that guides the future protection and use of San Francisco Bay and its shoreline. The Bay Plan includes a range of policies on public access, water quality, fill, and project design, and designates shoreline areas that should be reserved for water-related purposes like ports, industry, and public recreation, airports, and wildlife areas.

As a permitting authority along the San Francisco Bay shoreline, BCDC is responsible for granting or denying permits for any proposed fill, extraction of materials, or change in use of any water, land, or structure within 100 feet of the Bay shoreline. Projects in BCDC jurisdiction that involve Bay fill must be consistent with the Bay Plan policies on the safety of fills and shoreline protection.

San Francisco Bay Basin Water Quality Control Plan

The San Francisco Bay RWQCB adopted a Water Quality Control Plan for the San Francisco Bay Basin (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan, which includes wetlands in and near the EIR Study Area. It is the RWQCB's master water quality control planning document. The most recent amendments were incorporated into the Basin Plan as of May 2017.[9]

[8] California Fish and Game Code Section 1360 et seq.

[9] San Francisco Bay Regional Water Quality Control Board, 2017, *San Francisco Bay Basin Water Quality Control Plan (Basin Plan),* https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf, accessed on March 31, 2020.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael General Plan 2020 goals, policies, and programs that are relevant to biological resources are primarily in the Conservation Element and Air and Water Quality Element. As part of the proposed project, some existing General Plan policies would be amended, substantially changed, or new policies would be added. The Conservation Element and Air and Water Quality Element are being combined. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.4.3, Impact Discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives pertaining to biological resources. The SRMC is organized by title, chapter, and section. Most provisions related to biological impacts are included in Title 11, Public Works, Title 14, Zoning, and Title 17, Waters and Waterways, as follows:

- Chapter 11.12, Trees. This chapter places the authority to regulate trees along public streets, sidewalks, and walkways within the city, to the Public Works Department. Tree trimming, planting, and removal must be approved through a permit process by the Public Works Department. This chapter also provides regulations for protection of trees during construction activities.
- Chapter 11.30, Watercourses. This chapter ensures that watercourses within the city maintain a few and unobstructed flow of water, including the removal of debris, natural growth, and other materials. Any person wishing to construct or repair any structure within 15 feet of the bank of a watercourse must first obtain a permit from the Public Works Department, to ensure that the free flow of water is not disrupted.
- Chapter 14.13, Wetland Overlay District. The purpose of the Wetland Overlay District is to preserve and enhance the remaining wetlands within the city of San Rafael and encourage uses that are compatible with their natural functions. This chapter also encourages the restoration of wetland sites, prevent property loss from flooding events, and contribute to improved water quality. All development on or near wetlands must have the USACE make a jurisdictional determination delineating wetland boundary and obtain federal and State permits prior to approval of a use permit.
- Chapter 14.16, Site and Use Regulations. This chapter introduces development standards applicable to several districts, intended to ensure that new uses and development will contribute to and be harmonious with existing development, will reduce hazards to the public, and will be consistent with General Plan policies. Such sites include conservation areas, creeks, and other watercourses. Section 14.16.050, Conservation Areas- Development Potential, dictates that open space conservation areas identified in the General Plan are preserved through development review and that they have no development potential. Section 14.16.080, Creeks and Watercourses. This section establishes setbacks from creeks, drainageways, and the San Rafael Canal.
- Chapter 14.25, Environmental and Design Review Permits. This chapter outlines how the environmental and design review permits implement general plan policies which guide the location,

function, and appearance of development in such a way that protects the natural environment and assures the development is harmonious with existing development and the natural environment. Section 14.25.050, Review Criteria, outlines the criteria by which environmental and design review is conducted, including consistency with plans, building materials, site design, utilities, and landscaping.

- Chapter 17.10, Dumping, Dredging and Construction within Tidal Waterways. The purpose of this chapter is to minimize the disturbance and provide standards and procedures for the filling, excavation, and construction within the tidal waterways. This chapter applies to all portions of San Pablo Bay and San Rafael Bay, tidelands, shorelines, waterways, canals, beaches or salt marshes within the city, which are below an elevation of 7.5 feet mean lower low-water datum and to contiguous land between that elevation line and either a point 100 feet inland or the nearest publicly maintained road, whichever is closer. Fill, excavation, and construction activities must first receive a Tideland Permit through the Department of Public Works, prior to any activities.

4.4.1.2 EXISTING CONDITIONS

This section provides a summary of the existing biological conditions in the EIR Study Area, which includes habitat types, special-status plant and animal species, sensitive habitats, and wildlife corridors. A detailed description of these existing conditions, including maps, is provided in the Biological Background Report, included in this Draft EIR as Appendix E, Biological Resources Data.

Habitat Types

The EIR Study Area is largely developed, with urban uses occupying most of the valley floors and former marshlands that once bordered the San Francisco Bay. The valley floors are bordered by the remaining undeveloped woodlands, forests, grasslands, scrub and chaparral of the surrounding hillsides and ridges, traversed by bands of riparian woodland along the remaining unchannelized creeks and drainages. Marshlands remain along the shoreline of San Pablo Bay and the lower reaches of San Rafael, Gallinas, and Miller Creeks.

Vegetation cover types within the EIR Study Area based on the Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) geographic information system (GIS) mapping data of the United States Department of Agriculture (USDA) Forest Service are listed in Table 4.4-1. A detailed description of each vegetation type is provided in the Biological Background Report and the extent of urbanization and various vegetative cover types in the EIR Study Area is shown on Figure 4.4-1.

TABLE 4.4-1 ESTIMATED VEGETATION COVER IN THE EIR STUDY AREA

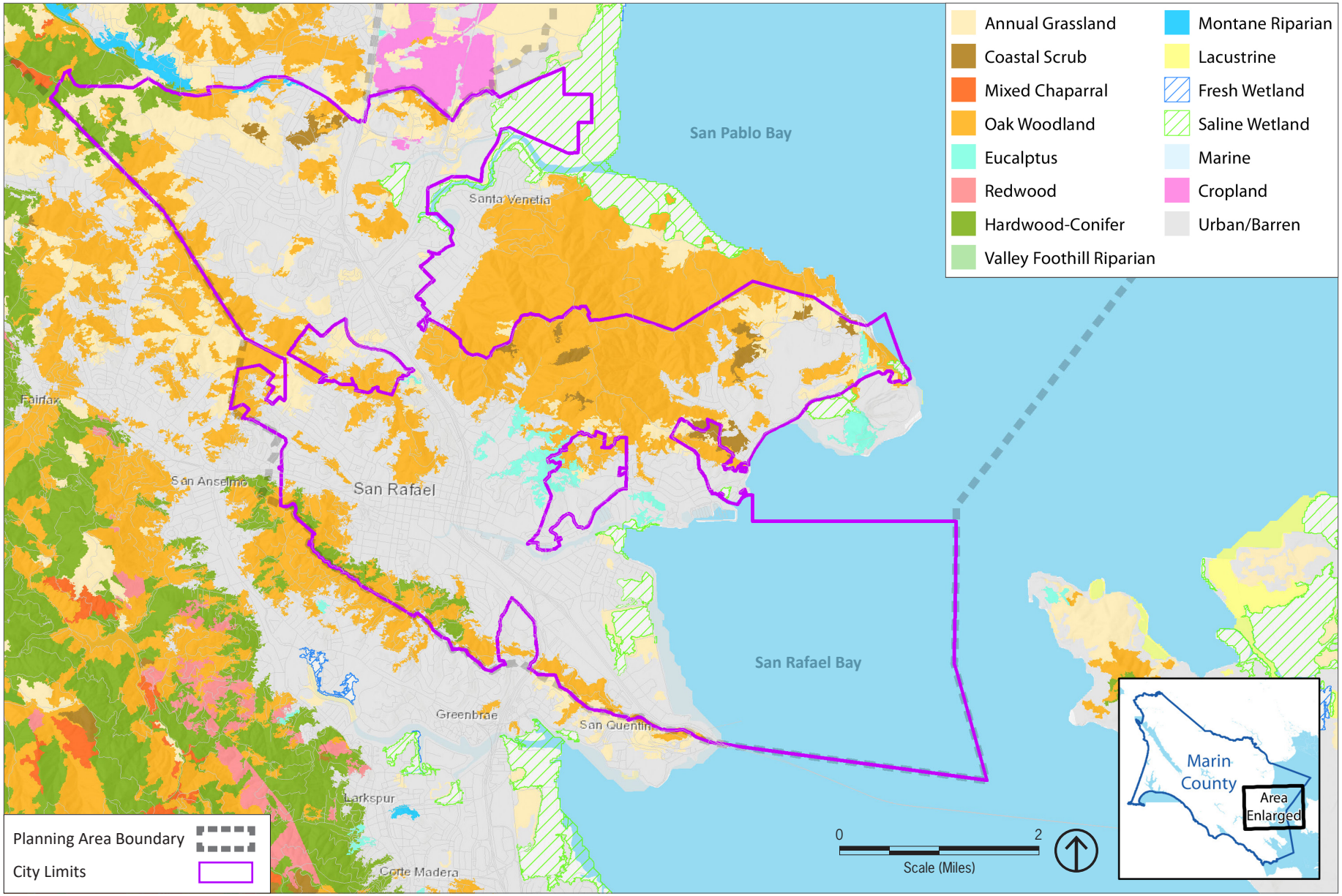
Vegetation Cover	EIR Study Area (Acres)	EIR Study Areas (Percent of Total)
Urban Development and Ornamental Landscaping	*9,779*	*49%*
Urban/Barren	7,548	38%
Eucalyptus	231	1%
Forest and Woodlands	*7,598*	*38%*
Oak woodland	5,302	27%
Hardwood-conifer forest	2,296	12%
Grasslands	*2,773*	*14%*
Annual grassland	2,773	14%
Riparian Woodland and Scrub	*202*	*1%*
Coastal scrub	196	1%
Riparian woodland	107	1%
Freshwater and Brackish Marsh	*5*	*0.2%*
Freshwater marsh	5	0.2%
Coastal Salt Marsh, Mudflats, and Open Water	*1,197.5*	*6%*
Saline marsh	1,197	6%
Lacustrine	0.5	0%
Other Land Types	*273*	*1%*
Mixed chaparral	233	1%
Cropland	40	0.2%
Total	19,928.5	

Sources: CALVEG GIS data, USDA Forest Service, 2019. Environmental Collaborative, January 2020, *San Rafael General Plan 2040 & Downtown Precise Plan Biological and Wetland Resources Background Report.*

Although native vegetation within much of the EIR Study Area has been substantially altered, the presence of large areas of undeveloped lands to the west, the remaining marshlands and open water habitat along the shoreline of the San Pablo Bay and San Rafael Bay, and the freshwater marsh and riparian habitat along unchannelized creeks and drainages, contribute to a relatively diverse assemblage of resident and migrant wildlife species. Each habitat differs in its relative value to specific species and can be characterized by both vegetation and associated animal species that are dependent on that habitat, although some wildlife species may utilize more than one habitat type.

Special-Status Species

Special-status species are defined as plants and animals legally protected under the State and/or federal Endangered Species Acts (FESA and CESA) or other regulations, as discussed in Section 4.4.1.1, Regulatory Framework. Special-status species also include species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or den locations, communal roosts, and other essential habitat. Species with legal protection under FESA and CESA often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species.



SOURCES: EVEG from USFS showing CALVEG CWHR Type (aggregated); accessed on April 23, 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/19/2019.

Figure 4.4-1
Vegetative Cover

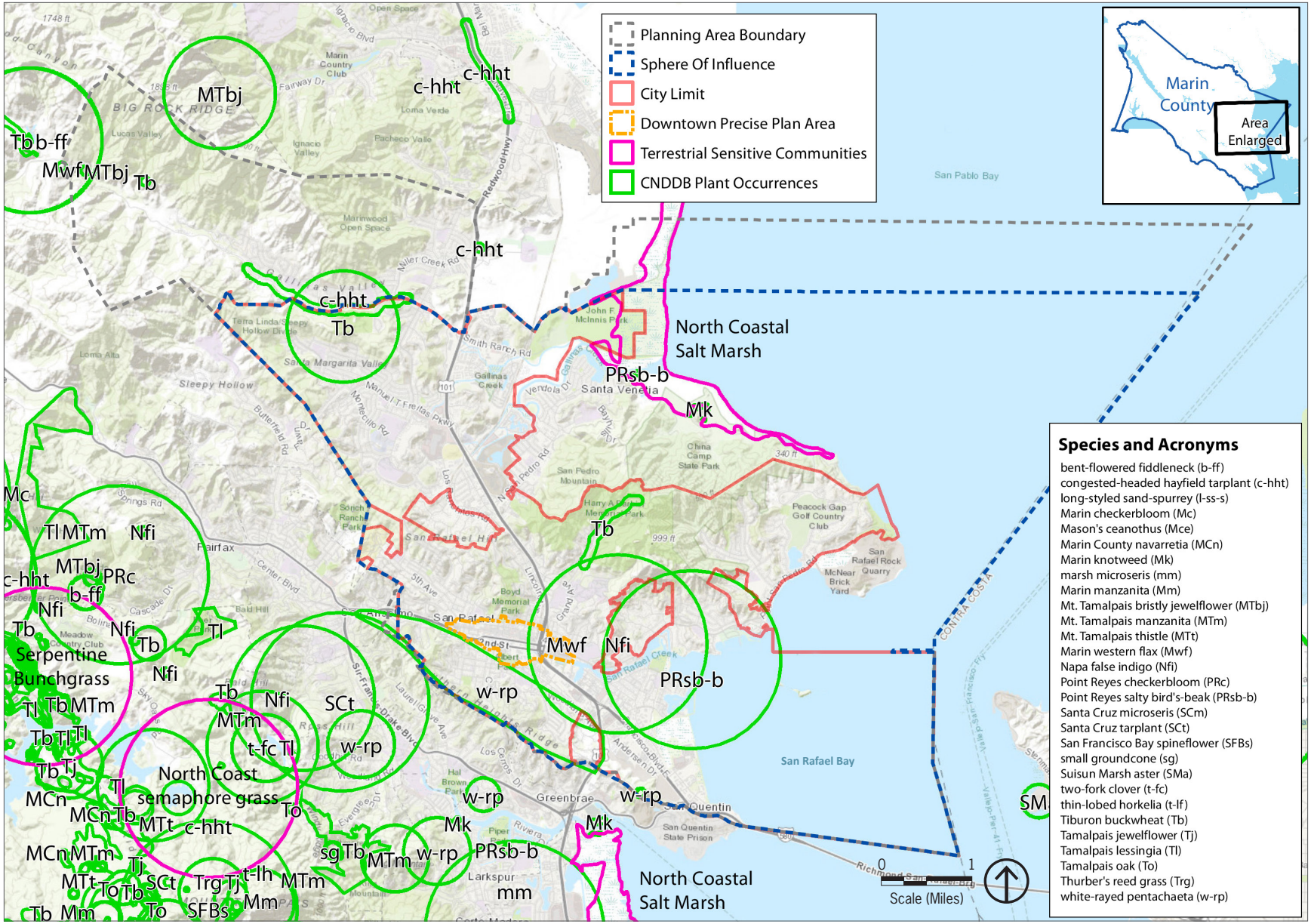
The California Natural Diversity Database (CNDDB) is California's primary inventory on the distribution of special-status species, which is maintained by the Biogeographic Data Branch of the CDFW. The CNDDB inventory provides the most comprehensive statewide information on the location and distribution of special-status species and sensitive natural communities. Occurrence data is obtained from a variety of scientific, academic, and professional organizations, and private consulting firms and is entered into the inventory as expeditiously as possible. The occurrence of a species of concern in a particular region is an indication that an additional population may occur at another location if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question, it only indicates that no data has been entered into the CNDDB inventory. Detailed field surveys are generally required to provide a conclusive determination on presence or absence of sensitive resources from a particular location, where there is evidence of potential occurrence.

Special-Status Plants

Review of the CNDDB and CNPS occurrence records indicates a total of 43 special-status plant species reported within or in the vicinity of the EIR Study Area. Table 4.4-2 includes the typical habitat characteristics, normal flowering season, and potential for occurrence in the EIR Study Area.

The CNDDB records show that nine of these special-status plant species have reported occurrences extend over portions of the EIR Study Area. These include the bent-flowered fiddleneck (*Amsinckia lunaris*), congested-headed hayfield tarplant (*Hemizonia congesta* ssp*. congesta*), Marin knotweed (*Polygonum marinense*), Mt. Tamalpais bristly jewelflower (*Streptanthus glandulosus* ssp*. pulchellus*), Marin western flax (*Hesperolinon congestum*), Napa false indigo (*Amorpha californica* var*. napensis*), Point Reyes salty bird's-beak (*Chloropyron maritimum* ssp*. palustre*), Tiburon buckwheat (*Eriogonum luteolum* var*. caninum*), and white-rayed pentachaeta (*Pentachaeta bellidiflora*). It is assumed that white-rayed pentachaeta is extirpated from the EIR Study Area as a result of development in areas of grassland and woodland habitats that once supported the species and displacement by non-native grasses and other invasive species. The occurrence of Marin knotweed from China Camp is from a much more specific location observed in 2006, and this species is still assumed to be present. Details on the location of most of the other special-status plant species are based on general occurrence records that are decades old, and their presence in the EIR Study Area today is uncertain. See Figure 4.4-2.

Existing development limits the likelihood of continued occurrences of any populations of special-status plant species on the valley floors of the EIR Study Area, with the exception of brackish and saltmarsh associated species that could occur along the shorelines of the San Francisco Bay, such as Point Reyes salty bird's-beak. Many of the special-status plant species occurrences in the protected open space areas and undeveloped lands at the fringe of the EIR Study Area most like remain today, but are vulnerable to changes such as fire, competition with invasive species, and other threats. There remains a possibility that additional populations of one or more species occurs on the remaining undeveloped lands and the remaining coastal marshlands in the EIR Study Area.



SOURCES: California Natural Diversity Database accessed August 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Figure 4.4-2

Special-Status Plant Species and Sensitive Natural Communities

TABLE 4.4-2 SPECIAL-STATUS PLANT SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CNPS Rank	General Habitat	Blooming Period	Potential for Occurrence in EIR Study Area
Amorpha californica var. *napensis*	Napa false indigo	None	None	1B.2	Openings in broadleafed upland forest, chaparral, cismontane woodland.	April-July	Moderate. CNDDB general occurrence from south San Rafael.
Amsinckia lunaris	Bent-flowered fiddleneck	None	None	1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland.	March-June	Moderate. CNDDB general occurrence west end of Lucas Valley.
Arctostaphylos montana ssp. *montana*	Mt. Tamalpais manzanita	None	None	1B.3	Chaparral, valley and foothill grassland/serpentinite, rocky.	February-April	Low. No known occurrences reported by CNDDB in EIR Study Area.
Arctostaphylos virgate	Marin manzanita	None	None	1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, North Coast coniferous forest on sandstone, or granitic substrates.	January-March	Low. No known occurrences reported by CNDDB in EIR Study Area.
Calochortus tiburonensis	Tiburon mariposa-lily	Threatened	Threatened	1B.1	Open, rocky slopes in serpentine grassland.	March-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Calamagrostis crassiglumis	Thurber's reed grass	None	None	2B.1	Coastal scrub (mesic); marshes and swamps (freshwater).	May-August	Low. No known occurrences reported by CNDDB in EIR Study Area.
Castilleja affinis ssp. *neglecta*	Tiburon paintbrush	Threatened	Threatened	1B.2	Rocky serpentine sites in grasslands.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Ceanothus masonii	Mason's ceanothus	None	None	1B.2	Chaparral with serpentine affinity.	March-April	Low. No known occurrences reported by CNDDB in EIR Study Area.
Chloropyron maritimum ssp. *Palustre*	Point Reyes salty bird's-beak	None	None	1B.2	Marshes and swamps (coastal salt), usually in coastal salt marsh with *Salicornia, Distichlis, Jaumea and Spartina*; 0-10 meters.	June-October	Moderate. CNDDB general occurrence from San Rafael and Santa Venetia shoreline of EIR Study Area.
Chorizanthe cuspidata var. *cuspidate*	San Francisco Bay spineflower	None	None	1B.2	Sandy soil on terraces and slopes in coastal bluff, coastal dunes, coastal scrub, and coastal prairie habitat.	April- July August rarely	Low. No known occurrences reported by CNDDB in EIR Study Area.
Cirsium hydrophilum var. *vaseyi*	Mt. Tamalpais thistle	None	None	1B.2	Serpentine seeps and streams in chaparral and woodland.	May-August	Low. No known occurrences reported by CNDDB in EIR Study Area.

TABLE 4.4-2 SPECIAL-STATUS PLANT SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CNPS Rank	General Habitat	Blooming Period	Potential for Occurrence in EIR Study Area
Dirca occidentalis	Western leatherwood	None	None	1B.2	Broadleafed upland forest; closed-cone coniferous forest; chaparral; cismontane woodland, North Coast coniferous forest; riparian forest; riparian woodland.	January-April	Low. No known occurrences reported by CNDDB in EIR Study Area.
Eriogonum luteolum var. *caninum*	Tiburon buckwheat	None	None	1B.2	Serpentine soils; sandy to gravelly sites.	May-September	Moderate. CNDDB general occurrence from Santa Margarita Valley.
Fissidens pauperculus	Minute pocket moss	None	None	1B.2	Moss growing on damp soil in coniferous forests along the coast; in dry streambeds and stream banks.		Low. No known occurrences reported by CNDDB in EIR Study Area
Fritillaria lanceolate var. *tristulis*	Marin checker lily	None	None	1B.1	Coastal scrub, valley and foothill grassland, and coastal prairie; often on serpentine; various soils reported though usually clay.	February-April	Low. No known occurrences reported by CNDDB in EIR Study Area.
Fritillaria liliacea	Fragrant fritillary	None	None	1B.2	Often serpentinite; cismontane woodland, coastal prairie, coastal scrub; valley and foothill grassland.	February-April	Low. No known occurrences reported by CNDDB in EIR Study Area.
Gilia millefoliata	Dark-eyed gilia	None	None	1B.2	Coastal dunes.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Helianthella castanea	Diablo helianthella	None	None	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland.	March-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Hemizonia congesta ssp. *congesta*	Congested-headed hayfield tarplant	None	None	1B.2	Valley and foothill grassland, sometimes roadsides.	April-November	Moderate. CNDDB general occurrence from Santa Margarita Valley.
Hesperolinon congestum	Marin western flax	Threatened	Threatened	1B.1	Serpentine barrens and serpentine grassland and chaparral.	April-July	Moderate. CNDDB general occurrence from San Rafael and west end of Lucas Valley.
Holocarpha macradenia	Santa Cruz tarplant	Threatened	Endangered	1B.1	Light, sandy soil or sandy clay, often with non-natives in coastal prairie and grasslands.	June-October	Low. No known occurrences reported by CNDDB in EIR Study Area.
Horkelia tenuiloba	Thin-lobed horkelia	None	None	1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland on sandy soils, mesic openings.	May-July	Low. No known occurrences reported by CNDDB in EIR Study Area.
Kopsiopsis hookeri	Small groundcone	None	None	2B.3	Open woods, shrubby places, generally on *Gaultheria shallon*.	April-August	Low. No known occurrences reported by CNDDB in EIR Study Area.

TABLE 4.4-2 SPECIAL-STATUS PLANT SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CNPS Rank	General Habitat	Blooming Period	Potential for Occurrence in EIR Study Area
Lessingia micradenia var. *micradenia*	Tamalpais lessingia	None	None	1B.2	Usually on serpentine, in serpentine grassland or chaparral, often on roadsides.	(June rarely) July-October	Low. No known occurrences reported by CNDDB in EIR Study Area.
Microseris paludosa	Marsh microseris	None	None	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Navarretia rosulata	Marin County navarretia	None	None	1B.2	Closed-cone coniferous forest and chaparral on serpentinite.	May-July	Low. No known occurrences reported by CNDDB in EIR Study Area.
Pentachaeta bellidiflora	White-rayed pentachaeta	Endangered	Endangered	1B.1	Cismontane woodland, valley and foothill grassland on open, dry rocky slopes and grassy areas, often on serpentinite.	March-May	Moderate. CNDDB general occurrences from south San Rafael.
Plagiobothrys glaber	Hairless popcorn-flower	None	None	1A	Coastal salt marshes, alkaline meadows, and seeps.	March-May	Low. No known occurrences reported by CNDDB in EIR Study Area.
Pleuropogon hooverianus	North Coast semaphore grass	None	None	1B.1	Wet grassy, usually shady areas, sometimes in freshwater marsh, associated with forest environments.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Polypogon marinense	Marin knotweed	None	None	3.1	Coastal salt marshes, brackish water marsh, and riparian wetlands.	May-August	Moderate. CNDDB occurrence reported Santa Venetia shoreline.
Quercus parvula var. *tamalpaisensis*	Tamalpais oak	None	None	1B.3	Lower montane coniferous forest.	March-April	Low. No known occurrences reported by CNDDB in EIR Study Area.
Sidalcea calycosa ssp. *Rhizomata*	Point Reyes checkerbloom	None	None	1B.2	Freshwater marshes near the coast.	April-September	Low. No known occurrences reported by CNDDB in EIR Study Area.
Sidalcea hickmanii ssp. *Viridis*	Marin checkerbloom	None	None	1B.1	Chaparral, cismontane woodland; lower montane coniferous forest.	May-August	Low. No known occurrences reported by CNDDB in EIR Study Area.
Spergularia macrotheca var. *longistyla*	Long-styled sand-spurrey	None	None	1B.2	Meadows and seeps; marshes and swamps.	February-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Stebbinsoseris decipiens	Santa Cruz microseris	None	None	1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland in open areas, sometimes on serpentinite.	April-May	Low. No known occurrences reported by CNDDB in EIR Study Area.

TABLE 4.4-2 SPECIAL-STATUS PLANT SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CNPS Rank	General Habitat	Blooming Period	Potential for Occurrence in EIR Study Area
Streptanthus batrachopus	Tamalpais jewel-flower	None	None	1B.3	Closed-cone coniferous forest, chaparral, Talus serpentine outcrops.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Streptanthus glandulosus ssp. *Niger*	Tiburon jewel-flower	Endangered	Endangered	1B.1	Shallow, rocky serpentine slopes in grasslands.	May- June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Streptanthus glandulosus ssp. *Pulchellus*	Mount Tamalpais bristly jewel-flower	None	None	1B.2	Serpentine slopes.	May-July (August rarely)	Moderate. CNDDB general occurrence west end of Lucas Valley.
Symphyotrichum lentum	Suisun Marsh aster	None	None	1B.2	Marshes/swamps (brackish and freshwater); most often seen along sloughs with *Phragmites, Scirpus*, blackberry, *Typha, etc.*	May-November	Low. No known occurrences reported by CNDDB in EIR Study Area.
Trifolium amoenum	Two-fork clover	Endangered	None	1B.1	Coastal bluff scrub, valley and foothill grassland, sometimes on serpentinite.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Trifolium hydrophilum	Saline clover	None	None	1B.1	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools.	April-June	Low. No known occurrences reported by CNDDB in EIR Study Area.
Triquetrella californica	Coastal triquetrella	None	None	1B.2	Grows within 30 miles from the coast in coastal scrub, grasslands, and in open gravels on roadsides, hillsides, rocky slopes.		Low. No known occurrences reported by CNDDB in EIR Study Area.

Notes.
Agencies
USFWS = U.S. Fish and Wildlife Service
CNPS = California Native Plant Society

CNPS California Rare Plant Rank
1A: Plants presumed extinct in California.
1B: Plants rare, threatened, or endangered in California and elsewhere.
2: Plants rare and endangered in California but more common elsewhere.
3: Plants about which additional data are needed – a review list.
4: Plants of limited distribution – a watch list

Sources: California Native Plant Society. *Inventory of Rare and Endangered Plants https://www.cnps.org/rare-plants/cnps-inventory-of-rare-plants.* California Natural Diversity Database, 2019.

Special-Status Animals

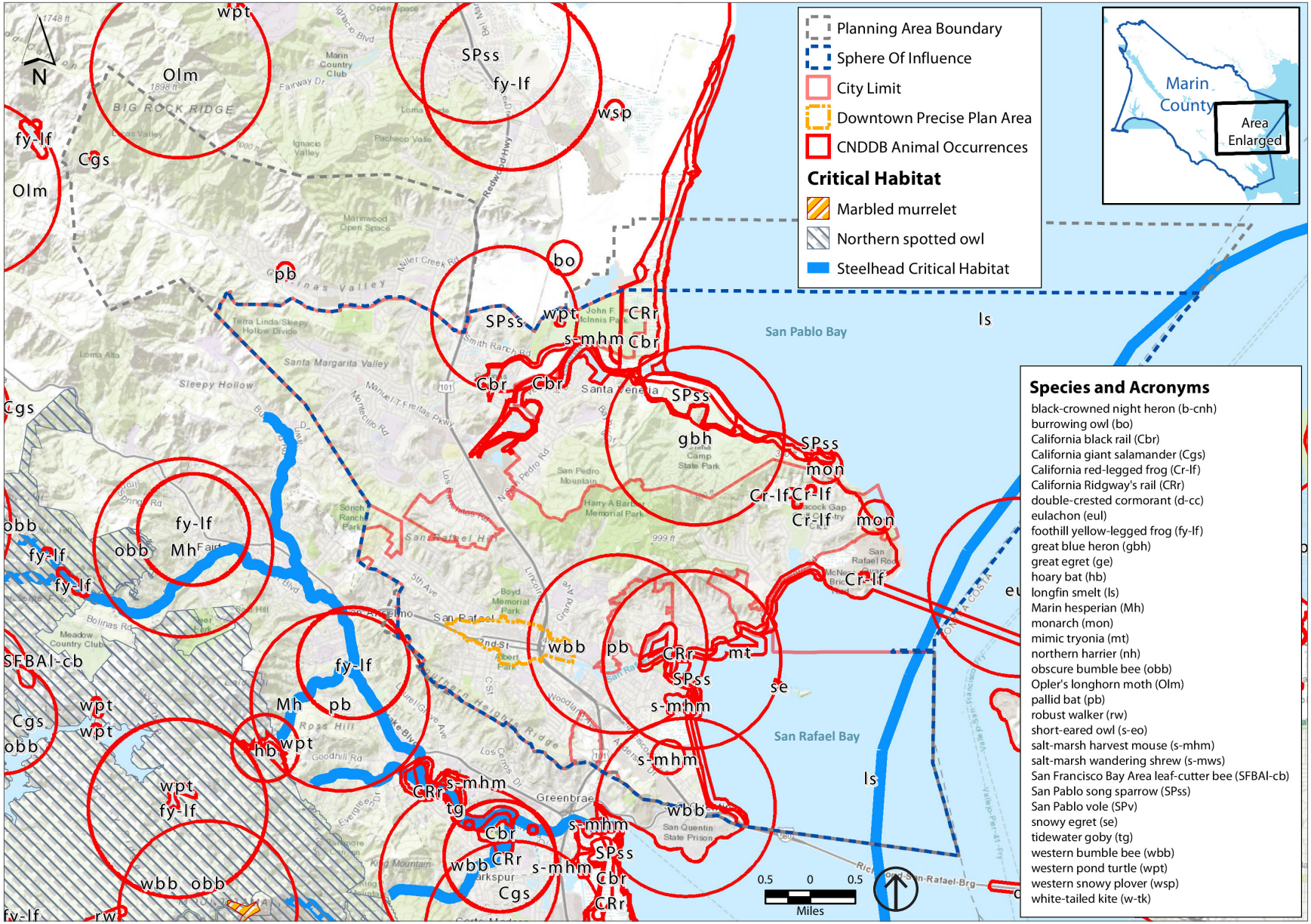
A total of 60 special-status animal species have been recorded, or are considered to potentially occur, in the vicinity of the EIR Study Area, as listed in Table 4.4-3, which includes animal species that may occur within or adjacent to the EIR Study Area, along with their listed status, general habitat characteristics, and their likelihood of occurrence in the EIR Study Area.

A total of 22 of these occurrences of special-status animal species have been reported by the CNDDB within the EIR Study Area. These include bald eagle (*Haliaeetus leucocephalus*), California black rail (*Laterallus jamaicensis*), California giant salamander (*Dicamptodon ensatus*), California red-legged frog (*Rana draytonii*), California Ridgway's rail (*Rallus longirostris obsoletus*), golden eagle (*Aquila chrysaetos),* monarch butterfly (*Danaus plexippus*), mimic tryonia (*Tryonia imitator*), northern harrier (*Circus cyaneus*), northern spotted owl (*Strix occidentalis caurina*), Opler's longhorn moth (*Adela oplerella*), pallid bat (*Antrozous pallidus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Pablo song sparrow (*Melospiza melodia samuelis*), western bumble bee (*Bombus occidentalis*), western pond turtle (*Actinemys marmorata*), and white-tailed kite (*Elanus leucurus*).

In addition, roosting colonies of more common black-crowned night heron (*Nycticorax*), double-crested cormorant (*Palacrocorax auritus*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), and snowy egret (*Egretta thula*), monitored by the CNDDB as sensitive habitat areas, are also reported in the EIR Study Area, as shown on Figure 4.4-3.

Most of the special-status animal species in the EIR Study Area are bird species known or suspected to use suitable habitat in marsh and open waters, together with fish species that utilize the Miller Creek corridor and San Francisco Bay. Most of the species listed in Table 4.4-3 that are not State and/or federally listed species are not closely monitored by the CNDDB and therefore occurrence records are not generally included in the database. These include species identified as "Species of Special Concern" by the CDFW.

No areas designated as Critical Habitat by the USFWS are located within the EIR Study Area. The special-status animal species with a moderate to high potential for occurrence in the EIR Study Area as indicated in Table 4.4-3 are reviewed in more detail in the Biological Background Report and shown on Figure 4.4-3. This includes information on steelhead, California red-legged frog, western pond turtle, northern spotted owl, white-tailed kite, northern harrier, California black rail, California Ridgway's rail, San Pablo song sparrow, and salt marsh harvest mouse.



SOURCES: California Natural Diversity Database and USFWS Critical Habitat database accessed on April 16, 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Figure 4.4-3
Special-Status Animal Species and Critical Habitat

TABLE 4.4-3 SPECIAL-STATUS ANIMAL SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CDFW	General Habitat	Potential for Occurrence in EIR Study Area
Fish						
Oncorhynchus kisutch	Coho salmon (Central California Coast ESUb)	Endangered	Endangered	None	Coastal streams from Punta Gorda in northern California down to and including the San Lorenzo River in central California, as well as some tributaries to San Francisco Bay.	Moderate. Species historically occurred in larger drainages of east Marin County.[10] Species last recorded from San Francisco Bay tributary during early-to-mid 1980s.[11] Corte Madera Creek designated as critical habitat and essential fish habitat for this species.
Oncorhynchus tshawytscha	Chinook salmon (Central Valley Spring-run ESU)	Threatened	Threatened	None	Requires clear, cool streams with pools and riffles, with coarse gravel beds for spawning. Sacramento River and its tributaries.	Moderate. Known to occasionally occur in Corte Madera Creek and other drainages of east Marin County, but fish may be of hatchery origin.[12]
Oncorhynchus mykiss	Steelhead (Central California Coast ESU)	Threatened	None	None	Coastal streams from Russian River south to Aptos Creek (Santa Cruz Co.), including streams tributary to San Francisco and San Pablo Bays.	Moderate. Species historically occurred in larger drainages of east Marin County.[13] Corte Madera Creek and major tributaries are designated as critical habitat.
Acipenser medirostris	Green sturgeon	Threatened	None	Species of Special Concern	Oceanic waters, bays, and estuaries; spawns in deep pools in large, turbulent freshwater river mainstems; known to forage in estuaries and bays from San Francisco Bay to British Columbia.	Moderate. Known from San Pablo Bay and may occur in lower reaches of major drainages.
Eucyclogobius newberryi	Tidewater goby	Endangered	None	Species of Special Concern	Brackish shallow lagoons and lower stream reaches where water is fairly still but not stagnant.	Low. CNDDB record is of an extirpated population recorded in 1961 near the mouth of Corte Madera Creek. Species generally considered extirpated in the region.
Hypomesus transpacificus	Delta smelt	Threatened	None	None	Found in the Sacramento-San Joaquin estuary in saltwater, brackish and freshwater habitats.	Moderate. Known from San Pablo Bay.
Lavinia symmetricus	Tomales roach	None	None	Species of Special Concern	Known only from Walker Creek and Lagunitas Creek watersheds, in a variety of habitat conditions.	Low. No known occurrences reported by CNDDB in EIR Study Area.

[10] Robert A. Leidy, Gordan Becker, Brett N. Harvey. 2007. *Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary*, California. http://www.cemar.org/pdf/coho.pdf.

[11] Robert A. Leidy, Gordan Becker, Brett N. Harvey. 2007. *Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary*, California

[12] Robert A. Leidy, Gordan Becker, Brett N. Harvey. 2005. *Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California*. Center for Ecosystem and Restoration, Oakland, California.

[13] Robert A Leidy, Gordan Becker, Brett N. Harvey. 2005. *Historical distribution and current status of steelhead/rainbow trout* (Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California*. Center for Ecosystem and Restoration, Oakland, California.

TABLE 4.4-3 SPECIAL-STATUS ANIMAL SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CDFW	General Habitat	Potential for Occurrence in EIR Study Area
Spirinchus thaleichthys	Longfin smelt	Candidate	Threatened	Species of Special Concern	Open water estuaries and bays, both in saltwater and freshwater areas.	Moderate. Known from San Pablo Bay.
Thaleichthys pacificus	Eulachon (southern DPSb)	Threatened	None	None	Open water estuaries and bays, both in saltwater and freshwater areas.	Moderate. Known from San Pablo Bay.
Amphibians and Reptiles						
Rana boylii	Foothill yellow-legged frog	None	None	Species of Special Concern	Perennial streams and drainages with cobble substrate.	Moderate. CNDDB occurrences to the west and north of Lucas Valley.
Rana draytonii	California red-legged frog	Threatened	None	Species of Special Concern	Ponds, streams, drainages and associated uplands; requires areas of deep, still, and/or slow-moving water for breeding.	High. CNDDB occurrences from China Camp State Park vicinity in EIR Study Area.
Dicampton ensatus	California giant salamander	None	None	Species of Special Concern	Ponds, streams, drainages and associated uplands; prefers fast moving water in coastal forests and valley-foothill riparian habitats with cover.	High. CNDDB occurrence from Lucas Valley in EIR Study Area.
Actinemys marmorata	Western pond turtle	None	None	Species of Special Concern	Ponds, streams with deep pools, drainages and associated uplands for egg laying.	High. CNDDB occurrence from John F McInnis Park in EIR Study Area.
Invertebrates						
Adela oplerella	Opler's longhorn moth	None	None	None	Typically found on serperntine grasslands where larval host plant, *Platystemon californicus*, is present.	Moderate. CNDDB occurrence from Big Rock Ridge vicinity.
Bombus caliginosus	Obscure bumble bee	None	None	None	Coastal areas from Santa Barbara County to Washington.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Bombus occidentalis	Western bumble bee	None	None	None	Found in a variety of habitats. Once common and widespread. Species has declined precipitously, perhaps from disease.	High. CNDDB occurrences from San Rafael vicinity, and likely remains in a variety of habitats.
Callophyrys mossil bayensis	San Bruno elfin butterfly	Endangered	None	None	Colonies are located on steep, north-facing slopes where larval host plant, *Sedum spathulifolium*, is present.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Danaus plexippus	Monarch butterfly	None	None	None	Relatively common species in decline throughout its range. Overwintering colonies found in eucalyptus groves and conifer forests along coastal California. Overwintering colonies are of concern to CDFW.	High. CNDDB occurrences from China Camp State Park vicinity.

TABLE 4.4-3 SPECIAL-STATUS ANIMAL SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CDFW	General Habitat	Potential for Occurrence in EIR Study Area
Plebujus icarioides missionensis	Mission blue butterfly	Endangered	None	None	Found in coastal chaparral, scrub and grassland habitat where larval host plant, *Lupinus spp.,* are present.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Pomatiopsis binneyi	Robust walker	None	None	None	Amphibious snail living in humid habitat along the Coast Range, on marshy ground and periodically flooded soil. Typically associated with perennial seeps and rivulets.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Speyeria zerene myrtleae	Myrtle's silverspot butterfly	Endangered	None	None	Found in coastal prairie, coastal scrub and sand dunes where larval host plant, *Viola adunca*, is present.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Trachusa gummifera	San Francisco Bay Area leaf-cutter bee	None	None	None	A pollen-collecting bee known from grassland habitat and areas with suitable nectaring plants.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Tryonia imitator	Mimic tryonia (California brackishwater snail)	None	None	None	Inhabits coastal lagoons, estuaries and salt marshes from Sonoma County to San Diego County, typically found in permanently submerged areas.	High. CNDDB occurrence from shoreline north of San Rafael Creek in EIR Study Area.
Vespericola marinensis	Marin Hesperian	None	None	None	Found in moist areas in coastal brushfields and chaparral, in riparian and mixed forest habitats.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Birds						
Aythya americana	Redhead	None	None	Species of Special Concern	Large, deep bodies of water; nests in freshwater emergent wetlands.	Moderate. May winter in small numbers on open water habitats along major drainages and San Pablo Bay.
Pelecanus erythrorhynchos	American white pelican	None	None	Species of Special Concern	Forages over shallow inland waters and coastal marine habitats, nests on isolated islands or peninsulas.	Moderate. May forage and roost in the open water habitat in San Pablo Bay from late summer through spring but does not breed in San Francisco Bay Area.
Pelecanus occidentalis californicus	California brown pelican	Endangered	Endangered	Fully Protected Species	Coastal shorelines and bays; rarely found on fresh water.	Moderate. May forage and roost in the open water habitat in San Pablo Bay from late summer through spring but does not breed in San Francisco Bay Area.
Sterna antillarum browni	California least tern (nesting colony)	Endangered	Endangered	Fully Protected Species	Found along the Pacific coast, foraging in shallow estuaries and lagoons, and nesting on open beaches.	Low. Not reported from eastern Marin County by CNDDB.
Charadrius alexandrines nivosus	Western snowy plover	Threatened	None	Species of Special Concern	Found along the Pacific coast and nests in barren to sparsely vegetated beaches and other shoreline areas.	Low. No known occurrences reported by CNDDB from EIR Study Area.

TABLE 4.4-3 SPECIAL-STATUS ANIMAL SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CDFW	General Habitat	Potential for Occurrence in EIR Study Area
Ardea alba	Great egret (nesting colony)	None	None	None	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW.	High. Observed in Marin County where suitable habitat is present.
Ardea herodias	Great blue heron (nesting colony)	None	None	None	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW.	High. Observed in Marin County where suitable habitat is present.
Egretta thula	Snowy egret (nesting colony)	None	None	None	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW.	High. Observed in Marin County where suitable habitat is present.
Nycticorax	Black-crowned night heron (nesting colony)	None	None	None	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW.	High. Observed in Marin County where suitable habitat is present.
Brachyramphus marmoratus	Marbled murrelet	Threatened	Endangered	None	Forages at sea and utilizes mature conifer forest for nesting.	Low. Suitable nesting and foraging habitat is absent from EIR Study Area.
Elanus leucurus	White-tailed kite	None	None	Fully Protected Species	Open grasslands, meadows, or marshes; require dense- topped trees or shrubs for nesting and perching.	High. Observed in Marin County where suitable habitat is present.
Haliaeetus leucocephalus	Bald eagle	None	Endangered	None	Ocean shorelines, lake margins, and rivers for both nesting and wintering; nests in large trees with open branches.	High. Known to occasionally forage along lower reaches of major drainages and shoreline of San Pablo Bay during winter, but not likely to remain for long periods or breed in EIR Study Area.
Circus cyaneus	Northern harrier	None	None	Species of Special Concern	Nests in wet meadows and marshes, forages over open grasslands and agricultural fields.	High. Observed in Marin County where suitable habitat is present.
Aquila chrysaetos	Golden eagle	None	None	Fully Protected Species	Rolling foothills and mountain areas. Nests in cliff- walled canyons or large trees in open areas.	High. Known to forage and nest in EIR Study Area.
Falco peregrinus	American peregrine falcon	None	Endangered	Fully Protected Species	A variety of open habitats including coastlines, mountains, marshes, bay shorelines, and urban areas. Nest on cliffs, bridges, and tall buildings.	Low. May occasionally forage in EIR Study Area, but not likely to breed due to the lack of suitable nesting habitat.
Laterallus jamaicensis coturniculus	California black rail	Threatened	None	Fully Protected Species	Salt marshes bordering larger bays, also found in brackish and freshwater marshes.	High. Reported by CNDDB from John F. McInnis Park in EIR Study Area.

TABLE 4.4-3 SPECIAL-STATUS ANIMAL SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CDFW	General Habitat	Potential for Occurrence in EIR Study Area
Rallus longirostris obsoletus	Ridgway's rail/California clapper rail	Endangered	Endangered	Fully Protected Species	Tidal salt marshes with sloughs and substantial cordgrass (*Spartina* sp.) cover.	High. Reported by CNDDB from shoreline of San Rafael and John F. McInnis Park in EIR Study Area.
Athene cunicularia	Burrowing owl	None	None	Species of Special Concern	Open, dry grasslands that contain abundant ground squirrel burrows.	Moderate. Observed in Marin County where suitable habitat is present.
Asio flammeus	Short-eared owl	None	None	Species of Special Concern	Found in open country and grasslands.	Moderate. Observed in Marin County where suitable habitat is present.
Asio otus	Long-eared owl	None	None	Species of Special Concern	Conifer, oak, riparian, pinyon-juniper, and desert woodlands adjacent to grasslands, meadows, or shrublands.	Moderate. Observed in Marin County where suitable habitat is present.
Strix occidentalis caurina	Northern spotted owl	Threatened	Candidate	Species of Special Concern	Dense forest and woodland, with suitable prey.	High. CNDDB occurrences from China Camp State Park, Harry A Barber Memorial Park and Southern Heights Ridge in EIR Study Area.
Contopus cooperi	Olive-sided flycatcher	None	None	Species of Special Concern	Coniferous forests with open canopies.	Moderate. Observed in Marin County where suitable habitat is present.
Lanius ludovicianus	Loggerhead shrike	None	None	Species of Special Concern	Open grasslands and woodlands with scattered shrubs, fence posts, utility lines, or other perches; nests in dense shrubs and lower branches of trees	Moderate. Observed in Marin County where suitable habitat is present.
Progne subis	Purple martin	None	None	Species of Special Concern	Woodlands; nests in tree snags and abandoned woodpecker cavities and human-made structures.	Moderate. Observed in Marin County where suitable habitat is present.
Phalacrocorax auritus	Double-crested cormorant (nesting colony)	None	None	None	Relatively common species, found foraging in a variety of aquatic habitats including open water and shorelines of San Pablo Bay. Colonial roosting areas are of concern to CDFW.	High. Observed in Marin County where suitable habitat is present.
Geothlypis trichas sinuosa	San Francisco (salt marsh) common Yellowthroat	None	None	Species of Special Concern	Salt, brackish, and freshwater marshes; and riparian woodlands; nests on or near ground in low vegetation.	Moderate. Observed in Marin County where suitable habitat is present.
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	Species of Special Concern	Tidal marshes and adjacent ruderal habitat, moist grasslands in the coastal fog belt, and infrequently, drier grasslands further inland; in South Bay, nests primarily on levee tops overgrown with annual grasses and levee banks dominated by pickleweed.	Moderate. Observed in Marin County where suitable habitat is present.

TABLE 4.4-3 SPECIAL-STATUS ANIMAL SPECIES IN THE EIR STUDY AREA

Scientific Name	Common Name	Federal List	California List	CDFW	General Habitat	Potential for Occurrence in EIR Study Area
Ammodramus savannarum	Grasshopper sparrow	None	None	Species of Special Concern	Grasslands with scattered shrubs.	Moderate. Observed in Marin County where suitable habitat is present.
Melospiza melodia samuelis	San Pablo (Samuels) song sparrow	None	None	Species of Special Concern	Tidal salt marshes dominated by pickleweed; nests primarily in pickleweed and marsh gumplant.	High. CNDDB occurrences from shoreline of San Rafael, China Camp State Park, and John F. McInnis Park in EIR Study Area.
Agelaius tricolor	Tricolored blackbird	None	None	Species of Special Concern	Nests in dense vegetation near open water; forages in grasslands and agricultural fields.	Low. No known occurrences reported by CNDDB from EIR Study Area.
Mammals						
Reithrodontomys raviventris	Salt marsh harvest mouse	Endangered	Endangered	Fully Protected Species	Tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed for cover.	High. CNDDB occurrences from shoreline of San Rafael and John F. McInnis Park in EIR Study Area.
Antrozous pallidus	Pallid bat	None	None	Species of Special Concern	A variety of open arid habitats (e.g., chaparral, open woodland, deserts); primary roost sites include bridges, old buildings, and in tree hollows and/or bark; sometimes roost in caves and rock crevices.	High. Suitable habitat present and general occurrence reported by CNDDB from San Rafael in EIR Study Area.
Corynorhinus townsendii	Townsend's big-eared bat	None	Candidate	Species of Special Concern	Roots in the open in a variety of habitats, including tree cavities, caves and old buildings. Extremely sensitive to human disturbance.	Low. Suitable habitat present but no known occurrences reported by CNDDB from EIR Study Area.
Lasiurus blossevillii	Western red bat	None	None	Species of Special Concern	Forested canyons and riparian woodlands for roosting, a variety of open habitats for foraging; typically roosts in snags and trees with moderately dense canopies.	Low. Suitable habitat present but no known occurrences reported by CNDDB from EIR Study Area.
Lasiurus cinereus	Hoary bat	None	None	None	Prefers open habitats with access to trees for cover, roosting in dense foliage.	Low. Suitable habitat present but no known occurrences reported by CNDDB from EIR Study Area.
Taxidea taxus	American badger	None	None	Species of Special Concern	Open habitats with friable soils.	Moderate. Suitable habitat present but no known occurrences reported by CNDDB from EIR Study Area.

Notes:
Agencies
USFWS = U.S. Fish and Wildlife Service
CDFW = California Department of Fish and Wildlife
ESU = Evolutionary Significant Unit
DPS = Distinct Population Segment
Sources: California Native Plant Society. *Inventory of Rare and Endangered Plants https://www.cnps.org/rare-plants/cnps-inventory-of-rare-plants;* CDFW, 2019, California Natural Diversity Database (CNDDB).

Sensitive Habitats

Sensitive Natural Communities

The CDFW tracks the occurrences of "special" plant communities that are either known or believed to be of high priority for inventory in the CNDDB. These plant communities are listed in the CDFW *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* publication,[14] which has been updated periodically since and available online on CDFW's website.

These communities are sometimes addressed by lead or trustee agencies, but generally are not afforded the same protection as CNPS Rank 1B and 2 plant species. Many sensitive natural community types support special-status plants and animals and are addressed under CEQA as essential habitat for those species.

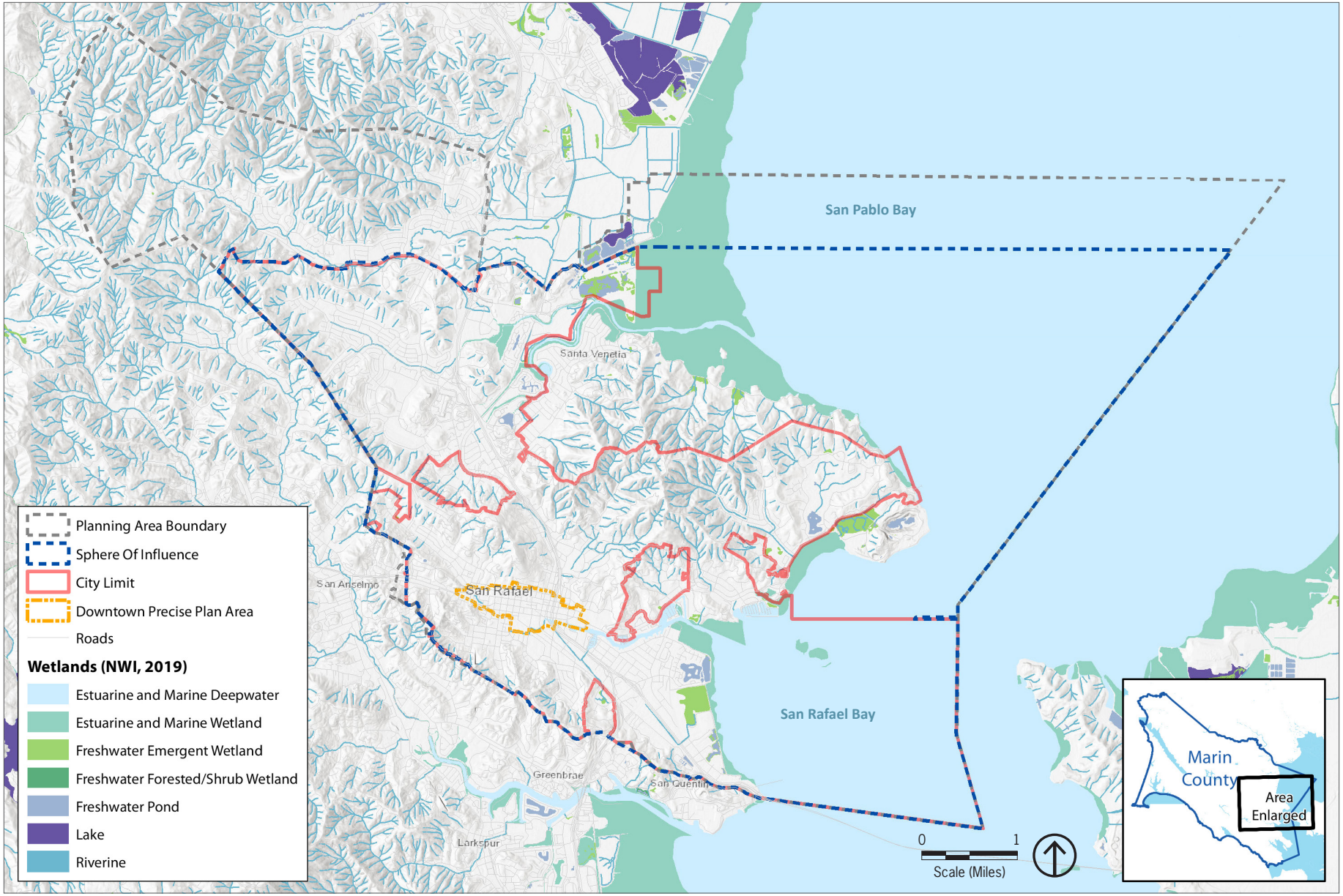
The CNDDB records indicate a large expanse of northern coastal salt marsh, a sensitive natural community type, along the fringe of San Pablo Bay through the northeastern portion of the EIR Study Area. This sensitive natural community type occurs in other locations within the EIR Study Area along the fringe of the San Pablo Bay and San Rafael Bay, including marshlands, such as Tiscornia Marsh near the mouth of San Rafael Creek shown on Figure 4.4-2.

Other sensitive natural community types are known in the EIR Study Area vicinity but have not been mapped in the CNDDB inventory. Based on the *Manual of California Vegetation*[15] classification system and latest list of terrestrial natural communities prepared by CDFW, these sensitive natural communities include Black Oak Forests and Woodlands, Coastal and Montane Redwood Forests, Douglas Fir Forests, California Bay Forests and Woodlands, California Buckeye Woodlands, Coyote Brush Scrub, freshwater marsh, freshwater seeps and springs, and native grasslands.

Occurrences of these sensitive natural community types are most likely present within the remaining woodland, forest, and grasslands in the EIR Study Area, but they have not been mapped as part of the CALVEG or CNDDB mapping programs. Detailed surveys would be required to provide confirmation of presence or absence from undeveloped portions of the EIR Study Area where thorough studies have not been conducted.

[14] California Department of Fish and Game, 2003. *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*. Wildlife and Habitat Data Analysis Branch, Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento.

[15] John Sawyer and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento.



SOURCES: U.S. Fish & Wildlife Service National Wetlands Inventory accessed on April 28, 2019; Base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 1/15/2020.

Figure 4.4-4
National Wetland Inventory Map

Wetlands and Jurisdictional Waters

As described in the General Plan and according to the USACE, wetlands are areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted for life in saturated soil. Wetlands include swamps, marshes, bogs and similar areas. As a significant natural resource, wetlands serve important functions relating to fish and wildlife. Such functions include food chain production, habitat, nesting spawning, rearing and resting sites for aquatic and land species. They also provide protection of other areas from wave action and erosion; storage areas for storm and flood waters; natural recharge areas where ground and surface water are interconnected; and natural water filtration and purification functions.[16] A formal jurisdictional delineation of wetlands and other waters of the U.S. and State was not conducted for the EIR Study Area. However, based on information available from the National Wetlands Inventory, numerous features can be assumed to fall under jurisdiction of the USACE and the San Francisco Bay RWQCB pursuant to Sections 401 and 404 of the federal Clean Water Act and as State waters regulated by the San Francisco Bay RWQCB under the Porter-Cologne Water Quality Control Act. Creeks and lakes are also regulated by the CDFW, pursuant to Section 1600 of the CFGC, with jurisdiction extending to the top of bank or the outer dripline of riparian vegetation along these features, whichever is greater.

As shown on Figure 4.4-4, features within the EIR Study Area likely to be considered wetlands or other waters of the U.S. by the USACE include the marshlands along the fringe of the San Pablo Bay and San Rafael Bay, estuarine and marine wetlands, freshwater wetlands, scattered waterbodies (ponds or lakes), riverine habitats along Miller Creek, Gallinas Creek, San Rafael Creek, and the extensive network of tributary drainages in the upper watersheds. Additional jurisdictional waters of the U.S. and wetlands may be present elsewhere in the EIR Study Area, but detailed site-specific assessments would be required to confirm presence or absence from undeveloped lands. As discussed in Section 4.4.1.1, Regulatory Framework, the USACE, San Francisco Bay RWQCB, and CDFW have authority over these various wetland habitat types.

A detailed wetland delineation and verification by the USACE would be required to determine the extent of jurisdictional wetlands on sites where modifications are proposed. More dense urbanized areas such as the Downtown Precise Plan Area do not contain wetlands identified by the National Wetlands Inventory. Federally regulated waters along the numerous tributary drainages in the EIR Study Area are defined by the "ordinary high-water mark," rather than the band of adjacent riparian vegetation, limiting USACE jurisdiction where dense willow riparian scrub and forest extend a considerable distance from the channel bank. However, the limits of State waters regulated by CDFW and San Francisco RWQCB encompass both the bed and bank of drainageways, as well as the limits of the associated riparian vegetation where it extends beyond the top of bank. Both agencies typically request that an adequate setback be provided to avoid both direct and indirect impacts on riparian corridors as part of environmental review for specific development plans.

[16] US Army Corps of Engineers, Headquarters Website, Regulatory Program and Permits, https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Frequently-Asked-Questions, accessed on December 16, 2020.

4.4.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant biological resources impacts if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plan, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan.
7. Result in significant cumulative impact related to biological resources.

4.4.3 IMPACT DISCUSSION

BIO-1	**Implementation of the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plan, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

General Plan 2040

Local, regional, State, and federal regulations provide varying levels of protection for special-status species, depending on a number of factors, including legal protective status, rarity and distribution, the magnitude of the potential impact on essential habitat, specific occurrence and overall population levels, and take of individual plants or animals. Activities requiring discretionary approvals by local, regional, State, and federal agencies provide for the greatest oversight because each potential future development that could occur from implementation of the proposed General Plan 2040 must be evaluated for their potential impact on special-status species and other sensitive biological resources.

As indicated in Table 4.4-2, 43 special-status plant species occur within or in the vicinity of the EIR Study Area, while a total of nine special-status plant species have reported occurrences monitored by the CNDDB that occur within the EIR Study Area. These consist of bent-flowered fiddleneck, congested-headed hayfield tarplant, Marin knotweed, Mt. Tamalpais bristly jewelflower, Marin western flax, Napa false indigo, Point Reyes salty bird's-beak, Tiburon buckwheat, and white-rayed pentachaeta. As shown in Table 4.4-2, Marin western flax and white-rayed pentachaeta are listed as threatened and endangered, respectively, under both the FESA and CESA.

As indicated in Table 4.4-3, a total of 60 special-status animal species have a moderate to high potential to occur within or frequent the EIR Study Area. Of these, a total of 22 have been reported from or are considered to have a high potential to occur in or frequent the EIR Study Area. These consist of bald eagle, California black rail, California giant salamander, California red-legged frog, California Ridgway's rail, golden eagle,-monarch butterfly, mimic tryonia, northern harrier, northern spotted owl, Opler's longhorn moth, pallid bat, salt marsh harvest mouse, San Pablo song sparrow, western bumble bee, western pond turtle, and white-tailed kite, together with nesting colonies of the more common black-crowned night heron, double-crested cormorant, great egret, great blue heron, and the snowy egret considered sensitive resources by CDFW. As shown in Table 4.4-3, these have varied legal status or are considered Species of Special Concern by the CDFW. A few have no special-status but are monitored by the CDFW because of recent declines and abundance.

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where special-status species are generally not expected to occur. The potential for occurrence of special-status species in developed areas is generally very remote in comparison to undeveloped lands with natural habitat that contain essential habitat characteristics for the range of species known in the EIR Study Area vicinity. While the potential for adverse impacts on special-status species is relatively low, there remains a varying potential for loss or disruption due to conversion of areas of natural habitat, removal of trees and other vegetation, increases in light and noise, and other modifications and disturbance. Development in locations abutting or in the vicinity of open space lands or water resources, where special-status species are more likely to occur, could potentially cause a significant impact to, or cause the inadvertent loss, of bird nests in active use, conflicting with both the MBTA and CFGC.

The proposed Conservation and Climate Change (C) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts to biological resources, including special-status species, on a project-by-project basis. These updated goals, policies, and programs related to preserving mature trees and other native vegetation, further control and eradicate non-native invasive species, participation in regional habitat restoration efforts, and further conformance with State and federal regulations related to special-status species, wetlands, and other jurisdictional waters. These General Plan goals, policies, and programs are listed below in their respective Impact Discussions. One goal, several policies, and several programs would work to reduce general impacts to sensitive habitats and species in the EIR Study Area, including:

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.10: Hillside Preservation. Encourage preservation of hillsides, ridgelines, and other open areas that serve as habitat and erosion protection as well as visual backdrops to urban areas.
- Policy C-1.12: Native or Sensitive Habitats. Protect habitats that are sensitive, rare, declining, unique, or represent a valuable biological resource. Potential impacts to such habitats should be minimized through compliance with applicable laws and regulations, including biological resource surveys, reduction of noise and light impacts, restricted use of toxic pesticides, pollution and trash control, and similar measures.
  - Program C-1.12A: Non-Native Predators. Support efforts by non-profit conservation groups, state and federal agencies, the Marin Humane Society and other organizations to reduce conflicts between human settlement and native wildlife. This includes protecting the habitat of birds and small mammals from non-native predators and restricting the use of pesticides.
  - Program C-1.12B: Oak Savanna and Oak Woodland Habitat Protection. Require proposed developments with the potential to impact oak savanna/woodland habitat to either avoid, minimize, or compensate for the loss of such habitat. Avoidance is the preferred measure where feasible. If habitat loss is deemed unavoidable, require that direct and indirect impacts be mitigated through habitat restoration, creation, or enhancement. Mitigation requirements should be based on vegetation mass rather than the number of impacted trees.
- Policy C-1.13: Special Status Species. Conserve and protect special status plants and animals, including those listed by State or federal agencies as threatened and/or endangered, those considered to be candidate species for listing by state and federal agencies, and other species that have been assigned special status by the California Native Plant Society and the California Fish and Game Code.
  - Program C-1.13A: List of Species. Maintain current California Natural Diversity Database digital (GIS) maps and data tables listing threatened, endangered, and special status species in the San Rafael Planning Area.
  - Program C-1.13B: Surveys. Require that sites be surveyed for the presence or absence of special status species prior to development approval. Such surveys must occur prior to development-related vegetation removal.
  - Program C-1.13C: Mitigating Impacts on Special Status Species. Require that potential unavoidable impacts to special status species are minimized through design, construction, and project operations. If such measures cannot adequately mitigate impacts, require measures such as on-site set asides, off-site acquisitions (conservation easements, deed restrictions, etc.), and specific restoration efforts that benefit the listed species being impacted.

These proposed goals, policies, and programs would help protect special-status species, and minimize impacts on any species identified as an endangered, threatened, candidate, sensitive, or special-status species and their habitat. However, these provisions don't address the possible presence of bird nests in active use, which are protected under the federal MBTA and CFGC. The Draft programs in the Conservation and Climate Change Element of the San Rafael General Plan 2040 should be revised to better clarify the need to conduct confirmation surveys for special-status species. While Program C-1.13B, Surveys, does call for surveying sites for the presence or absence of special-status species prior to development approval, it doesn't acknowledge that for some locations there may be no potential for presence of special-status species and does not address the potential for active bird nests, which are protected under State and federal laws. Without additional consideration through project-specific

assessments, loss of bird nests in active use may occur, which would conflict with State and federal regulations and be considered potentially *significant*.

Impact BIO-1: Impacts to special-status species or the inadvertent loss of bird nests in active use, which would conflict with the federal Migratory Bird Treaty Act and California Fish and Game Code, could occur as a result of potential new development.

Mitigation Measure BIO-1: To ensure sensitive species of any kind are not adversely impacted by implementation of the proposed project, the City shall adopt revisions to General Plan Program C-1.13B and shall adopt a new program or modify an existing program to clarify the need for special-status species surveys and to ensure avoidance of nests of native birds in active use to support Policy C-1.13 (Special Status Species). Revisions to Program C-1.13B are shown in double-underlined text while the new Program is in standard text:

- Modified Program C-1.13B: Surveys for Special-Status Species. Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of special status species prior to development approval. Such surveys should be conducted by a qualified biologist and occur prior to development-related vegetation removal or other habitat modifications.
- New or Modified Program: Avoidance of Nesting Birds. Nests of native bird nests in active use should be avoided in compliance with State and federal regulations. For new development sites where nesting birds may be present, vegetation clearing and construction should be initiated outside the bird nesting season (March 1 through August 31) or preconstruction surveys should be conducted by a qualified biologist in advance of any disturbance. If active nests are encountered, appropriate buffer zones should be established based on recommendations by the qualified biologist and remain in place until any young birds have successfully left the nest.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area is an urbanized area and potential future development in the Downtown Precise Plan Area would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where special-status species are generally not expected to occur. However, there remains a potential for steelhead and other special-status aquatic species to disperse along San Rafael Creek and tributary drainages through the Downtown Precise Plan Area, including San Rafael/Mahon Creek and Irwin Creek in the southeast portion of the Downtown Precise Plan Area. There remains a possibility that bird species may nest along these drainages or in locations with mature trees and other established vegetation, and new development could result in the inadvertent loss or abandonment of nests when in active use, which would be a violation of the MBTA and CFGC.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts to biological resources; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Potential future

development in the Downtown Precise Plan Area are subject to the goals, policies, and programs that would be adopted under the proposed General Plan 2040, as listed above. These proposed goals, policies, and programs would help protect special-status species, and minimize impacts on any species identified as an endangered, threatened, candidate, sensitive, or special-status species that occur in the Downtown Precise Plan Area. Accordingly, like the proposed General Plan 2040, implementation of the Downtown Precise Plan could result in significant impacts related to special-status species and the revised General Plan programs resulting from implementation of Mitigation Measure BIO-1 would reduce impacts to a *less-than-significant* level.

Significance with Mitigation: Less than significant.

BIO-2	**Implementation of the proposed project could have a substantial adverse effect on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

General Plan 2040

Impacts to riparian habitats and other sensitive natural communities may occur from both direct and indirect sources from implementation of the proposed General Plan 2040. Direct impacts occur as a result of converting natural habitat to development, including construction of new structures, creating impervious surfaces for roadways and parking, and culverting of natural drainages. Direct impacts may also be temporary in nature if they disturb a habitat that is subsequently restored after construction. An indirect impact is a physical change in the environment, which is not immediately related to, but could be caused by, implementation of the proposed General Plan 2040. For example, if future development under the proposed General Plan 2040 results in a collective reduction in habitat, the values and functions of that remaining habitat would be reduced. Changes in hydrology and water quality, through increases in sedimentation as a result of grading and the introduction of urban pollutants could also have indirect impacts on aquatic habitat and contribute to a reduction in the value of downgradient waters.

As discussed in Section 4.4.1.2, Existing Conditions, sensitive natural communities in the EIR Study Area include areas of northern coastal salt marsh along the fringe of the San Pablo Bay through the northeastern portion of the EIR Study Area. These marshlands are identified as wetlands under the National Wetlands Inventory, which is discussed further under Impact Discussion BIO-3. Other sensitive natural community types in the EIR Study Area, not mapped in the CNDDB inventory, include Black Oak Forests and Woodlands, Coastal and Montane Redwood Forests, Douglas Fir Forests, California Bay Forests and Woodlands, California Buckeye Woodlands, Coyote Brush Scrub, freshwater marsh, freshwater seeps and springs, and native grasslands. Occurrences of these sensitive natural community types are most likely present within the remaining woodland, forest, and grasslands in the EIR Study Area, but they have not been mapped as part of the CALVEG or CNDDB mapping programs.

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development that results from implementation of the proposed project would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Although these areas generally do not appear to contain large amounts of sensitive habitat, there remains a potential for presence of sensitive natural communities in some locations. Additionally, potential future development that occurs adjacent to open space areas or along drainages and shoreline areas could have a significant impact on sensitive natural communities if present on a particular site. Further detailed investigation is typically necessary to determine whether any sensitive natural communities are present on undeveloped sites with natural habitat.

As discussed in Impact Discussion BIO-1, the Conservation and Climate Change (C) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts to biological resources, including riparian habitats and other sensitive natural community types, on a project-by-project basis. These General Plan goals, policies, and programs serve to minimize impacts on riparian and other sensitive natural communities in the EIR Study Area:

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.6: Creek Protection. Protect and improve creeks as an important part of San Rafael's identity, natural environment, and green infrastructure. Except for specific access points approved per Policy C-1.7, development free setbacks shall be required along perennial and intermittent creeks to help maintain their function and habitat value. Appropriate erosion control and habitat restoration measures are encouraged within the setbacks, and roadway crossings are permitted.
  - Program C-1.6A: Creek and Drainageway Setbacks. Maintain the following setback requirements in the Municipal Code:

    A minimum 25-foot development-free setback shall be maintained from the top of creek banks for all new development (including but not limited to paving and structures), except for Miller Creek and its tributaries, where a minimum 50-foot setback shall be maintained. Setbacks up to 100 feet may be required on lots in development projects that are more than two acres in size where development review determines that a wider setback is needed to maintain habitat values, and in areas where high-quality riparian habitat exists. The City may waive the setback requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the creek to the maximum extent feasible and the results are acceptable to appropriate regulatory agencies. Drainageway Setbacks: Drainageway setbacks shall be established through individual development review, taking into account existing habitat function and values.

  - Program C-1.6B: Municipal Code Compliance. Ensure that the San Rafael Municipal Code is consistent with local, state, and federal regulatory agency requirements for erosion control and natural resource management and is amended as needed when these regulations change. Local public works activities shall comply with the Municipal Code.

- Policy C-1.9: Enhancement of Creeks and Drainageways. Conserve or improve the habitat value and hydrologic function of creeks and drainageways so they may serve as wildlife corridors and green infrastructure to improve stormwater management, reduce flooding, and sequester carbon. Require

creek enhancement and associated riparian habitat restoration/ creation for projects adjacent to creeks to reduce erosion, maintain storm flows, improve water quality, and improve habitat value where feasible.

  - Program C-1.9A: Watercourse Protection Regulations. Maintain watercourse protection regulations in the San Rafael Municipal Code. These regulations should be periodically revisited to ensure that they adequately protect creeks and drainageways. Consider specific measures or guidelines to mitigate the destruction or damage of riparian habitat from roads, development, and other encroachments.

- Policy C-1.12: Native or Sensitive Habitats. Protect habitats that are sensitive, rare, declining, unique, or represent a valuable biological resource. Potential impacts to such habitats should be minimized through compliance with applicable laws and regulations, including biological resource surveys, reduction of noise and light impacts, restricted use of toxic pesticides, pollution and trash control, and similar measures.
  - Program C-1.12B: Oak Savanna and Oak Woodland Habitat Protection. Require proposed developments with the potential to impact oak savanna/woodland habitat to either avoid, minimize, or compensate for the loss of oak trees. Avoidance is the preferred measure where feasible. If the loss of oak trees is deemed unavoidable, require that direct and indirect impacts be mitigated through habitat restoration, creation, or enhancement.
- Policy C-1.13: Special Status Species. Conserve and protect special status plants and animals, including those listed by State or federal agencies as threatened and/or endangered, those considered to be candidate species for listing by state and federal agencies, and other species that have been assigned special status by the California Native Plant Society and the California Fish and Game Code.
  - Program C-1.13D: Steelhead Habitat. Support efforts to restore, preserve or enhance Central California Coast Steelhead habitat in Miller Creek and other creeks.

In addition to these policies, potential future development that occurs from implementation of the proposed General Plan 2040 would be required to comply with SRMC Chapter 11.30, Watercourses, which requires permits from the Public Works Department for development within 15 feet of a bank of a watercourse, regardless if the watercourse is designated as significant or not.

Although potential future development is anticipated to generally occur in already urbanized areas of the EIR Study Area, there is a possibility that development could be proposed in locations that may contain riparian habitat or other sensitive natural community. However, future development proposals requiring discretionary review in locations that may contain sensitive habitat would typically undergo a project-level environmental review to determine presence or absence. As discussed under Impact Discussion BIO-1, site-specific assessments would be required for areas that may support special-status species under Program C-1.13B: Surveys, but does not address confirmation on presence or absence of riparian habitat or other sensitive natural community. Policy C-1.12: Native or Sensitive Habitats calls for protection of sensitive habitats but does specifically require surveys to confirm presence or absence on a particular site proposed for development. A site-specific biological resource assessment would determine whether any sensitive natural communities are present on undeveloped sites and would ensure sensitive resources are adequately protected or appropriate compensatory mitigation is provided as part of new development. Without the preparation of biological resource assessments to determine whether sensitive habitats are

present, impacts could possibly occur in locations where riparian habitat and other sensitive natural community types occur in the EIR Study Area, which is considered *potentially significant*.

Impact BIO-2: Impacts to riparian areas, drainages, and sensitive natural communities could occur from potential future development where natural habitat remains.

Mitigation Measure BIO-2: To ensure sensitive riparian areas, drainages, and sensitive natural communities are not impacted through implementation of the proposed project, the City shall adopt the following General Plan Program or amend other programs to support Policy C-1.12 (Native or Sensitive Habitats) to ensure that sensitive natural communities are identified and addressed as part of future development review:

- New or Modified Program: Surveys for Sensitive Natural Communities. Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of sensitive natural communities prior to development approval. Such surveys should be conducted by a qualified biologist and occur prior to development-related vegetation removal or other habitat modifications.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

Approximately half of the growth anticipated through 2040 would occur in the Downtown Precise Plan Area. The Downtown Precise Plan Area is largely urbanized with remaining natural areas limited to riparian and marshland vegetation occurring along the San Rafael Canal, San Rafael/Mahon Creek, and Irwin Creek. Proposed development adjacent to these drainages could adversely affect remaining areas of riparian and marshland unless identified and adequately protected.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts to biological resources; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Potential future development in the Downtown Precise Plan Area is subject to the goals, policies, and programs that would be adopted under the proposed General Plan 2040, as listed above. Furthermore, the proposed General Plan 2040 includes a program (C-1.9D) to "Pursue opportunities for creek restoration and beautification along San Rafael, Mahon, and Irwin Creeks, building on past efforts supporting biological and ecological restoration, education, and water quality improvements along these waterways." These proposed goals, policies, and programs would help protect riparian areas, drainages, and sensitive natural communities, and minimize impacts to these areas in the Downtown Precise Plan Area. Accordingly, like the proposed General Plan 2040, implementation of the Downtown Precise Plan could result in significant impacts related to riparian areas, drainages, and sensitive natural communities and implementation of Mitigation Measure BIO-2 would be required to reduce impacts to a *less-than-significant* level.

Significance with Mitigation: Less than significant.

BIO-3	**Implementation of the proposed project could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.**

General Plan 2040

Development and land use activities associated with implementation of the proposed General Plan 2040 could result in direct loss or modification to existing wetlands and unvegetated other waters, as well as indirect impacts due to water quality degradation. Affected wetlands could include both the wetland-related sensitive natural community types described under Impact Discussion BIO-2, as well as areas of open water, degraded and modified streams and channels, unvegetated waters, and isolated seasonal wetlands or freshwater seeps. Indirect impacts to wetlands and jurisdictional other waters include an increase in the potential for sedimentation due to construction grading and ground disturbance, an increase in the potential for erosion due to increased runoff volumes generated by impervious surfaces, and an increase in the potential for water quality degradation due to increased levels in non-point pollutants.

Water quality degradation may occur even when wetlands and unvegetated channels are avoided by proposed development if setbacks are inadequate to provide critical vegetation filtration functions. However, potential future development would be required to comply with SRMC Chapter 17.10, Dumping, Dredging, and Construction within Tidal Waterways, which requires a Tideland Permit through the Department of Public Works, prior to any construction activities. Indirect water quality-related issues are discussed further in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, and as discussed in Impact Discussion HYDRO-1, water quality impacts were determined to be *less than significant*. Refer to Chapter 4.10, Hydrology and Water Quality, for a list of goals, policies, and programs that would preserve water quality of all water resources in the EIR Study Area, including wetlands.

As described in Impact Discussion BIO-1, the Conservation and Climate Change (C) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts to biological resources, including wetlands, on a project-by-project basis. These General Plan goals, policies, and programs serve to minimize impacts on wetlands in the EIR Study Area:

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.1: Wetlands Preservation. Require appropriate public and private wetlands preservation, restoration and/or rehabilitation through the regulatory process. Support and promote acquisition of fee title and/or easements from willing property owners.
  - Program C-1.1A: Wetlands Overlay District. Continue to implement wetlands policy through a Wetlands Overlay Zoning District that is based on wetland delineations consistent with US Army Corps of Engineers criteria.
- Policy C-1.3: Wetland Protection and Mitigation. In order to protect and preserve valued wetlands, loss of wetlands due to filling shall be avoided, unless it is not possible or practical. Compensatory

mitigation for the loss of wetlands shall be required in the event that preservation is not possible or practical due to conditions such as the location, configuration, and size of the wetland.

- Program C-1.3A: Compensatory Mitigation Requirements. For permanently impacted wetlands, lost wetland area shall be replaced on-site and in-kind at a minimum ratio of 2:1 (e.g., 2 acres for each acre lost). If on-site mitigation is not possible or practical, off-site mitigation shall be required, preferably in the same drainage basin or a nearby Marin watershed if the same basin is not available, at a minimum replacement ratio of 3:1. Temporarily impacted wetlands may be restored and revegetated to pre-project conditions.
- Program C-1.3B: Conditions for Mitigation Waivers. The City may waive the compensatory mitigation requirement on a case by case basis for wetlands restoration projects and for fill of wetlands that are less than 0.1-acre in size, provided that all of the following conditions are met: (1) the wetland is isolated (e.g., it is not within, part of, or directly connected or hydrologically linked by natural flow to a creek, drainageway, wetland, or submerged tidelands); (2) it is demonstrated by an independent wetland expert that preservation would not result in a functioning, biological resource; (3) the City has determined that filling would result in a more appropriate and desirable site plan for the project; and (4) the City verifies that applicants have received all required permits and complied with all other mitigation requirements from resource agencies with wetland oversight.
- Program C-1.3C: Revision of Mitigation and Waiver Requirements. Consider revisions to mitigation requirements and waiver conditions that reflect best practices, sea level rise adaptation needs, and consistency with the requirements used by state and federal agencies and other Bay Area jurisdictions.

- Policy C-1.5: Wetland Setbacks. Maintain a minimum 50-foot development-free setback from wetlands, including, but not limited to, paving or structures. Setbacks of greater than 50 feet may be required on lots of two or more acres as determined through development review. The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the wetland to the maximum extent feasible and will not cause cumulative impacts on functioning wetlands.

As described in Impact Discussions BIO-1 and BIO-2, site-specific assessments would be required for developments proposed on or near sensitive habitats, such as wetlands. The assessment would be necessary to determine the extent of any jurisdictional waters on undeveloped lands with potentially sensitive habitat where development is proposed. In addition to the stated goals, policies, and programs listed in Impact Discussion BIO-3, potential future development must comply with SRMC Chapter 14.13, Wetland Overlay District, which requires a USACE wetland delineation and federal and State permits prior to approval of a use permit where regulated waters would be affected. This project-specific assessment would serve to identify the presence or absence of any jurisdictional waters and would ensure sensitive resources are adequately protected or appropriate compensatory mitigation is provided as part of new development. However, there may be regulated waters on undeveloped properties outside of mapped Wetland Overlay District parcels that could be affected by future development, including wetlands and riparian habitat along streams and channels. Without the preparation of project-specific assessments for future projects on or near potential wetlands outside the Wetland Overlay District parcels, impacts in the EIR Study Area are considered *potentially significant* and mitigation is required.

Impact BIO-3: Potential future development could result in direct and indirect impacts to wetland habitat.

Mitigation Measure BIO-3: To ensure that sensitive wetland habitats are not impacted directly or indirectly through implementation of the proposed project, the City shall adopt the following General Plan Program or amend other programs to support Policy C-1.1 (Wetlands Protection) to ensure that jurisdictional waters are identified and addressed as part of future development review:

- New Program: Surveys for Regulated Waters. Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the presence or absence of regulated waters prior to development approval. Such surveys should be conducted by a qualified wetland specialist and occur prior to development-related vegetation removal or other habitat modifications.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

Wetlands and regulated waters within the Downtown Precise Plan Area include the San Rafael Canal, San Rafael/Mahon Creek, and Irwin Creek. Potential future development activities in the Downtown Precise Plan Area could result in direct loss or modification to these features, as well as indirect impacts due to water quality degradation unless adequate avoidance and controls are implemented.

The proposed Downtown Precise Plan has no specific policies, but does describe the potential for an urban wetland in the Transit Village sub-area. An urban wetland would help alleviate local flooding during the rainy season and to combat sea-level rise in the future, as well as restore natural habitat near the junction of Irwin and Mahon Creeks. An urban wetland project would require parcel acquisition along San Rafael Creek. An urban wetland could be designed to widen the connection of Irwin Creek and San Rafael Creek and create a natural downtown amenity. The Downtown Code has no specific regulations to reduce impacts to biological resources; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Potential future development in the Downtown Precise Plan Area are subject to the goals, policies, and programs that would be adopted under the proposed General Plan 2040, as listed above. These proposed goals, policies, and programs would help protect wetlands, and minimize impacts these areas in the Downtown Precise Plan Area. Accordingly, like the proposed General Plan 2040, implementation of the Downtown Precise Plan could result in significant impacts related to wetlands and implementation of Mitigation Measure BIO-3 would be required to reduce impacts to a *less-than-significant* level.

Significance with Mitigation: Less than significant.

BIO-4 Implementation of the proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

General Plan 2040

Development and land use activities associated with implementation of the proposed General Plan 2040 would generally be in urbanized areas with few wildlife corridors or locations where wildlife is already acclimated to human activity. However, the EIR Study Area does contain some habitat areas that could be adversely affected by new development, particularly along creeks and other drainages, or adjacent to open space and undeveloped lands.

As discussed in Impact Discussion BIO-1, the proposed General Plan 2040 includes a goal, policy, and program that would ensure that existing wildlife corridors are preserved and protected. These include:

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.11: Wildlife Corridors. Preserve and protect areas that function as wildlife corridors, particularly those areas that provide natural connections permitting wildlife movement between larger natural areas.
  - Program C-1.11A: Mapping of Wildlife Corridors. Support mapping of wildlife corridors in the Planning Area. Use this data to determine where conservation easements may be appropriate in the event properties within these corridors are subdivided, or when other opportunities arise for securing such easements.

Creeks and shorelines serve as important movement corridors through the EIR Study Area, and the numerous goals, policies and programs in General Plan 2040 would serve to protect and enhance these features. Site-specific biological resource assessments on sites with remaining natural habitat would also be required under Mitigation Measure BIO-1, which would determine whether any important wildlife movement corridors are present on undeveloped lands where potential future development is proposed. This project-specific assessment would serve to identify presence of any sensitive wildlife movement corridors and would ensure sensitive resources are adequately protected or appropriate compensatory mitigation is provided as part of new development. Without the preparation of project-specific assessments for future projects on or near sensitive habitats, impacts in the EIR Study Area are considered *potentially significant* and mitigation is required.

Potential future development could result in the potential for bird collisions as a result of new buildings and other structures. Avian injury and mortality resulting from collisions with buildings, towers, and other human-made structures is a common occurrence in city and suburban settings. Some birds are unable to detect and avoid glass and have difficulty distinguishing between actual objects and their reflected images, particularly when the glass is transparent and views through the structure are possible. Night-time lighting can interfere with movement patterns of some night-migrating birds, causing disorientation or attracting them to the light source. The frequency of bird collisions in any particular area is dependent

on numerous factors, including characteristics of building height, fenestration, and exterior treatments of windows and their relationship to other buildings and vegetation in the area; local and migratory avian populations, their movement patterns, and proximity of water, food and other attractants; time of year; prevailing winds; weather conditions; and other variables.

New buildings associated with the future development under General Plan 2040 would alter existing physical characteristics of the EIR Study Area and could contribute to an increased risk of bird collisions and mortalities. For taller buildings and structures that extend above the existing urban fabric and height of vegetative cover, this could be a significant impact unless appropriate bird-safe design measures were incorporated into the building design. Bird-safe design measures can include the following design considerations and best management practice strategies:

- Avoid the use of highly reflective glass as an exterior treatment, which appears to reproduce natural habitat and can be attractive to some birds,
- Limit reflectivity and prevent exterior glass from attracting birds in building plans by utilizing low-reflectivity glass and providing other non-attractive surface treatments,
- Use low-reflectivity glass or other glazing treatments for the entirety of the building's glass surface, not just the lower levels,
- For commercial buildings, interior light "pollution" should be reduced during evening hours through the use of a lighting control system,
- Exterior lighting should be directed downward and screened to minimize illuminating the exterior of the building at night, except as needed for safety and security,
- Glass skyways or walkways, freestanding glass walls, and transparent building corners should not be allowed,
- Transparent glass should not be allowed at the rooflines of buildings, including in conjunction with green roofs, and
- All roof mechanical equipment should be covered by low-profile angled roofing so that obstacles to bird flight are minimized.

Mitigation Measure BIO-4 has been recommended to ensure bird-safe design is considered for new buildings/structures and to reduce the risk of bird collisions. Implementation of the practices developed as part of General Plan 2040 and Mitigation Measure BIO-4 regarding the risk of bird collisions would ensure that opportunities for wildlife movement are adequately identified and protected, and potential impacts would be reduced to *less-than-significant* levels.

Impact BIO-4: Potential future development in the EIR Study Area could result in impacts on the movement of wildlife and potential for increased risk of bird collisions.

> Mitigation Measure BIO-4: To ensure that potential future development under implementation of the proposed project does not result in impacts on the movement of wildlife, the City shall adopt the following General Plan programs or amend other programs to support Policy C-1.11 (Wildlife Corridors) so that important movement corridors and the potential for increased risk of bird collisions are identified and addressed as part of future development review:
>
> - New or Modified Program: Surveys for Wildlife Movement Corridors. Require that sites with suitable natural habitat, including creek corridors through urbanized areas, be surveyed for the

presence or absence of important wildlife corridors prior to development approval. Such surveys should be conducted by a qualified biologist and occur prior to development-related vegetation removal or other habitat modifications.

- New or Modified Program: Consider Risk of Bird Collision. Require that taller structures be designed to minimize the potential risk of bird collisions using input from the latest bird-safe design guidelines and best management practice strategies to reduce bird strikes.
- New Program: Bird Safe Design Ordinance. Develop and adopt a Bird Safe Design ordinance to provide specific criteria and refined guidelines as part of design review of new buildings and taller structures.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

As determined in Impact Discussions BIO-1 through BIO-3, the Downtown Precise Plan would absorb roughly half of the growth anticipated in the EIR Study Area by 2040. However, the Downtown Precise Plan is considered largely built out with little opportunities for terrestrial wildlife movement and dispersal. There remains a potential for fish, birds, and some wildlife to move along the San Rafael Canal, San Rafael Creek, and other drainages through the Downtown Precise Plan Area. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts to biological resources, the potential future development in the Downtown Precise Plan Area is subject to the goals, policies, and programs that would be adopted under the proposed General Plan 2040, as listed above, that are aimed at protecting biological resources. Controls implemented under Mitigation Measure BIO-4 to reduce the risk of bird collisions for any larger new buildings in the Downtown Precise Plan area, would address the potential adverse impacts otherwise posed by new structures. As such, implementation of the Downtown Precise Plan would not interfere substantially with the movement of native resident or migratory fish or wildlife species and the impact is *less than significant.*

Significance without Mitigation: Less than significant.

BIO-5	**Implementation of the proposed project could conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

General Plan 2040

The City of San Rafael General Plan is the primary planning document for the City of San Rafael. The proposed revisions to policies and programs under the Conservation and Climate Change (C) Element are intended to ensure consistency between the General Plan and Zoning Ordinance. Because the General Plan is the overriding planning document for San Rafael and because the proposed project involves updating the General Plan and Zoning Ordinance for internal consistency, implementation of the proposed project would not conflict with local policies and ordinances protecting biological resources. As described in Impact Discussion BIO-3, potential future development under implementation of the proposed project

would be required to comply with Chapter 11.30, Watercourses, to protect the flow of water in watercourses within the EIR Study Area. Additionally, potential future development would be required to comply with Chapter 14.13, Wetland Overlay District, and Chapter 17.10, Dumping, Dredging and Construction within Tidal Waterways, which contain provisions to protect wetlands, marshlands, and tidal areas within the EIR Study Area. Furthermore, SRMC Chapter 11.12, Trees, has additional requirements that provide for the protection and preservation of trees along public streets, sidewalks, and walkways within the city. This chapter requires a permit be approved by the Public Works Department for the trimming, planting, and removal of street trees, in addition to regulation for the protection of trees during construction activities.

The proposed Conservation and Climate Change (C) Element and the Community Design and Preservation (CDP) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts to various biological resources, including trees. The following General Plan goal, policies, and programs would serve to minimize potential adverse impacts to biological resources such as trees in the EIR Study Area:

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.16: Urban Forestry. Protect, maintain, and expand San Rafael's tree canopy. Trees create shade, reduce energy costs, absorb runoff, support wildlife, create natural beauty, and absorb carbon, making them an essential and valued part of the city's landscape and strategy to address global climate change. Tree planting and preservation should be coordinated with programs to reduce fire hazards and ensure public safety, resulting in a community that is both green and fire-safe.
  - Program C-1.16A: Increasing the Tree Canopy. Implement measures to increase the tree canopy, as outlined in the City's Climate Change Action Plan. These measures include:
    - Tree planting on city-owned land
    - Reviewing parking lot landscaping standards to maximize tree cover
    - Minimizing tree removal
    - Controlling invasive species that threaten the health of the urban forest
    - Integrating trees and natural features into the design of development projects
    - Encouraging trees on private property
    - Increasing the diversity of trees to increase habitat value and resilience.
  - Program C-1.16B: Tree City USA. Maintain San Rafael's status as a "Tree City USA" community by following best practices in urban forestry management and regularly applying for recertification.
  - Program C-1.16C: Tree Preservation. Consider ordinances and standards that limit the removal of trees of a certain size and require replacement when trees must be removed.
- Policy C-1.17: Tree Management. Encourage the preservation of healthy, mature trees when development and/or construction is proposed. Site plans should indicate the location of trees and include measures to protect them where feasible.

Goal CDP-3: Attractive Streets and Public Spaces. Create streets, public spaces, and civic buildings that add value to private property, promote environmental sustainability, and contribute to San Rafael's visual quality and identity.

- Policy CDP-3.5: Street Trees. Encourage the planting and maintenance of street trees to reduce urban heat island effects, sequester carbon, improve air quality, absorb runoff and wind, define neighborhoods, and improve the appearance and character of City streets.
  - Program CDP-3.5A: Street Tree Master Plan. Develop a comprehensive citywide Street Tree Master Plan. The Plan should address street tree planting, species selection, maintenance, replacement, diversification, wood utilization, and tree waste recycling and should ensure that trees are appropriate for the planting areas where they are located.
  - Program CDP-3.5C: Street Trees for New Development. Require street trees in new developments and major property upgrades.
  - Program CDP-3.5D: Street Tree Maintenance. Support the long-term health of San Rafael's urban forest through timely, quality street tree maintenance. Seek diversified funding sources for maintenance and replacement.
- Policy CDP-3.6: Tree Replacement. Discourage the removal of healthy trees. Support replacement when trees are removed due to health, safety, or maintenance cost reasons.
  - Program CDP-3.6A: Mitigation for Tree Removal. Continue to implement mitigation requirements for tree removal in new development. When necessary, this could include planting of trees in locations other than the project site. Tree replacement value should be based on mass rather than a numeric ratio score.

Potential future development within the EIR Study Area would be required to comply with applicable SRMC regulations and the proposed General Plan 2040 goals, policies, and programs listed above, which would reduce potential impacts on sensitive biological resources as a result of implementing the proposed General Plan 2040. With adherence to these regulations, and refinements called for in Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4, no conflicts with local plans and policies are anticipated, and impacts would be considered *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Like potential future development in the remainder of the city, potential future development in the Downtown Precise Plan Area would be required to comply with the proposed General Plan 2040 policies and programs, and the listed SRMC regulations. With adherence to these regulations, no conflicts with local plans and policies are anticipated, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

BIO-6	**Implementation of the proposed project could conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan.**

The EIR Study Area is not in any local, regional, or State habitat conservation plan areas. Therefore, the proposed project would not conflict with any such plan. Furthermore, several goals, policies, and

programs in the proposed General Plan 2040, listed under Impact Discussions BIO-1 and BIO-5, along with the stated SRMC regulations, would serve to protect and enhance the sensitive natural communities and special-status species within the EIR Study Area. Therefore, *no impact* would occur.

Significance without Mitigation: No impact.

BIO-7 Implementation of the proposed project could result in a cumulatively considerable impact to biological resources.

The impacts of potential future development on biological resources tend to be site-specific, and the overall cumulative effects would be dependent on the degree to which significant vegetation and wildlife resources are protected on a particular site. This includes preservation of well-developed native vegetation (e.g., native grasslands, oak woodlands, riparian woodland, and chaparral, among others), populations of special-status plant or animal species, and wetland features (e.g., coastal salt marsh, freshwater marsh and seeps, riparian corridors, and drainages). Further, biological resource assessments would be required for future projects proposed on or near sensitive habitats, as outlined under Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4. These biological resource assessments would serve to ensure that important biological resources are identified, protected, and properly managed, and to prevent any significant adverse development-related impacts, including development for the remaining undeveloped lands in the EIR Study Area and surrounding incorporated and unincorporated lands.

To some degree, cumulative development contributes to an incremental reduction in the amount of existing natural wildlife habitat, particularly for birds and larger mammals. Habitat for species intolerant of human disturbance can be lost as development encroaches into previously undeveloped areas, disrupting or eliminating movement corridors and fragmenting the remaining suitable habitat retained within parks, public and private open space, and undeveloped properties. New cumulative development in the region could result in further conversion of existing natural habitats to urban and suburban conditions, limiting the existing habitat values of the surrounding area. This could include further loss of wetlands and sensitive natural communities, reduction in essential habitat for special-status species, removal of mature native trees and other important wildlife habitat features, and obstruction of important wildlife movement corridors. Additional development may also contribute to degradation of the aquatic habitat in the creeks throughout the region, including the EIR Study Area. Grading associated with construction activities generally increases erosion and sedimentation, and urban pollutants from new development would reduce water quality.

However, increased development potential in the EIR Study Area is anticipated to occur in existing urbanized areas. Potential future development that could occur elsewhere in the region, outside of the EIR Study Area, is anticipated to occur largely in urbanized areas. In the event that potential future development in the region is proposed in an undeveloped area, the project would likely undergo independent environmental review as required by the jurisdiction in which the project is proposed. Further, the goals, policies, and programs applicable to the proposed project, together with implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4, would serve to address these contributions to cumulative impacts on sensitive biological and wetland resources, as discussed above.

Therefore, the proposed project would not result in a cumulatively considerable impact to biological resources and cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

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4.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

This chapter describes existing cultural and tribal cultural resources (TCRs) within the Environmental Impact Report (EIR) Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed project. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of the proposed project and cumulative impacts.

This chapter is based on the following documents, which can be found in Appendix F, Cultural Resources Data, of this Draft EIR:

- *Cultural Resources Report,* Tom Origer & Associates, January 2020
- *Downtown San Rafael Precise Plan Historic Resources Inventory Summary Report*, City of San Rafael, December 2020.

4.5.1 ENVIRONMENTAL SETTING

4.5.1.1 REGULATORY FRAMEWORK

Federal Regulations

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 established the National Register of Historic Places (National Register) as the official designation of historical resources, including districts, sites, buildings, structures, and objects.

Sites less than 50 years in age, unless of exceptional importance, are not eligible for the National Register. Listing in the National Register does not entail specific protection for a property, but project effects on properties listed or eligible for listing in the National Register must be evaluated under the California Environmental Quality Act (CEQA).

For a property to be eligible. for listing in the National Register, it must be significant and possess integrity. According to the National Register criteria for evaluation,[1] a property is significant in American history, architecture, archaeology, engineering, or culture if it is:

A. associated with events that made a significant contribution to the broad patterns of our history; or
B. associated with the lives of significant persons in our past; or
C. embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. has yielded or may be likely to yield, information important in history or prehistory.

[1] Code of Federal Regulations, 36 CFR Part 60.4.

Secretary of the Interior's Standards for the Treatment of Historic Properties

The Secretary of the Interior's Standards for the Treatment of Historic Properties (Secretary's Standards) promote responsible practices that help protect the nation's irreplaceable cultural resources. The Secretary of the Interior's Standards are neither technical nor prescriptive, and cannot, in and of themselves, be used to make essential decisions about which features of the historic building should be saved and which can be changed. But once a treatment is selected, the Secretary of the Interior's Standards provide for philosophical consistency in the work. An individual set of Secretary of the Interior's Standards has been formulated for each of four identified treatment approaches: Preservation, Rehabilitation, Restoration, and Reconstruction. The four approaches are defined below:

- *Preservation* requires retention of the greatest amount of historic fabric, along with the building's historic form, features, and detailing as they have evolved over time.
- *Rehabilitation* acknowledges the need to alter or add to a historic building to meet continuing or new uses while retaining the building's historic character.
- *Restoration* allows for the depiction of a building at a particular time in its history by preserving materials from the period of significance and removing materials from other periods.
- *Reconstruction* establishes a limited framework for re-creating a vanished or non-surviving building with new materials, primarily for interpretive purposes.

The Secretary's Standards for Rehabilitation—*Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (1995)—specifically address and encourage alterations or additions to a historic resource to allow new uses while retaining the resource's historic character and are particularly applicable in the Downtown Precise Plan Area. The Secretary of the Interior's Standards for Rehabilitation include the following:

1. A property will be used as it was historically or be given new use that requires minimal changes to its distinctive materials, features, spaces and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alterations of features, spaces and spatial relationships that characterize a property will be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Secretary of the Interior's Standards for Architectural and Engineering Documentation

The Secretary of the Interior's Standards for Architectural and Engineering Documentation pertain to the development of documentation for historic buildings, sites, structures and objects. This documentation, which usually consists of measured drawings, photographs and written data, is intended to provide important information on a property's historic significance for use by researchers, preservationists, architects and others interested in preserving and understanding historic properties. Such documentation permits accurate repair or reconstruction of parts of a property, or may record and preserve information about a property that is to be demolished. These Standards are intended for use in developing documentation to be included in the Historic American Building Survey (HABS) and the Historic American Engineering Record (HAER) Collections in the Library of Congress. The requirements for content, quality, materials and presentation may also be applied to documentation for other purposes such as State or local archives.

Secretary of the Interior's Professional Qualifications Standards

The Secretary of the Interior's Professional Qualifications Standards define minimum education and experience required to perform historic resources identification, evaluation, registration, and treatment activities.[2]

Paleontological Resource Protection

Paleontological resources are classified as nonrenewable scientific resources and are protected by federal and state statutes, most notably the 1906 federal Antiquities Act. Professional standards for assessment and mitigation of adverse impacts on paleontological resources have been established by the Society for Vertebrate Paleontology.

[2] Code of Federal Regulations, 36 CFR Part 61.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act establishes, as national policy, that traditional Native American practices; beliefs; sites, including the right of access; and the use of sacred objects shall be protected and preserved. It does not include provisions for compliance.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 protects Native American remains, including Native American graves on federal and tribal lands, and recognizes tribal authority over the treatment of unmarked graves. This Act prohibits the selling of Native American remains and provides guidelines for the return of Native American human remains and cultural objects from any collection receiving federal funding, such as museums, universities, or governments. Noncompliance with this Act can result in civil and criminal penalties.

State Regulations

CEQA Guidelines

The state CEQA Guidelines pertaining to historic resources and archaeological resources are described below.

Archaeological Resources

Public Resources Code (PRC) Section 21083.2 (CEQA Statute) and California Code of Regulations (CCR) Section 15126.4 (CEQA Guidelines) specify lead agency responsibilities to determine whether a project may have a significant effect on archaeological resources.

CEQA Section 21083.2 sets out detailed requirements for projects for which it can be demonstrated will damage a unique archaeological resource. For such projects, the lead agency may require reasonable efforts for the resources to be preserved in place or left in an undisturbed state. Preservation in place is the preferred approach to mitigation. CEQA Section 21083.2 also details required mitigation if unique archaeological resources are not preserved in place.

CEQA Guidelines Section 15064.5 also specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. These procedures include the following provisions: (1) protect such remains from disturbance, vandalism and inadvertent destruction; (2) establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and (3) establish the Native American Heritage Commission (NAHC) as the authority to resolve disputes regarding disposition of such remains.

Historic Resources

CEQA Guidelines Section 15064.5 states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant impact on the environment.

CEQA Guidelines Section 15064.5(a) states that, for purposes of CEQA, the term "historical resources" shall include the following:

- A resource listed in or determined to be eligible by the State Historical Resources Commission, for listing in the California Register (PRC Section 5024.1; Title 14 CCR, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in an historical resource survey meeting the requirements PRC Section 5024.1(g), shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant0 if the resource meets the criteria for listing on the California Register (PRC Section 5024.1, Title 14 CCR, Section 4852) including the following:
- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register, not included in a local register of historical resources (pursuant to PRC Section 5020.1(k)), or identified in an historical resources survey (meeting the criteria in PRC Section 5024.1(g)) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

For historic resources. CEQA Guidelines Section 15064.5(b)(3) indicates that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall be considered as mitigated to a less-than-significant level on the historic resource.

California Register of Historic Resources

The California Register of Historic Resources (California Register) establishes a list of properties to be protected from substantial adverse change (PRC Section 5024.1). A historical resource may be listed in the California Register if it is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California, and meets any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- is associated with the lives of persons important in California's past.

- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value.
- has yielded or is likely to yield information important in prehistory or history.

The California Register includes properties that are listed or have been formally determined eligible for listing in the National Register, State Historical Landmarks and eligible Points of Historical Interest. Other potential resources require nomination for inclusion in the California Register.

For a property to be eligible for listing in the California Register, it must possess integrity as well as be significant. Integrity is the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period. Loss of integrity, if sufficiently great, will render a resource ineligible for the California Register. Integrity is determined through application of seven factors:

- *Location*. Location is the place where the historic property was constructed or the place where the historic event occurred.
- *Design*. Design is the combination of elements that create the form, plan, space, structure, and style of a property.
- *Setting*. Setting is the physical environment of the historic property.
- *Materials*. Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration form a historic property
- *Workmanship*. Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- *Feeling*. Feeling is a property's expression of the aesthetic or historic sense of a particular period of time.
- *Association*. Association is the direct link between an important historic event or person and a historic property.

Health and Safety Code Section 7052 and 7050.5

Health and Safety Code Section 7052 states that the disturbance of Native American cemeteries is a felony. Health and Safety Code Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

California Native American Historical, Cultural and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. This Act requires that upon discovery of human remains, construction or excavation activity cease and the county coroner notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies the persons most likely to be descended from the Native American remains. This Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Public Resources Code Section 5097

PRC Section 5097.5(a) specifies that a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, or archaeological sites, which can include fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.

California Code of Regulations

Archaeological resources, on lands administered by the California Department of Parks and Recreation, are addressed in Title 14, Division 3, Chapter 1 of the CCR. Section 4308 of this chapter addresses archaeological features and states that no person shall remove, injure, disfigure, deface, or destroy any object of archaeological or historical interest or value.

California Historical Building Code

The California Historical Building Code (CCR Title 24, Part 8) provides regulations for permitting repairs, alterations, and additions for the preservation, rehabilitation, relocation, reconstruction, change of use, or continued use of historical buildings, structures, and properties determined by any level of government as qualifying as an historical resource. An historical resource is defined in Sections 18950 to 18961 of Division 13, Part 2.7 of the Health and Safety Code and subject to rules and regulations set forth in CCR Title 24, Part 8.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the Coroner must contact the California NAHC.

Senate Bill 18

Senate Bill 18 (SB 18), signed into law in September 2004, requires that local governments consult with California Native American tribes in order to provide tribes an opportunity to participate in local land use decisions at the early planning stage for the protection or mitigation of impacts to tribal cultural places. The Governor's Office of Planning and Research is required to include the General Plan Guidelines Advice for how to conduct these consultations, which apply to adoption and amendment of general plans and specific plans, as defined in Government Code §65300 and §65450.

Assembly Bill 52

Assembly Bill 52 (AB 52), known as the Native American Historic Resource Protection Act, requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with a proposed project's geographic area, if they have requested to be notified, in order to include California Tribes in determining if a project may result in significant impacts to TCRs. TCRs may be undocumented or known only to the

Tribe. AB 52 defines a TCR as a site, feature, place, or a cultural landscape that is geographically defined in terms of size and scope, sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register or included in a local register of historical resources, or that the lead agency chooses at its discretion to treat as a TCR. When a lead agency chooses to treat a resource as a TCR, that determination shall be supported with substantial evidence, applying the criteria in the historical register and considering the significance of the resource to a California Tribe. A project that may cause substantial adverse change in the significance of a TCR is a one that may have a significant effect on the environment.

Consultation with California tribes may include, but is not limited to, discussion of the type of environmental review necessary, the significance of TCRs, the significance of the proposed project impacts on the TCRs, and alternatives and mitigation measures recommended by the tribe. Mitigation measures agreed upon must be included in the environmental document. Consultation is considered concluded when the parties agree to measures to avoid or reduce a significant impact on a TCR, or when a party concludes that mutual agreement cannot be reached. If no formal agreement on the appropriate mitigation has been established, mitigation measures that avoid or substantially lessen potential significant impacts should be implemented.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael General Plan 2020 goals, policies, and programs that are relevant to cultural resources are primarily in the Culture and Arts Element. As part of the proposed project, some existing General Plan policies would be amended, substantially changed, or new policies would be added. A comprehensive list of policy changes in General Plan 2040 is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.5.3, Impact Discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives pertaining to cultural resources and TCRs. The SRMC is organized by title, chapter, and section. Provisions related to cultural resources and TCRs are included in Title 2, Administration, as follows:

- Chapter 2.18, Historic Preservation. Section 2.18.010, Purpose, states that the City Council of San Rafael finds that structures, sites and areas of special character or special historical, architectural or aesthetic interest or value have been and continue to be unnecessarily destroyed or impaired, despite the feasibility of preserving them. It is further found that the prevention of such needless destruction and impairment is essential to the health, safety, economy and general welfare of the public. The purpose of this chapter is to promote the health, safety, economy and general welfare of the public through:
  - The protection, enhancement, perpetuation and use of structures, sites and areas that are reminders of past eras, events and persons important in local, state or national history, or which provide significant examples of architectural styles of the past or are landmarks in the history of

architecture, or which are unique and irreplaceable assets to the city and its neighborhoods, or which provide for this and future generations examples of the physical surroundings in which past generations lived;
- The development and maintenance of appropriate settings and environment for such structures, and in such sites and areas;
- The stabilization and enhancement of property values, the stabilization of neighborhoods and areas of the city, the increase of economic and financial benefits to the city and its inhabitants, and the promotion of visitor trade and interest in the city of San Rafael;
- The preservation and encouragement of a city of varied architectural styles, reflecting the distinct phases of its history: cultural, social, economic, political and architectural;
- The enrichment of human life in its educational and cultural dimensions in order to serve spiritual as well as material needs, by fostering knowledge of and civic pride in the living heritage of the past; and
- Tax reductions to owners of designated historic buildings and sites through appropriate state and federal laws.

- Chapter 2.19, Archaeological Resources. Section 2.19.010, Purpose, states that certain lands and geographic areas within the city of San Rafael contain significant archaeological resources, which include deposits and remains of the local Native Americans and other early inhabitants. These deposits and remains represent an important part of the early history of San Rafael and the culture of the Native American community. Without proper regulations and monitoring, continued excavation and grading activities within the city council significantly impact these resources.

  In recognizing the importance of protecting significant archaeological resources, the city of San Rafael has determined to:
  - Establish a procedure for identifying, when possible, archaeological resources and potential impacts to such resources prior to authorizing excavation and grading activities;
  - Provide valuable information and direction to property owners in the community in order to make them aware of these resources;
  - Implement measures that would preserve and protect valuable archaeological resources, when there is a potential for encountering such resources;
  - Establish a procedure which would ensure that appropriate advisory agencies and organizations are contacted and consulted, when there is a probability that archaeological resources could be encountered during an activity involving grading, excavation, and/or construction;
  - Establish and implement specific protection and preservation measure in the event archaeological resources are encountered during grading, excavation and/or construction.

Resolution 10980 – Procedures and Regulations for Archaeological Resource Protection

On December 3, 2001, the San Rafael City Council adopted Resolution 10980, which provides revised procedures and regulations for archaeological resource projection in the EIR Study Area. The intent of the Resolution is to ensure that archaeological resources are identified, and proper procedures are in place to treat the resource in accordance with State law, for activities that are non-discretionary or ministerial, that are considered discretionary but exempt from environmental review, and that are discretionary and subject to environmental review. As directed in the Resolution, the City maintains a data base and map of

archaeological resources, including sensitivity ratings as the starting point for project review. The Resolution includes guidelines for the level of analysis required to make a significance determination under CEQA, even if projects are non-discretionary or ministerial or exempt from environmental review.

4.5.1.2 EXISTING CONDITIONS

EIR Study Area

Ethnographic and Historic Overview

The following sections summarize the ethnographic and historic overview of the EIR Study Area. Additional detail can be found in Appendix F, Cultural Resources Data, of this Draft EIR,.

Ethnographic Overview

At the time of European settlement in the San Francisco Bay Area, the EIR Study Area was part of the Coast Miwok territory. The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

It is believed that members of the Coast Miwok were the Native Americans who met with both Sir Francis Drake and Sebastian Rodriquez Cermeño during their voyages to California. After those two contacts, the Coast Miwok were left alone for nearly 200 years until the construction of the San Francisco Presidio and Mission Dolores in 1776. Even then, Coast Miwok did not enter Mission Dolores in significant numbers until 1800.

Historic Overview

Euroamerican settlement in what would become the city of San Rafael began with the founding of an *asistencia*, or outpost of the Mission San Francisco de Assis in 1817. The *asistencia* served as a hospital for Native Americans who had been Christianized, and as a ranch in support of the San Francisco mission. In 1822, the *asistencia* became the Mission San Rafael Arcangel. The mission at San Rafael was the 20th of 21 missions established in California between 1769 and 1823. The chain of missions reached from San Diego to present-day Sonoma, and all but the last were founded under Spanish rule. The Mission San Francisco de Solano in Sonoma was erected in 1823, two years after Mexico gained independence from Spain.

Under Mexican rule, land grants were made more frequently and resulted in the unique pattern of land ownership in California. In 1834, Mexico ended the mission system in California, freeing additional lands for distribution. Mission San Rafael Arcangel was the first of the secularized missions. San Rafael lies within the Mexican land grant of Rancho San Pedro that Santa Margarita y Las Gallinas made to Timothy

Murphy in 1844; the EIR Study Area includes a small portion of Rancho Punta de Quentin, an 1840 grant to John B.R. Cooper.

San Rafael grew gradually after California statehood in 1850, entering an accelerated period of commercial and residential growth over the next several decades. Spurred by advances in transportation and train service to San Rafael, hotels and saloons were constructed to host a modest hospitality industry of summer and weekend visitors. By 1900, Fourth Street had developed into a premier commercial corridor in Marin County and the greater San Francisco Bay Area.

An influx of new residents came to San Rafael following the 1906 San Francisco earthquake and fire, triggering new residential development surrounding the downtown. The expansion of these neighborhoods created a foundation for the mixed residential/commercial areas in San Rafael and the need for additional civic services.

The opening of the Golden Gate Bridge in 1937 and the increasing popularity of the automobile created a new connectivity between Marin County and San Francisco, stimulating a period of increasing prosperity with the San Rafael's first high-rise building. By this time, San Rafael was also home to several theaters and venues to entertain the growing and diversifying population.

During World War II the San Francisco Bay Area became a major hub for wartime industry, bringing waves of migration to San Rafael. This stark increase in population necessitated a new type of housing development, resulting in the construction of housing tracts and subdivisions outside of downtown and into the eastern and northern portions of San Rafael. These events refocused downtown development to provide locally oriented goods and services to many working families now residing in San Rafael. In the years immediately after the war, San Rafael's downtown continued to prosper as department stores, restaurants, civic buildings, medical services, and institutions emerged.

From the mid-twentieth century to the present, San Rafael's downtown has continued to be centered on the Fourth Street and B Street commercial corridor. Initially centered on the Mission and maritime routes to San Francisco, San Rafael became, in turn, a railroad depot, a regional wartime economic center, an auto-oriented county seat, and the commercial and cultural center of Marin County and the greater San Francisco Bay Area.

Prehistoric and Historic Resources

Prehistoric and historic resources in the EIR Study Area are recorded on the California Historic Resources Information System (CHRIS) database, which keeps a log of all prehistoric and historic resources in the State. The State Historic Preservation Office defines cultural resources under the following categories:[3]

- **Site.** A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

[3] Office of Historic Preservation, March 1995. *Instructions for Recording Historical Resources*. (http://scic.org/docs/OHP/manual95.pdf).

- **Building**. A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. A building may also refer to a historically or functionally related unit such as a courthouse and jail, or a house and barn.
- **Structure**. The term structure is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.
- **Object**. The term object is used to distinguish from buildings and structures. These constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.
- **District**. A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Prehistoric Resources

Since 1906, 86 prehistoric sites have been documented within the EIR Study Area and are on file at the Northwest Information Center of the CHRIS.[4] A total of 67 of these sites were documented following archaeological inventories in the early 1900s. The remaining 19 sites were identified through mandated cultural resource surveys following passage of the NHPA in 1966 and CEQA in 1970. While the required archaeological resources sensitivity mapping program described in Section 4.5.1.1 provides a partial inventory of cultural resource sites, there are sections within the EIR Study Area that have not been surveyed or evaluated for resource potential. Therefore, there is potential that additional, not-yet-identified archaeological resources exist within the EIR Study Area.

Historic Resources

The Northwest Information Center of the CHRIS database includes documentation for 12 historic sites within the EIR Study Area. These include archaeological deposits associated with Euroamerican settlement and exploration, and historic buildings and structures.

As the oldest city in Marin County, San Rafael contains numerous individual properties as well as several potentially eligible districts that meet the CEQA definition of a "historical resource" (CEQA Guidelines Section 15064.5 (a)). In 1977, the San Rafael City Council adopted a citywide survey of older, architecturally interesting buildings and structures known as the Historical/Architectural Survey. The survey was last updated in 1986 and included nearly 305 properties, primarily built environment resources. Of the nearly 320 historic resources tabulated in the 1986 survey, the City recognized 16 City Landmarks and three Historic Districts Four of the resources are listed on the California Register and ten resources are listed on the National Register. The remaining properties listed in the 1986 Survey are considered potential historic resources but are not formally listed or landmarked. Together, these surveys are referred to as the 1977/86 Survey. The properties identified on the National Register, the California Register, and as City Landmarks and Historic Districts that are not in the Downtown Precise Plan Area are shown on Table 4.5-1.

[4] The locations of prehistoric sites are kept confidential to protect the integrity of archaeological sites, therefore the location of the archaeological resources are not identified in this report.

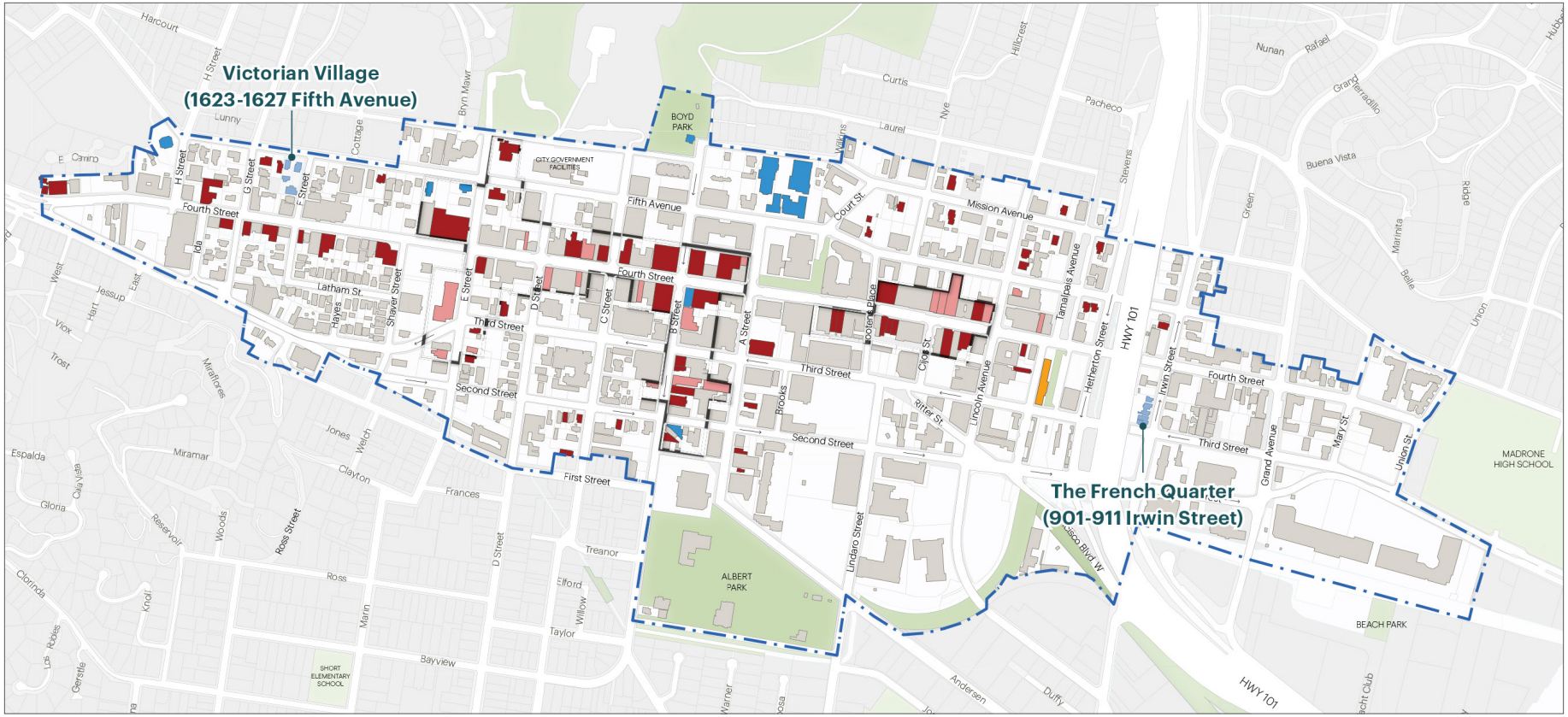
TABLE 4.5-1 HISTORIC LANDMARKS AND DISTRICTS OUTSIDE OF THE DOWNTOWN PRECISE PLAN AREA

Name	Address	Type of Listing and Year Listed		
		National Register	California Register	Local Landmark
Historic Landmarks				
Marin County Civic Center	3501 Civic Center Drive		1991	
Marin County Civic Center	N. San Pedro Road and Civic Center Drive	1991		
St. Vincent's School for Boys	1 St. Vincent Drive		1958	
China Camp	100 China Camp Village Road		1978	
China Camp	247 N. San Pedro Drive	1979		
Bradford House	333 G Street	1980		1980
Dixie Schoolhouse	2255 Las Gallinas Avenue	1972		
Robert Dollar Estate /Falkirk Mansion	1408 Mission Avenue	1972		
Robert Dollar House	115 J Street	1991		
Erskine B. McNear House	121 Knight Drive	1982		
Miller Creek School Indian Mound	Restricted	1971		
Holtwood	510 Belle			1981
The McNear Brick Barn	525-569 Biscayne Drive			1982
The Robert Dollar House	115 J Street			1984
The McNear Residence	121 Knight Drive			1981
Dr. Hawkins' Residence	418 Mission Avenue			1978
The Robert Dollar Estate/Falkirk Mansion	1408 Mission Avenue			1976
The Isaac Jessup House	10 Sentinel Court/241 West End Avenue			1978
The Jessup/Dunand House	14 Sentinel Court			1979
The Litchfield Sign	737 E. Francisco Blvd			1998
Historic District				
Grand Avenue Historic District	1811-1817 Grand Avenue			1979

Sources: City of San Rafael, 2020; National Park Service National Register of Historic Places Program, 2019; Office of Historic Preservation California Historical Resources, 2019. Note: Some resources appear more than once in this table because they are listed by more than one entity.

Downtown Precise Plan Area

This section describes the existing historic resources in the Downtown Precise Plan Area. Information in this section is based on the 1977/86 Survey and the 2019/20 Survey that was completed as part of the proposed Downtown Precise Plan. The 2019/20 Survey builds on the 1977/86 Survey, as well as research by individuals and organizations completed between 1986 and 2019. The principal findings are based on field surveys and archival research of the 2019/20 Survey, including the completion of Department of Parks and Recreation (DPR) 523 Forms for 36 eligible historic properties and two eligible historic districts. The 2019/20 Survey was completed by a team that included City staff, consultants, and volunteers from the San Rafael Heritage Commission. Figure 4.5-1 provides an overview of historic resources within the Downtown Precise Plan Area.



Source: Garavaglia Architecture.

0 1600
Scale (Feet)

- Existing historic landmarks designated prior to 2019-20 survey [10]
- Existing historic districts designated prior to 2019-20 survey [2]
- Eligible as an individual resource in 2019-20 survey [70]
- Eligible as a contributing resource in 2019-20 survey (19]
- Additional research needed [1]
- Newly identified eligible historic districts [2]

Figure 4.5-1

Existing Historic Resources in the Downtown Precise Plan Area

1977/86 Survey Historic Resources

Table 4.5-2 lists Historic Landmarks and Historic Districts in the Downtown Precise Plan Area designated as part of the 1977/86 Survey. There are two properties on the National Register of Historic Places and one that is a designated California Historic Landmark. Four other Downtown Precise Plan properties were listed by the City in the 1970s and 1980s but are not formally listed at the state or national levels.

TABLE 4.5-2 1977/86 SURVEY HISTORIC LANDMARKS AND DISTRICTS IN THE DOWNTOWN PRECISE PLAN AREA

		Type of Listing and Year Listed		
Name	Address	National Register	California Register	Local Landmark
Historic Landmarks				
Boyd House	1125 B Street	1974		1974
San Rafael Improvement Club	1801 Fifth Avenue [a]	1984		1980
Mission San Rafael Arcangel	1100 -1104 Fifth Avenue		1935	Not Listed
Mulberry House/McDermott	1149 Fourth Street [b]			1984
Chisolm Residence	1505 Fifth Avenue [b]			1979
Flatiron Building	724 B Street [b]			1982
Historic Districts				
The Victorian Village Historic District	1623-1627 5th Avenue [a]			1979
The French Quarter Historic District	901-911 Irwin			1978

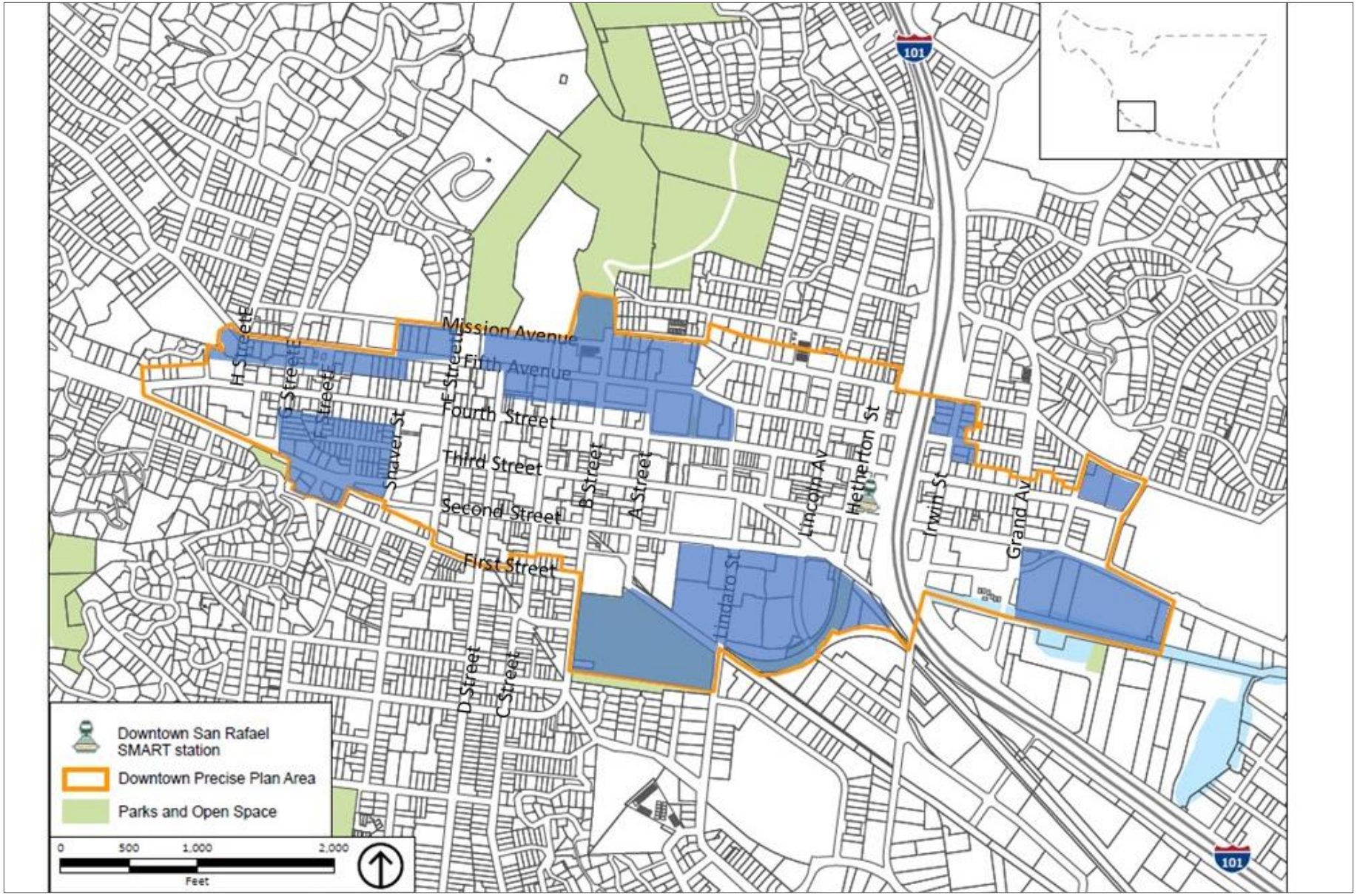
Notes: APN = Assessor's Parcel Number
a. These locations are in the West End Village Sub-Area of the proposed Downtown Precise Plan.
b. These locations are in the West Downtown Eligible Historic District identified in the 2019/20 Survey.
Source: City of San Rafael, 1977/86 Survey.

As shown in Table 4.5-2, two locally designated Historic Districts in the Downtown Precise Plan Area were identified in the 1977/86 Survey. Each Historic Districts is assigned a single Assessor's Parcel Number (APN) with multiple structures:

- The Victorian Village Historic District. This district consists of two listed structures (originally addressed as 1623 and 1627 Fifth Avenue but subsequently re-addressed as 1623, Units 1 to 4 through a condominium map filing). As part of the 1977/86 Survey, the structures were observed as being in excellent condition.
- The French Quarter Historic District. This district consists of five listed structures (901, 903, 905, 907-09, 911 Irwin Street) assigned APN 014-122-14. As part of the 1977/86 Survey, the structures were observed as being in good condition.

2019/20 Survey Historic Resources

This section summarizes the existing conditions inventory of historic resources from the 2019/20 Survey. As shown on Figure 4.5-2, not all of the properties in the Downtown Precise Plan Area were surveyed.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2020.

Figure 4.5-2

Area not surveyed

Areas Excluded from the 2019/20 Survey

Areas excluded from the 2019/20 Survey contain historic resources but are not expected to experience significant changes during the time horizon of the proposed Downtown Precise Plan. Resources located in the excluded areas that were catalogued in the 1977/86 Survey are described in this chapter. However, there may be additional resources in these areas. In the event alterations are proposed in an excluded area, additional research may be needed to determine if the structure is a historic resource.

As described in the following sections, the results of the 2019/20 Survey found that two areas in the Downtown Precise Plan Area meet eligibility criteria for Historic Districts. These are described in the context of the west and east sides of the proposed Downtown Core sub-area for the Downtown Precise Plan (see Figure 3-9 in Chapter 3, Project Description, of this Draft EIR).

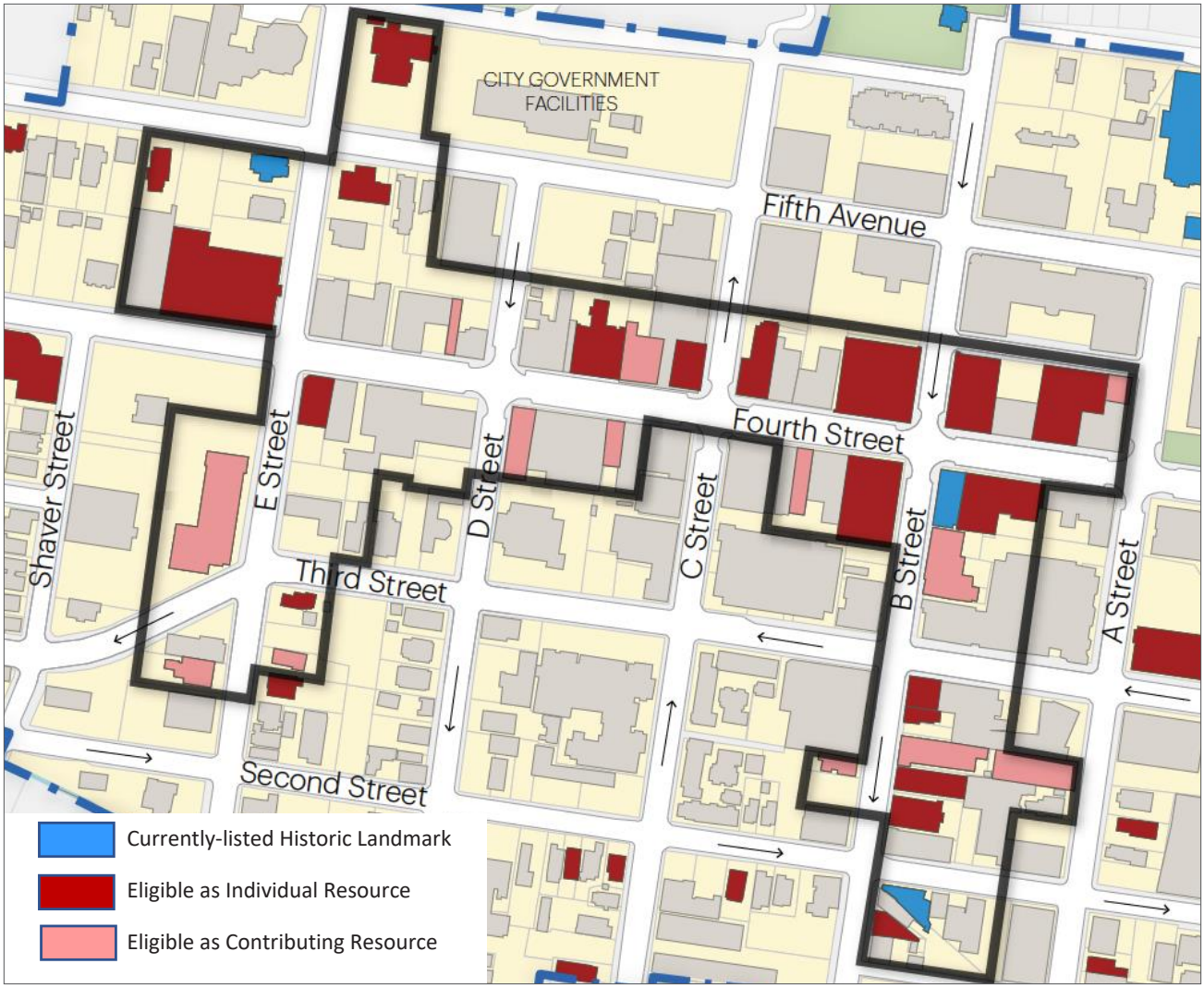
Eligible Historic Districts

Potentially Eligible West Downtown Core Historic District

Through the 2019/20 Survey, a concentrated area of historic resources was identified in an irregularly shaped area of the west side of the Downtown Core sub-area that roughly extends from Second and B Street to Fifth Avenue and E Street. This area is referred to as the potential West Downtown Core Historic District and is shown on Figure 4.5-3. The West Downtown Core Sub-Area Historic District includes 87 parcels:

- 4 existing landmarked buildings (see Table 4.5-2)
- 18 individually eligible resources
  - 13 initially identified in the 1977/86 Survey
  - 5 newly identified as eligible in the 2019/20 Survey
- 16 contributing resources
  - 7 identified in the 1977/86 Survey
  - 9 newly identified as eligible in the 2019/20 Survey
- 8 identified as good or excellent in 1977/86 Survey, but no longer meet eligibility criteria
- 42 noncontributing resources or are undeveloped

The potential West Downtown Core Historic District was determined to be eligible as a Commercial/ Civic Historic District under Secretary of the Interior Criterion 1/A for its historical associations and under Criterion C/3 for its architecture. Its “Period of Significance” spans a period of seven decades beginning in the mid-1880s, when construction began on its Victorian-era commercial buildings as well as substantial nearby residences. These buildings were frequently architect-designed and were both larger and more impressive than San Rafael’s earliest stores and houses. Commercial buildings were usually designed with two stories and features like corner towers and main facade parapets to make them appear taller. Decorative elements such as cornices with elaborate brackets and dentil molding and expensive materials like brick conveyed San Rafael’s regional importance. The buildings in the potential West Downtown Core Historic District reinforced the city’s position as the county seat to residents who traveled there from all over Marin County to shop and conduct official business. San Rafael’s predominance among other nearby towns created wealth, allowing merchants, hoteliers, and saloon-keepers to construct large, architecturally significant residences on the edges of the Downtown Precise Plan Area.



Source: PlaceWorks, 2020.

Figure 4.5-3
Eligible West Downtown Core Historic District

San Rafael retained a position of regional importance in the early 20th Century. Architectural styles changed, while the city's growth accelerated after an influx of refugees from the San Francisco Earthquake of 1906. Important early twentieth-century commercial buildings include the four-story Classical Revival Albert Department Store, the first high-rise in San Rafael. Substantial residential buildings from the period are as carefully designed as their Victorian-period counterparts while exhibiting new residential styles such as Craftsman.

San Rafael became more automobile oriented and connected to San Francisco with the opening of the Golden Gate Bridge in 1937. Notable buildings from the post-bridge era include the Art Deco Rafael Theater. Modernist commercial buildings of the early postwar era convey Downtown San Rafael's transition to a more localized center as its residential neighborhoods expanded and the County Courthouse and administrative functions moved to North San Rafael.

Table 4.5-3 indicates the status of parcels in the potential West Downtown Core Historic District. Where appropriate, Table 4.5-3 shows where a DPR 523 form has been prepared as part of the 2019/20 Survey.

TABLE 4.5-3 STATUS OF PARCELS IN THE POTENTIALLY ELIGIBLE WEST DOWNTOWN CORE HISTORIC DISTRICT

Name	Address	Rating in 1977/86 Survey	Added through 2019/20 Survey? [a]
Eligible as Individual Resource			
Keaton's Funeral Home	1022 E Street	Good	--
Retail Fourth and E NW corner	1504-1512 Fourth/ 1009 E Street	*	Yes, with DPR
Public Library	1100 E Street Avenue	*Good	Yes
Gathering Thyme/ Tam Vista Dentistry	1447 Fourth Street	Good	--
Mahon House (retail@ground)	1330 Fourth Street	Exceptional	--
Bank of Italy/Tam Commons	1300 Fourth Street	Exceptional	--
Amicis/ Peters Bldg	1000-1016 C Street, 1240-44 Fourth Street	Exceptional	--
Scandinavian Design	1200-1212 Fourth Street/1009 B Street	Good	DPR Prepared
Wells Fargo	1203 Fourth Street	*	Yes, with DPR
Albert Building	1130-1136 Fourth Street/1010-1018 B Street	Good	--
Rafael Theater	1118 Fourth Street	Exceptional	--
Wilkins Hotel/ retail	1121-1139 Fourth Street	*	Yes
Spitfire/ Mini-Market	842-848 B/ 1117 Third Street	Excellent	DPR Prepared
Players Guitars	836-840 B Street	Excellent	--
St. Vincent De Paul	820-822 B Street	Good	--
Amber Kitchen/Antiques	810-816 B Street	Excellent	--
Saigon Village	720 B Street	*	Yes, with DPR
Polaris Greystone Financial	824 E Street	Excellent	--
Eligible as a Contributing Resource			
Café del Soul/ Office	1408 Fourth Street	*	Yes
Converted School/Office	901 E Street	*	Yes
Residential	807-811 E Street	Good	--
Residential	814 E Street	Excellent	--
T&B Sports	1345 Fourth Street	*	Yes
Folk Art Gallery	1321 Fourth Street	Exceptional	--
Shoe repair/Coffee roaster	1314-1318 Fourth Street	*	Yes

TABLE 4.5-3 STATUS OF PARCELS IN THE POTENTIALLY ELIGIBLE WEST DOWNTOWN CORE HISTORIC DISTRICT

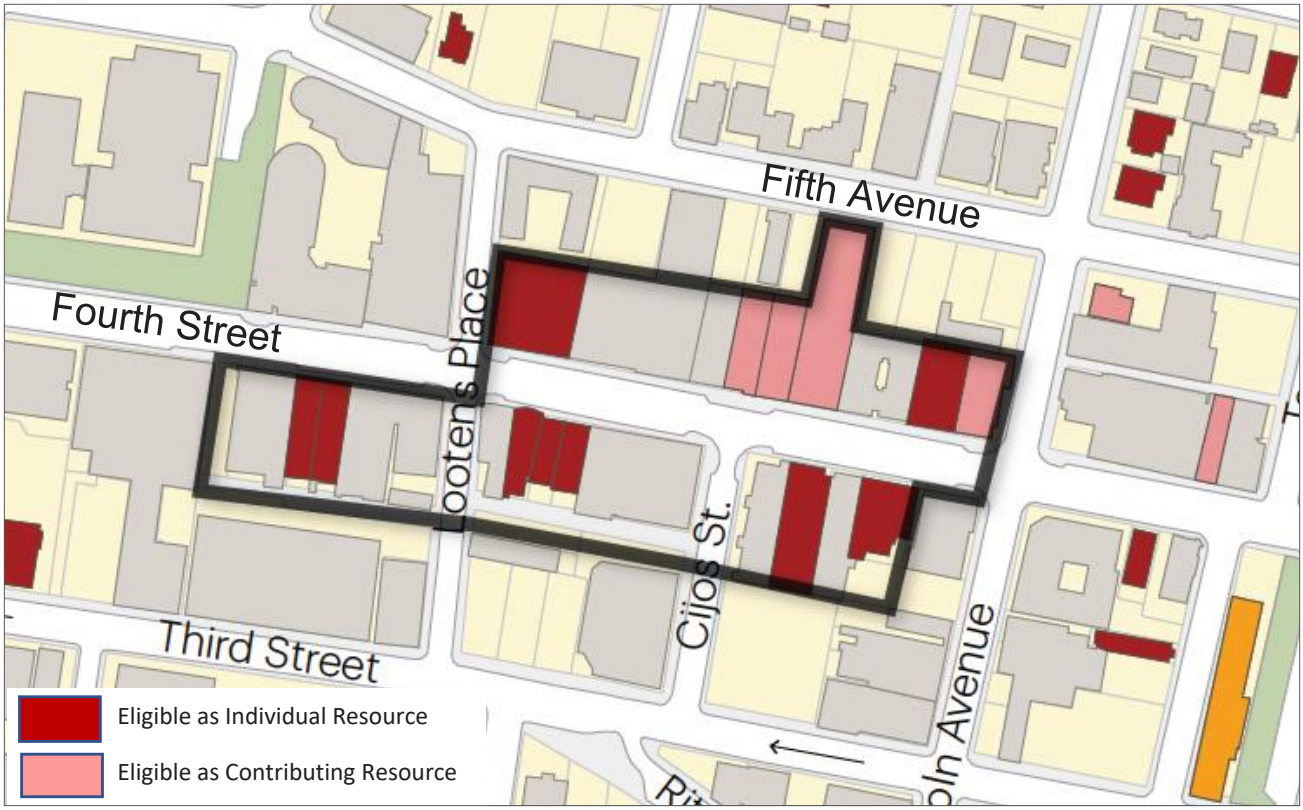
Name	Address	Rating in 1977/86 Survey	Added through 2019/20 Survey? [a]
Mulberry House (Winton's Liquors)	936 B Street (same parcel as 1149 Fourth Street)	Excellent	Yes
Garzoli Gallery	930 B Street	Good	--
Libation Taproom	920-924 B Street	Good	--
El Perol Restaurant	916 B Street	*	Yes
Uchiwa Ramen	821-823 B Street	Good	--
Haircuts/ Residential	826-832 B Street	Good	--
Foam Store	813-819 A Street	*	Yes
Gamescape, etc. (multiple buildings on parcel. 1219-1221 not included)	1219-1225 Fourth Street	Good	--
Office/ spa (multiple buildings on parcel; this is the A St structure only)	1007-1011 A Street	Good	--
Listed as Eligible in 1977/86 Survey but not in the 2019/20 Survey			
House converted to office	1018 E Street	Good	Rated "E"
Belrose Theater	1415 Fifth Avenue	Good	Rated "E"
Artworks/former Gordon Opera	1325-1335 Fourth Street	Exceptional	Rated "D"
Pleasures of the Heart Retail	1310 Fourth Street	Excellent	Rated "E"
Central Hotel/MyThai	1222-1230 Fourth Street	Good	Rated "E"
BBC Construction	1115 Second Street	Good	Rated "E"
Tenkuyu Restaurant	1313-1315 Fourth Street	Good	Bldg Replaced
Law offices	802-804 B Street	Demolished	Bldg Replaced

Notes: (*) = Not shown as eligible in 1977/86; APN = Assessor's Parcel Number.
a. The Department of Parks and Recreation (DPR) 523 is a series of forms used for recording and evaluating resources and for nominating properties as California Historical Landmarks, California Points of Historical Interest, and to the California Register of Historical Resources.
Source: City of San Rafael, 2020

Potentially Eligible East Downtown Core Historic District

Through the 2019/20 survey, a second concentrated area of historic resources was identified in a rectangular shaped area of the proposed Downtown Core sub-area that roughly extends from Court Street to Lincoln Avenue along both sides of Fourth Street. This area is referred to as the potential East Downtown Core Historic District and is shown on Figure 4.5-4. The potential East Downtown Core Historic District includes 26 parcels, including:

- 10 individually eligible resources
  - 6 initially identified in the 1977/86 Survey
  - 4 newly identified as eligible in the 2019/20 Survey
- 4 contributing resources
  - 1 initially identified in the 1977/86 survey
  - 3 newly identified as eligible in the 2019/20 Survey
- 1 resource identified in 1977/86 Survey that no longer meets eligibility criteria
- 11 non-contributing resources



Source: PlaceWorks, 2020.

Figure 4.5-4
Eligible East Downtown Core Historic District

The potential East Downtown Core Historic District is eligible under Secretary of the Interior Criterion 1/A for its historical associations and under Criterion C/3 for its architecture. Its "Period of Significance"—1898 to 1930—reflects the gradual expansion of San Rafael as commercial activity radiated outward from the Mission and Courthouse areas. Commercial buildings in this area were frequently architect designed; they are one or two stories and occupy their entire lots. Several late-Victorian-era storefront buildings are interspersed with more numerous examples of early twentieth century styles, predominantly Mission and Art Deco. Some of the later buildings feature built-in garage doors reflecting San Rafael's shift toward the automobile after 1920.

Table 4.5-4 indicates the status of parcels in the potential East Downtown Core Historic District. Where appropriate, Table 4.5-4 indicates where a DPR 523 form has been prepared as part of the 2019/20 Survey.

TABLE 4.5-4 STATUS OF PARCELS IN THE POTENTIALLY ELIGIBLE HISTORIC EAST DOWNTOWN CORE DISTRICT

Name	Address	Rating in 1977/86 Survey	Added through 2019/20 Survey? [a]
Eligible as an Individual Resource			
Masonic Building	1010 Lootens Street, 882-890 Fourth Street	Needs Study	DPR Prepared
Former Pizza Orgasmica	812 Fourth Street	Good	--
Theresa and Johnny's	813-819 Fourth Street	Good	--
Fencing Academy/Jewelers	827-831 Fourth Street	Good	DPR Prepared
Angel Antiques/Sacred Tibet	877 Fourth Street	*	Yes, with DPR
Vin Antico	881-883 Fourth Street	Good	DPR Prepared
Zhu Restaurant	885-887 Fourth Street	*	Yes, with DPR
Fenix Nightclub	917-921 Fourth Street	Good	Yes
Boiadeirus Brazilian Steakhouse	923-925 Fourth Street	Good	DPR Prepared
San Rafael Joe's	931-941 Fourth Street	*	Yes
Eligible as a Contributing Resource			
Glazed and Confused Gallery	846-850 Fourth Street	*	Yes, with DPR
George's Nightclub	842 Fourth Street	*	Yes, with DPR
Mikes Bikes	836 Fourth Street	*	Yes, with DPR
Residential above market	806 Fourth/1001-1005 Lincoln Avenue	Good	DPR Prepared
Listed as Eligible in 1977/86 but not in 2019			
All Season Soccer/ Double Rainbow	854-866 Fourth Street	Good	Rated "E"

Notes: (*) = Not shown as eligible in 1977/86; APN = Assessor's Parcel Number.
a. The Department of Parks and Recreation (DPR) 523 is a series of forms used for recording and evaluating resources and for nominating properties as California Historical Landmarks, California Points of Historical Interest, and to the California Register of Historical Resources.
Source: City of San Rafael, 2020.

Individual Eligible Resources

This section describes the properties that are eligible for listing that are not located in either the existing districts (The Victorian Village Historic District or The French Quarter Historic District) or the eligible districts (West Downtown Core Historic District or East Downtown Core Historic District). Like the eligible Historic Districts, these properties are described in the context of the proposed West End Village,

Downtown Core, Downtown Gateway sub-areas for the Downtown Precise Plan (see Figure 3-9 in Chapter 3, Project Description, of this Draft EIR).

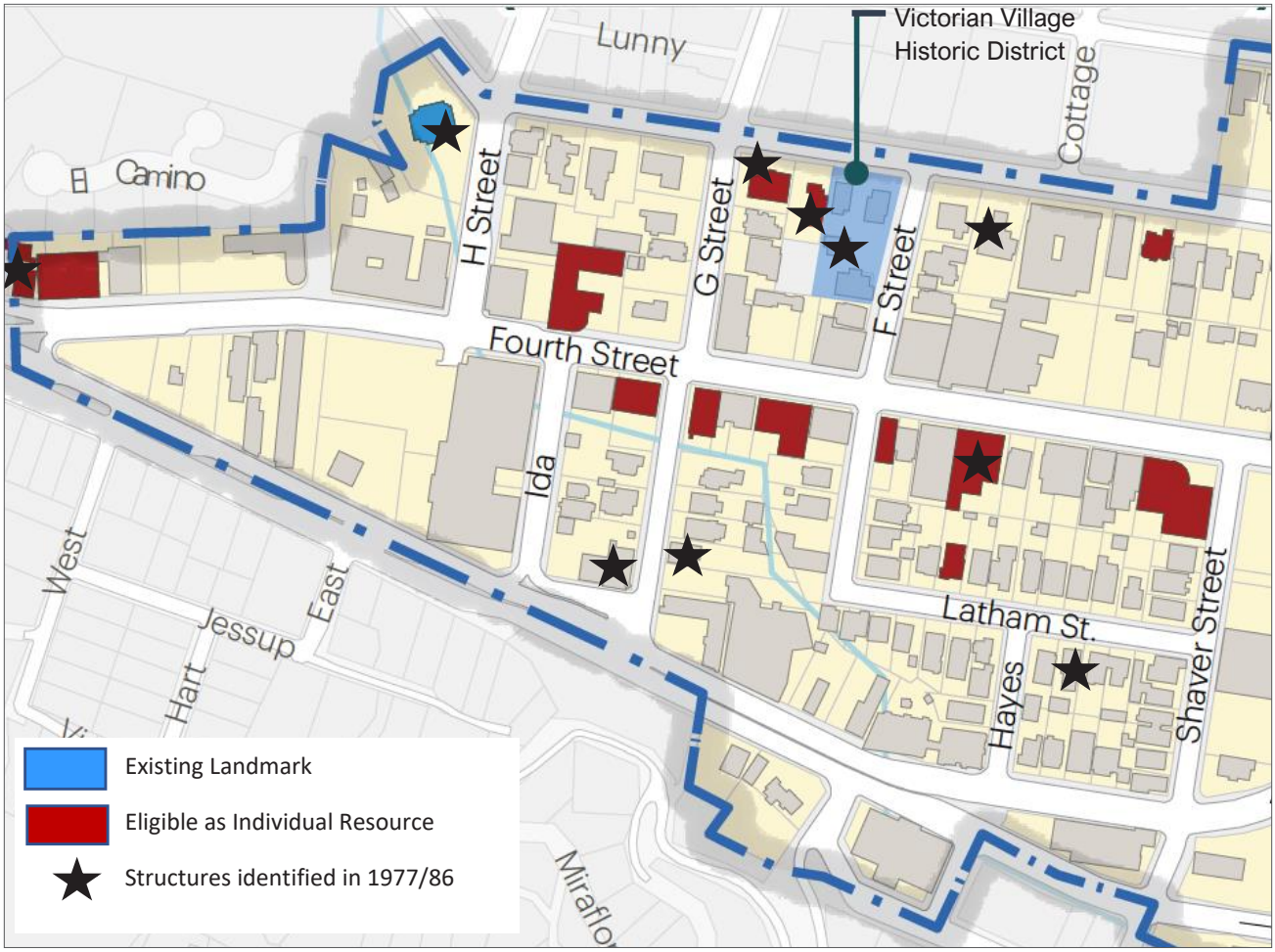
West End Village Sub-Area

The West End Village sub-area includes a National Register Historic Landmark and a designated local historic district (see Table 4.5-2). The 2019/20 Survey identified 13 additional individually eligible historic resources in the West End Village sub-area. Of this total, four had been previously identified in the 1977/86 survey and nine are newly identified. The West End Village sub-area also includes four properties that were listed in the 1977/86 Survey that were excluded from the 2019/20 Survey. Table 4.5-5 summarizes historic resource in the West End Village sub-area, including properties for which DPR forms were prepared in 2019. Figure 4.5-5 below shows the location of these resources.

TABLE 4.5-5 WEST END VILLAGE SUB-AREA HISTORIC RESOURCES OUTSIDE OF ELIGIBLE DISTRICTS

Name	Address	Rating in 1977/86 Survey	Added Through 2019/20 Survey? [a]
Residence	1629 Fifth Avenue	Good	--
Residence	1637 Fifth Avenue	Excellent	--
Residence	1539 Fifth Avenue	*	Yes, with DPR
Residence	1517 Fifth Avenue	Good	--
Cains Tire	1531 Fourth Street	*	Yes, with DPR
Mayflower Pub	1533 Fourth Street	*	Yes, with DPR
Retail/ Residential	1553-57 Fourth Street	Good	DPR Prepared
LaCrosse, Flooring, Salon	1605-09 Fourth Street	*	Yes, with DPR
Johnny's Doughnuts	1617 Fourth Street	*	Yes, with DPR
Red Dragon Yoga	1701 Fourth Street	*	Yes, with DPR
Jack Hunt Auto	1714 Fourth Street	*	Yes, with DPR
Pond Farm	1848 Fourth Street	*	Yes, with DPR
Office / ground floor store	1850-1852 Fourth Street	Good	DPR Prepared
Residence	30 Latham Street	*	Yes, with DPR
Properties Inventoried in 1977/86 Survey but not in 2019/20 Survey			
Residence	11 Latham Street	Good	Not Listed
Residence	6 G Street	Good	Not Listed
Arriverdici Restaurant	11 G Street	Good	Not Listed
Residence	1607 Fifth Avenue	Good	Not Listed

Notes: (*) = Not shown as eligible in 1977/86; APN = Assessor's Parcel Number; Table excludes properties outside of the Downtown Precise Plan Area, including north side of Fifth Avenue.
a. The Department of Parks and Recreation (DPR) 523 is a series of forms used for recording and evaluating resources and for nominating properties as California Historical Landmarks, California Points of Historical Interest, and to the California Register of Historical Resources.
Source: City of San Rafael, 2020.



Source: PlaceWorks, 2020.

Figure 4.5-5
Historic Resources in West End Village Sub-Area

Southern Downtown Core Sub-Area

The 2019/20 Survey identified ten individually eligible resources in the southern portion of the Downtown Core sub-area which are located outside of the eligible historic districts. These properties are all located between E Street on the west, A Street on the east, Fourth Street on the north, and First Street on the south. Resources in this area are shown on Figure 4.5-6 and are listed in Table 4.5-6. Most of these properties are residences and a few are commercial buildings.

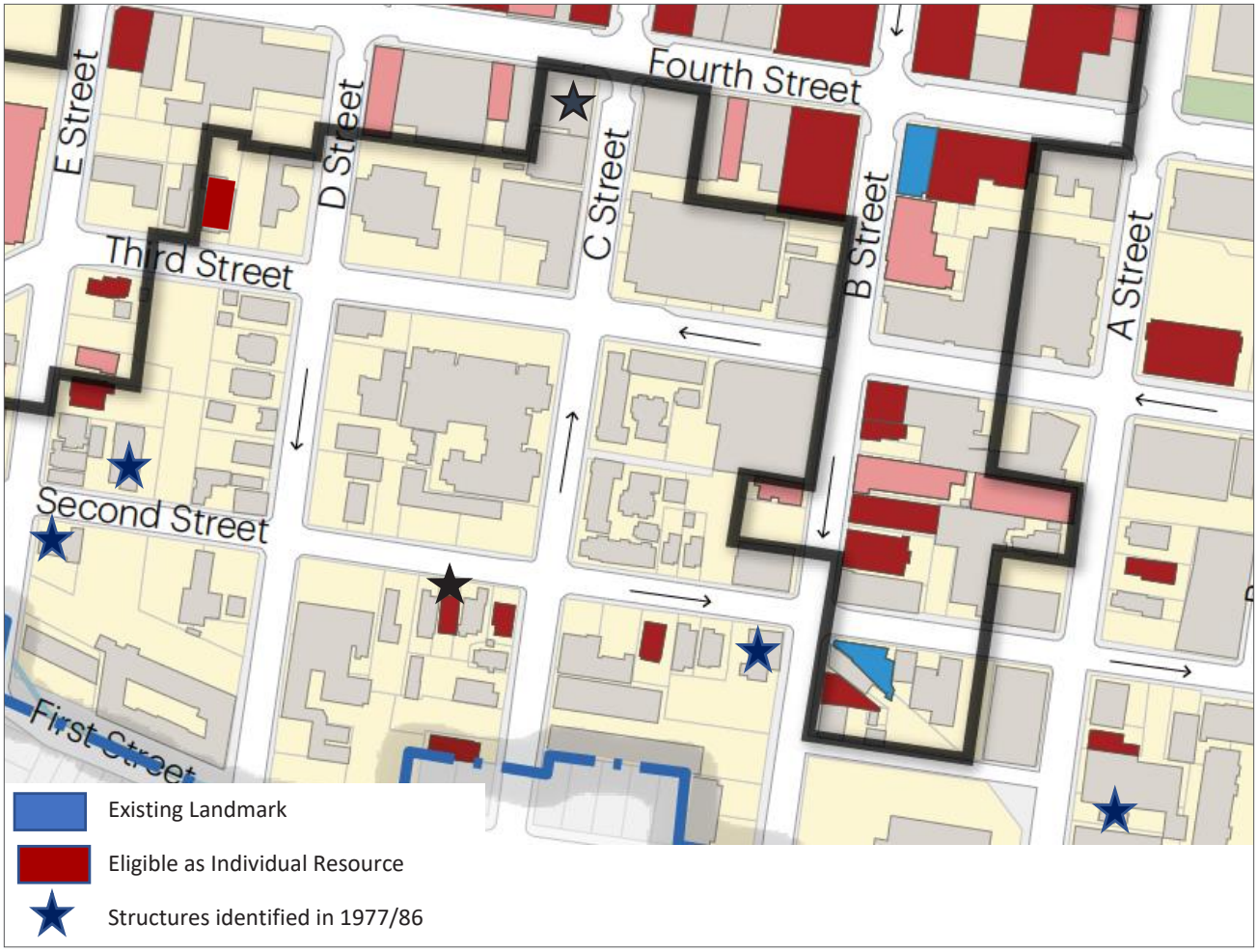
TABLE 4.5-6 SOUTHERN DOWNTOWN CORE SUB-AREA HISTORIC RESOURCES OUTSIDE OF ELIGIBLE DISTRICTS

Name	Address	Rating in 1977/86 Survey	Added Through 2019/20 Survey? [a]
Residence	1301 Second Street	*	Yes, with DPR
Residence	1215 Second Street	*	Yes, with DPR
Drummers Tradition (store)	740 A Street	*	Yes, with DPR
Residence	808 A Street	*	Yes, with DPR
Residence	810 E Street	*	Yes, with DPR
Residence	707 C Street	*	Yes, with DPR
First Federal Savings Bank	1030 Third Street	*	Yes, with DPR
Residence	1410 Third Street	*	Yes, with DPR
Relocated NWP rail depot	720 (728) A Street	Good	--
Residence	1307 Second Street	Good	--
Downtown Core Sub-Area Historic Resources Outside of Eligible Districts Inventoried in 1977/86 Survey but Not Eligible in 2019/20 Survey			
Residence	1416-20 Second Street	Good	Rated "E"
Le Comptoir Wine Bistro; Hayes Building (identified as not original)—	1301-1311 Fourth Street	Good	Rated "E"
Prandi Property Management; also known as Guenther Bldg	1321-1325 Third Street/ 822 D Street	Good	Not Listed
Pacifics Baseball Club/ Cosmopolitan Hotel	1201 Second / 747 B Street	Good	Rated "D"

Notes: (*) = Not shown as eligible in 1977/86; APN = Assessor's Parcel Number.
a. The Department of Parks and Recreation (DPR) 523 is a series of forms used for recording and evaluating resources and for nominating properties as California Historical Landmarks, California Points of Historical Interest, and to the California Register of Historical Resources.
Source: City of San Rafael, 2020.

Downtown Gateway Sub-Area

The 2019/20 Survey identified 15 individually eligible resources in the Downtown Gateway sub-area that are generally located along Fifth Avenue and Mission Avenue east of the Mission San Rafael Arcangel, and in the area around the Downtown San Rafael SMART Station. This area is shown on Figure 4.5-7. Individual historic resources within this area are listed in Table 4.5-7. Twelve of the resources in the Downtown Gateway sub-area were also identified in the 1977/86 Survey. Three structures were added through the 2019/20 Survey including properties for which DPR forms were prepared in 2019.



Source: PlaceWorks, 2020.

Figure 4.5-6
Historic Resources in Southern Downtown Core Sub-Area

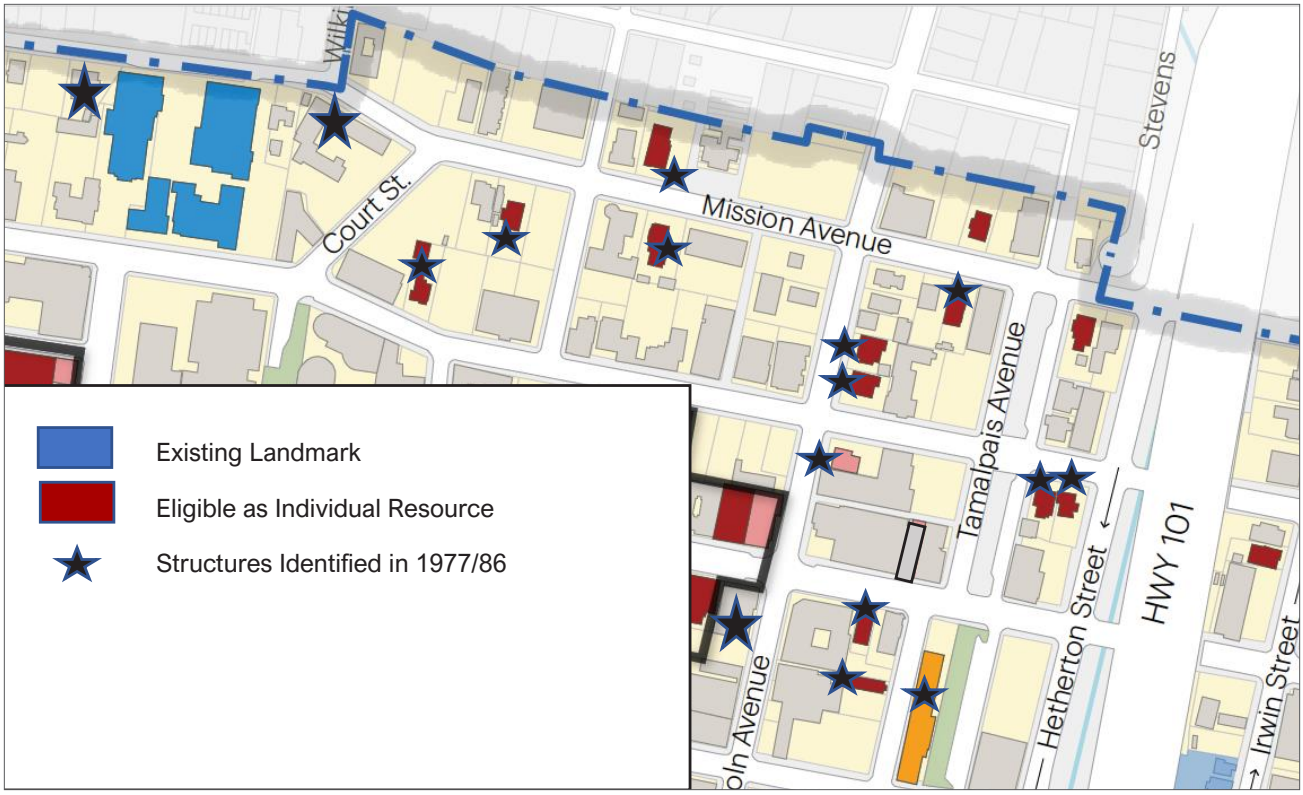
TABLE 4.5-7 DOWNTOWN GATEWAY SUB-AREA HISTORIC RESOURCES OUTSIDE OF ELIGIBLE DISTRICTS

Name	Address	Rating in 1977/86 Survey	Added Through 2019/20 Survey? [a]
Tavern on Fourth	709 Fourth Street	Excellent	--
Residential Conversion	633 Fifth Avenue	Good	--
Residential Conversion	637 Fifth Avenue	Good	--
Residence	918 Fifth Avenue	Good	--
Residence	637 Mission	*	Yes, with DPR
Residential Conversion	710 Mission	*	Yes, with DPR
Residential Conversion	705 Mission	Good	--
Residence	823-25 Mission	Exceptional	--
Residential Conversion	828 Mission	Exceptional	--
Residential Conversion	907 Mission	Excellent	--
Trevors Pub	927 Tamalpais	Good	--
Residential Conversion	1016 Lincoln	Good	--
Residence	1104 Lincoln	Good	--
Residence	1110 Lincoln	Good	--
Residence	1011 Irwin	*	Yes, with DPR
Downtown Core Properties Outside Districts Inventoried in 1977/86 Survey, not Listed in 2019/20 Survey			
Whistlestop	930 Tamalpais Ave	Good	Rated "E"
St Paul's Episcopal	1123 Court Street	Good	Rated "D"
DeCourtiex House	1135 Mission	Good	Rated "Not Individually Eligible"
Luna Travel/Boost Mobile/Office above	801 Fourth Street	Good	Rated "E"

Notes: (*) = Not shown as eligible in 1977/86; APN = Assessor's Parcel Number
a. The Department of Parks and Recreation (DPR) 523 is a series of forms used for recording and evaluating resources and for nominating properties as California Historical Landmarks, California Points of Historical Interest, and to the California Register of Historical Resources.
Source: City of San Rafael, 2020.

Preliminary Assessment of Architectural Significance

When a proposed project may adversely affect a historical resource, CEQA requires the lead agency to carefully consider the possible impacts before proceeding (PRC Section 21084.1). CEQA equates a substantial adverse change in the significance of a historic resource with a significant effect on the environment (PRC Section 21084.1). The following discussion focuses on a preliminary evaluation of properties in the Downtown Precise Plan Area for their potential to be landmarked as a significant historical resource under the federal, state or local criteria discussed in Section 4.5.1.1, Regulatory Framework, of this Draft EIR.



Source: PlaceWorks, 2020.

Figure 4.5-7
Historic Resources in Downtown Gateway Sub-Area

Based on archival records and field survey records, a shortlist of 159 properties in the Downtown Precise Plan Area were identified as warranting further assessment of their potential to be historic landmarks or district contributors. The field survey was used to determine which properties were potentially eligible as landmarks and which were likely ineligible, based on the Secretary of the Interior's Standards. Notable concentrations of historic resources in geographic proximity to each other were evaluated for their eligibility as historic "districts." Where a potential district was identified, properties within that district were identified as individual resources, contributing resources, or noncontributing resources. Contributing resources fall within the period(s) of significance identified for the district and present character-defining features unique to the property and district.

Table 4.5-8 summarizes the results of the preliminary assessment for the 159 properties identified in the 2019/20 Survey. As shown on Table 4.5-8, each property was rated for eligibility as a historic resource at either the Federal, state or City of San Rafael levels, using letter rating of "A" through "E," as described below, along with the total number of parcels in each category:

A. **Eligible Landmark.** Eligible for consideration as a historic landmark (37 parcels).
B. **Eligible Contributor, Not Landmark**. Buildings would likely not be eligible individually but could be considered eligible as contributing resources in a historic district (37 parcels).
C. **May be Eligible.** Needs Research. Require additional research for eligibility determination (15 parcels).
D. **Probably Ineligible.** Require additional research for conclusion. (10 parcels).
E. **Ineligible.** Buildings determined to be ineligible as landmarks. (60 parcels).

The survey forms used for the evaluation can be found in the *Downtown San Rafael Precise Plan Historic Resources Inventory Summary Report*, in Appendix F, Cultural Resources Data, of this Draft EIR.

TABLE 4.5-8 DOWNTOWN PRECISE PLAN AREA PROPERTIES DOCUMENTED IN DETAILED FIELD SURVEY

Name	Address	Classification [a]
NW Pacific Rail (relocated)	720 (728) A Street	A
Drummers Tradition	740 A Street	B
Residence	808 A Street	B
Residence	812 A Street	E
Foam Store	813 A Street	B
Saigon Village Restaurant	720 B Street	C
Flatiron Building	724 B Street	A
Cosmopolitan Hotel (Pacific)	747 B Street/ 1201 Second Street	D
Worldwide Antiques/Grocery	810-814 B Street	A
Albion House/Hotel Carmel	826 B Street	C
Players Guitars	834-840 B Street	A
Milani Building	844-848 B Street	A
Garatti Grocery	926-930 B Street	D
Aileen Apts./ Scandinavian Design	1009 B Street / 1200-1212 Fourth Street	A
Albert Building	1010 B Street / 1138-1146 Fourth Street	A
McDermott Bldg./ Mulberry House	938 B Street/ 1143 Fourth Street	B+
offices	707 C Street	A-

TABLE 4.5-8 DOWNTOWN PRECISE PLAN AREA PROPERTIES DOCUMENTED IN DETAILED FIELD SURVEY

Name	Address	Classification [a]
offices	710-714 C Street	E
Youth in Arts	917 C Street	E
St Paul's Episcopal	1123 Court Street	D
Marin Medical Ctr	711 D Street	C
Residence	812 D Street	E
Residence	813 D Street	C
Residence	817 D Street	C
Post Office	910 D Street	E
Residence	809-11 E Street	C
Residence	810 E Street	A
E Street Grammar School	901 E Street	C
Keaton's Funeral Home	1022 E Street	A-
Residence	105 F Street	E
Residence	633 Fifth Avenue	A
Residence	637 Fifth Avenue	A
	634 Fifth Avenue	E
	638 Fifth Avenue	E
Juice Beauty	709 Fifth Avenue	E
Merrill's Drugs	835 Fifth Avenue	D
Apartments	845 Fifth Avenue	D
Residence	918 Fifth Avenue	A
Residence	1409 Fifth Avenue	E
Residence	1517 Fifth Avenue	A
Residence	1539 Fifth Avenue	B+
Victorian Village	1623-1627 Fifth Avenue	B
Residence	1637 Fifth Avenue	A
Thomas Morris House	1629 Fifth Avenue	A
Offices	1721 Fifth Avenue	E
San Rafael Impr. Club	1800 (01) Fifth Avenue	A
	712 Fifth Avenue	E
	455 1st Street/ 1621 Second Street	E
	505 Fourth Street	E
Thai Smile	532 Fourth Street	E
Extreme Pizza	705 Fourth Street	E
Marin Center for Independent Living	710 Fourth Street	E
Tavern on Fourth	709-11 Fourth Street	A
	716 Fourth Street	E
Bayside Marin	718-24 Fourth Street	E
Old San Rafael Mall	801-05 Fourth Street	E
	807 Fourth Street	E

TABLE 4.5-8 DOWNTOWN PRECISE PLAN AREA PROPERTIES DOCUMENTED IN DETAILED FIELD SURVEY

Name	Address	Classification [a]
Pizza Orgasmica/Redhill Imports	812 Fourth Street	B
Rafael Florist/Gold Rush Jewelers	827-831 Fourth Street	A
Mikes Bikes	836 Fourth Street	B
Glaze and Confused Pottery	846 Fourth Street	B
George's Night Club	842 Fourth Street	B
	866 Fourth Street	E
MMWD with new façade	874 Fourth Street	E
Masonic Bldg.	882-84 Fourth Street/ 1010 Lootens Street	B
	881-883 Fourth Street	A
Vin Antico	885-87 Fourth Street	A
	889-91 Fourth Street	E
Former EL Camino Theater	900 Fourth Street	E
California Bakery/Fenix	917 Fourth Street	A
Boiadeirus Steakhouse	925 Fourth Street	B
Rafael Theater	1118 Fourth Street	A
State Room	1122-1132 Fourth Street	E
Wilkins Hotel	1125-1139 Fourth Street	C
Rare Coin/ Cherry Blossom Salon	1219-1223 Fourth Street	E
Gamescape	1225 Fourth Street	A
Central Hotel	1222-1230 Fourth Street	E
Peters Bldg.	1242-1244 Fourth Street	A
Bank of Italy	1300 Fourth Street	A
Hayes Bldg. (replica)	1301 Fourth Street	E
Tenkuyu (replica)	1313-1317 Fourth Street	E
Pleasures of the Heart	1310 Fourth Street	E
Folk Art Gallery	1321 Fourth Street	B
Artworks/Gordon Opera House	1327-1337 Fourth Street	D
Mahon House/ Butchart Bldg.	1322-1328 Fourth Street	A
T&B Sports	1345 Fourth Street	B
	1344-46 Fourth Street	E
	1350 Fourth/ 1040 D Street	D
	1400 Fourth Street	E
	1414 Fourth Street	E
Bombay Grill	1444-1446 Fourth Street	E
Former Redwood Bank	1447 Fourth Street	A
Former Istanbul Rug	1504-1512 Fourth Street	B
	1508-1522 Fourth Street	E
Cains Tire	1531 Fourth Street	B+
Mayflower	1533 Fourth Street	B
	1538 Fourth Street	E

TABLE 4.5-8 DOWNTOWN PRECISE PLAN AREA PROPERTIES DOCUMENTED IN DETAILED FIELD SURVEY

Name	Address	Classification [a]
	1545 Fourth Street	E
	1553-1555 Fourth Street	B
	1560 Fourth Street	E
	1569 Fourth Street	E
	1605-1611 Fourth Street	B
	1617 Fourth Street	B
	1701 Fourth Street	C
	1714 Fourth Street	C
Pond Farm	1848 Fourth Street	B
	1850-52 Fourth Street	A
	963-977 Grand Avenue	D
	1H St/ 1820 4th Street	D
	914 Irwin Street	E
Residence	1011 Irwin Street	B
	1015 Irwin Street	E
Residence	30 Latham Street	B
Sol Food	901 Lincoln Avenue	E
	1016 Lincoln Avenue	C
	1103 Lincoln Avenue	D
San Rafael House	1104 Lincoln Avenue	B
Residence	1110 Lincoln Avenue	B
Residence	1116 Lincoln Avenue	E
Residence	1118 Lincoln Avenue	C
Residence	1120 Lincoln Avenue	B
	633 Mission Avenue	E
	637 Mission Avenue	B
	705 Mission Avenue	A
	710 Mission Avenue	A
	823-25 Mission Avenue	A
Residence	828 Mission Avenue	A
Residence	907 Mission Avenue	A-
Residence	1012 Mission Avenue	E
De Courtiex House	1135 Mission Avenue	B
Residence	1145 Mission Avenue	E
	16 Ritter Street	E
	826 Second Street	E
Mackey Frames	1115 Second Street	E
	1209 Second Street	E
	1211 Second Street	C
Residence	1215 Second Street	B

TABLE 4.5-8 DOWNTOWN PRECISE PLAN AREA PROPERTIES DOCUMENTED IN DETAILED FIELD SURVEY

Name	Address	Classification [a]
Residence	1301 Second Street	B+
	1305 Second Street	E
Residence	1307 Second Street	B
Residence	1309 Second Street	E
	1315 Second Street	E
Residence	1416-1420 Second Street	E
Residence	3 Stevens Place	C
Barrel House	927 Tamalpais Avenue	B
NWP Rail Depot/ Whistlestop	930 Tamalpais Avenue	E
French Quarter	610 Third Street	E
First Federal Savings and Loan	1030 Third Street	A
	1410 Third Street	A
Residence	1414 Third Street	E
Residence	1532 Third Street	B
Marin Shakespeare	514 Fourth Street	E
Lotus Restaurant	704 Fourth Street	E
Wells Fargo	1203 Fourth Street	C
	1001 Lincoln Avenue	B
Chisolm Residence	1505 Fifth Avenue	B
San Rafael Public Library	1100 E Street	A
Victorian Village	1623 Fifth Avenue, Building C	B
Victorian Village	1623 Fifth Avenue, Building D	B

Notes: Classification categories are as follows:
A. Eligible Landmark. Eligible for consideration as a historic landmark (37 parcels).
B. Eligible Contributor, not Landmark. Buildings would likely not be eligible individually, but could be considered eligible as contributing resources in a historic district (37 parcels).
C. May be Eligible. Needs Research. Require additional research for eligibility determination (15 parcels).
D. Probably Ineligible. Require additional research for conclusion. (10 parcels).
E. Ineligible. Buildings determined to be ineligible as a landmark. (60 parcels).
Source: City of San Rafael, 2020.

Native American Consultation

Pursuant to SB 18 and AB 52, requests were sent to the NAHC for a search of the Sacred Lands File and a Tribal Consultation List. The City sent letters to representatives of the Federated Indians of Graton Rancheria listed on the NAHC Native American Contacts list in November 2018.. The City received a request for Tribal Consultation from the Federated Indians of Graton Rancheria, dated November 16, 2018.

4.5.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant cultural resources and tribal resources impacts if it would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

3. Disturb any human remains, including those interred outside of dedicated cemeteries.

4. Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: i) Listed or eligible for listing in the California Register, or in a local register of historical resources as defined in PRC Section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of the PRC Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe.

5. Result in a cumulative impact related to cultural or tribal cultural resources.

4.5.3 IMPACT DISCUSSION

CULT-1	**Implementation of the proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.**

General Plan 2040

Section 4.5.1.1, Regulatory Setting, under the subheading "Historic Resources" describes the types of cultural resources that meet the definition of historical resources under CEQA Section 15064.5. Under CEQA, both prehistoric and historic archaeological sites may qualify based on historical associations.[5] The following Impact Discussion focuses on impacts to historical architectural resources. Impacts to archaeological resources are described in Impact Discussion CULT-2, and human remains are addressed in Impact Discussion CULT-3.

As stated above in Section 4.5.1.2, Existing Conditions, there are numerous individual properties as well as several districts within the EIR Study Area that meet the CEQA definition of historical resource, including 16 City historic landmarks and three City historic districts, four California Historical Landmarks, and ten resources listed on the National Register. In establishing a policy framework to guide new development in areas where future development under the proposed General Plan 2040 could either directly or indirectly adversely affect an historic resource, the proposed General Plan 2040 would have the potential to impact historic resources.

[5] California Code of Regulations, Title 14, Chapter 3, Section 15064.5(c), Determining the Significance of Impacts on Historical and Unique Archaeological Resources.

Future development under the proposed General Plan 2040 would be required to comply with existing Federal, state, and local laws and regulations that protect historical resources. On a project-by-project basis, CEQA requires the evaluation and disclosure of significant effects on properties on historical resources listed in the National Register, California Register, or local register, and on properties determined to be significant by the lead agency or eligible for listing on the California Register. The California Historical Building Code provides standards for rehabilitating, preserving, restoring, and relocating historical resources. SRMC Chapter 2.18, Historic Preservation, includes regulations for the recording, designation, and alterations to the historic resources within the city, as well as procedures for the demolition, destruction, relocation, or removal of a designated historic resource. Compliance with these existing regulations and procedures would help to reduce the effects from potential future development on a historical resource.

Even if the historical resources were retained as potential future development and redevelopment occurs, potential future development could cause a significant impact on historical resources if the new building were incompatible with existing historic properties (for example, by introducing new construction that extends to all property lines in an area where the historical pattern is to have setbacks), or if the massing (height and bulk) or design details (materials and features) of the new building were incompatible with existing historical resources. In this sense, implementation of the proposed General Plan 2040 could impair the historic integrity of important resources with larger and denser new construction.

The proposed Community Design and Preservation (CDP) Element contains goals, policies, and programs that require local planning and development decisions to consider key characteristics that contribute to San Rafael's identity and image, and that positively reinforcing its visual character and relationship to its natural setting and cultural context. The following goal, policies, and programs would serve to minimize impact to historic resources:

Goal CDP-5: Protected Cultural Heritage. Protect and maintain San Rafael's historic and archaeological resources as visible reminders of the city's cultural heritage.

- Policy CDP-5.1 Historic Buildings and Areas. Preserve buildings and areas with special and recognized historic, architectural or aesthetic value, including but not limited to those on the San Rafael Historical/ Architectural Survey. New development and redevelopment should respect architecturally and historically significant buildings and areas.
  - Program CDP-5.1A: Preservation Ordinance. Continue to implement the City's Historic Preservation Ordinance. The Ordinance should be reviewed at least once every 10 years to ensure that its criteria, classifications, and procedures provide the most effective measures to assess proposed changes to historic properties and are consistent with Secretary of the Interior standards.
  - Program CDP-5.1B: Oversight Responsibilities. Create a more formal means of oversight for review of planning and building applications affecting historic resources. This could include a contract with an architectural historian, or an advisory committee convened as needed to advise the Planning Commission and Design Review Board on matters and policies related to preservation or the modification of historic structures. If an oversight body is created, it should represent diverse perspectives and interests.

- Policy CDP-5.2 Inventorying Historic Resources. Maintain and periodically update inventories of local historic resources, using methods that are consistent with state and federal criteria, reflect local values, and do not unreasonably constrain property rights and interests. Historic resources may include sites associated with important historic events or people, archaeological resources, and landscape elements, in addition to older buildings.
  - Program CDP-5.2A: Context Statement. Prepare a citywide historic context statement to provide the framework for evaluating a property's historic significance and integrity.
  - Program CDP-5.2B: Inventory Update. Continue to update the City's Historical/ Architecture Survey, which is an inventory of buildings of architectural value, historic buildings and/or districts and historic elements such as signs, monuments, and gates. A priority should be placed on neighborhoods with large concentrations of older structures, as well as areas most likely to experience development pressure in the future.
  - Program CDP-5.2C: Criteria for Designation. Review and adjust the criteria for designation of historic resources so they align with those of state and federal preservation agencies.
  - Program CDP-5.2D: Additional Landmarking. Based on updated historic preservation data, identify additional structures or sites for local and/or state landmark status and/or potential nomination to the National Register of Historic Places.
- Policy CDP-5.3: Districts. Encourage the formation of historic or architectural conservation districts in areas where important historic resources are concentrated and where there is property owner and community support for such designations. Such districts should provide for preservation, restoration, and greater awareness of the resources they contain, while providing financial and property tax incentives for property owners.
  - Program CDP-5.3A: Downtown Districts. Consider the designation of an additional historic district in Downtown San Rafael based on the 2019 Downtown Precise Plan field survey of Downtown properties.
- Policy CDP-5.4: Preservation Incentives. Create innovative incentives that encourage stewardship of San Rafael's historic resources. Incentives should be enacted before (or concurrently with) placing additional restrictions on historic properties, to ensure that preservation makes economic sense.
  - Program CDP-5.4A: Zoning and Development Incentives. Support the use of transfer of development rights and façade easements to encourage preservation of historic buildings.
  - Program CDP-5.4B: Local Financial Incentives. Pursue development of a local Mills Act program to allow contracts with the owners of historic properties meeting criteria to be defined by the City. The contracts allow for reduced property taxes in exchange for an agreement to maintain the historic integrity and visibility of the structure. In addition, enact reductions or waivers of local permitting fees for qualifying historic preservation projects.
  - Program CDP-5.4C: Non-Local Financial Incentives. Support financial assistance for preservation through state and federal grants and loans, tax credits, National Trust Preservation funds, the Federal Historic Preservation Tax Incentives Program, and similar programs.
- Policy CDP-5.5: Adaptive Reuse. Encourage the adaptation and reuse of historic and older buildings as a way to preserve San Rafael's heritage, especially where the original use of the building is no longer viable.
  - Program CDP-5.5A: California Historic Building Code. Use the State historic building code to relieve historic buildings from modern code requirements, thus making it easier to reuse the

building. Explore other incentivizes or code changes that allow interior spaces in older buildings to be more easily and affordably updated.

- Program CDP-5.5B: Zoning. Investigate zoning exceptions for historic structures, such as reduced on-site parking, setback, and driveway width requirements. The range of permitted or conditionally permitted uses in historic structures should be expanded to make them more viable for reuse.

- Policy CDP-5.6:Protecting the Integrity of Historic Properties. Ensure that modifications to designated historic properties, including additions, alterations, and new structures, are visually compatible with the property's contributing features, as defined by the San Rafael Municipal Code.
  - Program CD-5.6A: Certificates of Appropriateness. Continue existing requirements for "Certificates of Appropriateness" (COA) for alterations to designated historic resources. Criteria for COAs should be consistent with State and federal standards.
  - Program CDP-5.6B: Design Guidelines. Address historic preservation in the City's design guidelines, including successful examples of (a) adaptive reuse, alterations, and other changes; and (b) new infill development in the context of an older neighborhood, including examples of contemporary architecture. Infill development in older areas does not need to mimic historic development but should acknowledge and respect its context.
  - Program CDP-5.6C: Landscapes and Natural Features. Consider landscapes, gardens, mature trees, and natural features as contextually relevant when defining historic value. Encourage the preservation of such features when they are determined to be significant.

- Policy CDP-5.7: Maintenance of Historic Properties. Strongly support the maintenance of historic properties and avoid their deterioration to the point where rehabilitation is no longer feasible (e.g., "demolition by neglect").
  - Program CDP-5.7A: Incentives. Support property owner efforts to maintain and restore historic properties through fee reductions, tax credits, and Code exceptions.

As previously indicated, under CEQA, conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties will normally mitigate impacts to a less-than-significant level.

While implementation of the goals, policies, and programs identified above, as well as compliance with federal and State laws and the SRMC, would minimize potential impacts to historical architectural resources, future development in San Rafael that is on, or adjacent to, historical architectural resources could lead to:

- Demolition, which by definition results in the material impairment of a resource's ability to convey its significance.
- Inappropriate modification, which may use incompatible materials, designs, or construction techniques in a manner that alters character-defining features.
- Inappropriate new construction, which could introduce incompatible new buildings that clash with an established architectural context.

As previously indicated, under CEQA, conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties will normally mitigate impacts to a less-than-significant level. For the proposed General Plan 2040, which is a broad-based policy plan, it is not possible to determine whether individual projects would be able to attain the Secretary of Interior's Standards. Therefore, any of these

scenarios described above, but especially demolition and alteration, have the potential to change the historic fabric or setting of an architectural resource such that the resource's ability to convey its significance may be materially impaired, which would result in a *significant* impact.

Impact CULT-1: Future development in San Rafael on sites that contain a historic resource may cause the demolition, destruction, or alteration of a historic resource such that the significance of the resource is "materially impaired." Such adverse changes or potential adverse changes in the significance of a CEQA-defined historic resource would constitute a significant impact.

Mitigation Measure CULT-1: To ensure sites that contain a historic resource that are subject to demolition, destruction, or alteration, are mitigated to an acceptable level, the City shall amend Program CDP-5.1A (Preservation Ordinance).

- Modifiy Program CDP-5.1A: Update Historic Preservation Ordinance. The City of San Rafael shall modify the City's Historic Preservation Ordinance to include updated procedures to mitigate impacts from the demolition, destruction, or alteration of historic resources.
  Procedures could include the following:
  For any discretionary project involving a property that contains a historic resource, the City shall make a preliminary determination as to whether or not the project may have a potentially significant adverse effect on the historic resource. If the City determines that the project may have a potentially significant effect, the City shall require the applicant to implement, to the extent feasible, the following mitigation measures.

  (a) If feasible, the applicant shall, to City satisfaction, ensure that the project adheres to one or both of the following standards:
    - Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings; or
    - Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer.

  The project shall be reviewed by a qualified architect or architectural historian approved by the City and meeting the Secretary of the Interior's Professional Qualifications Standards published in the Code of Federal Regulations (36 CFR part 61), who shall make a recommendation to the decision-making body as to whether the project fully adheres to the Secretary of the Interior's Standards for Rehabilitation, as well as to whether any specific modifications are necessary to do so. The final determination as to a project's adherence to the Standards for Rehabilitation shall be made by the or the body with final decision-making authority over the project.

  (b) If measure (a) is not feasible, and if relocation of the historic resources is a feasible alternative to demolition, the historic resource shall be moved to a new location compatible with the original character and use of the historical resource, and its historic features and compatibility in orientation, setting, and general environment shall be retained, such that the resource retains its eligibility for listing on the California Register of Historic Resources.

If neither measure (a) nor measure (b) is feasible, the City shall, as applicable and to the extent feasible, implement the following measures in the following order:

- Document the historic resource before any changes that would cause a loss of integrity and loss of continued eligibility. The documentation shall adhere to the Secretary of the Interior's Standards for Architectural and Engineering Documentation. The level of documentation shall be proportionate with the level of significance of the resource. The documentation shall be made available for inclusion in the Historic American Building Survey (HASS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System, and the Bancroft Library, as well as local libraries and historical societies.
- Retain and reuse the historic resource to the maximum feasible extent and continue to apply the Standards for Rehabilitation to the maximum feasible extent in all alterations, additions, and new construction.
- Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site, or for reuse in new construction on the site in a way that commemorates their original use and significance.
- Interpret the historical significance of the resource through a permanent exhibit or program in a publicly accessible location on the site or elsewhere within the city limits.

Significance with Mitigation: Significant and unavoidable. Although the preceding mitigation measures are intended to mitigate impacts on historic resources from potential future development in San Rafael to the extent feasible, the impacts to historic resources may nonetheless remain significant and unavoidable at the program level because project-level details of future development proposals are unknown. This program-level impact does not preclude the finding of less-than-significant impacts for subsequent development projects that comply with Secretary of the Interior's Standards. However, due to the programmatic nature of the proposed project, no additional mitigation measures are available, and the impact is considered *significant and unavoidable*.

DOWNTOWN PRECISE PLAN

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area has the potential to cause the demolition, destruction, or alteration of a historic resource such that the significance of the resource is materially impaired. The proposed Downtown Precise Plan addresses the regulation of historic resources in Chapter 3, Design Principals and Guiding Policies; Chapter 5, Historic Resources; Chapter 8, Implementation; and Chapter 9, Downtown Form Based Code.

Chapter 3, Design Principles and Guiding Policies, includes the following guiding policies, which are intended to provide guidance in evaluating strategies and actions for implementing the Plan vision.

- Guiding Policy 6A. Protect historic and cultural landmarks and celebrate them in the design of the built form and public realm.
- Guiding Policy 6B. Use appropriate historic preservation tools to safeguard the built character of historic resources while accommodating sensitive modifications and additions as needed.

- Guiding Policy 6C. Maintain and regularly update the inventory of notable historic and cultural resources in Downtown.
- Guiding Policy 6D. Employ the Form-Based Code to guide the physical form of new development on sites adjacent to Downtown's historic resources.
- Guiding Policy 6E. Utilize preservation and adaptive use strategies, and incentivize private developers to reinvest in existing buildings and redevelop sites with historic or cultural resources.
- Guiding Policy 6F. Plan activities and events focused on raising awareness about Downtown's history and cultural heritage.

Chapter 5, Historic Resources, of the Downtown Precise Plan provides an overview of historic resources in the DTPP area, including the historical context, existing preservation policies and regulations, a summary of the 2019/20 survey and inventory of historic resources (described in detail below), identification of two new historic districts, recommendations for a historic preservation ordinance, and procedures for additions, alterations, and demolition. Section 5.6, Procedures for Additions, Alterations, and Demolition, lists the criteria used to determine if a rehabilitation project qualifies as a "certified rehabilitation" under the Secretary of the Interior's Standards for Rehabilitation, as listed above in Section 4.5.1.1 under Federal Regulations. Section 5.6 of the proposed Downtown Precise Plan also includes regulating tables to provide guidance for future modifications and alterations to historic resources in the Downtown Precise Plan Area. Table 5A lists the allowed modifications to historic structures based on their status, and Table 5B lists allowed modifications for structures adjacent to historic resources. Table 5C lists procedures to be followed for modifications and alterations for different types of resources in the Downtown Precise Plan Area.

Chapter 8, Implementation, of the Downtown Precise Plan, includes Section 8.3, Recommended Actions. Subsection A., Historic Resources Management, lists the following actions for protecting historic resources in the Downtown Precise Plan Area:

1. Refine "Chapter 2.18- Historic Preservation" in the San Rafael Municipal Code. Refer to Section 5.5: Recommendations for Historic Preservation Ordinance for additional details.
    - Action 1A. The Plan recommends that the City appoint one of the following, as feasible:
        - A full Historic Preservation Commission as is recommended by the California Office of Historic Preservation (OHP)—note that the OHP recognizes this option may not be feasible in all cases; or
        - An advisory committee made up of a Design Review Board member, a Planning Commission member and an architectural historian who has up-to-date training on current preservation standards; or
        - An on-call professional Architectural Historian familiar with CEQA compliance.
    - Action 1B. Align with CA OHP procedures for evaluating and designating individual historic resources and Historic Districts, including industry accepted definitions.
    - Action 1C. Create a full suite of historic preservation economic and feasibility incentives.
    - Action 1D. Establish a clear process for local designation.
    - Action 1E. Add guidelines to relocate designated resources per Criteria Consideration B ("Moved Properties of the National Register of Historic Places Criteria for Designation") to avoid demolition when feasible.

TABLE 5A. ALLOWED MODIFICATIONS TO DOWNTOWN HISTORIC RESOURCES BASED ON HISTORIC STATUS

	National/ State/ Local Landmark	Individual Resource	Contributing Resource
House-Form Historic Resource			
Demolition	Not permitted	Not permitted	Permitted. Must avoid a cumulative or significant impact to the district, determined by a qualified architectural historian.
Relocation	Not permitted unless under threat of demolition in current location and with qualified historian's approval.	Not permitted unless under threat of demolition in current location and with qualified historian's recommendation.	Not permitted unless under threat of demolition in current location and with qualified architectural historian's recommendation.
Additions	Permitted up to 10 feet *, following Downtown Form-Based Code standards including Supplemental Standards complying with SISR #9.	Permitted up to 10 feet *, following Downtown Form-Based Code standards including Supplemental Standards complying with SISR #9.	Permitted up to 10 feet *, following Downtown Form-Based Code standards including Supplemental Standards complying with SISR #9.
Alterations	Permitted. Must comply with SISR #2: avoid altering defining features.	Permitted. Must comply with SISR #2: avoid altering defining features.	Permitted. Must comply with SISR #2: avoid altering defining features.
Repairs	Permitted. Must comply with SISR #6: maintain Integrity and be compatible/ differentiated.	Permitted. Must comply with SISR #6: maintain integrity and be compatible/ differentiated.	Permitted. Must comply with SISR #6: maintain integrity and be compatible/ differentiated.
Block-Form Historic Resource			
Demolition	Not permitted	Not permitted	Permitted. Must avoid a cumulative or significant impact to the district, determined by a qualified architectural historian.
Relocation	Not permitted unless under threat of demolition in current location and with qualified historian's recommendation.	Permitted only if under threat of demolition in current location.	Relocation
Additions	Permitted up to 20 feet following Downtown Form-Based Code standards including Supplemental Standards complying with SISR #9.	Permitted up to 20 feet *, following Downtown Form-Based Code standards including Supplemental Standards complying with SISR #9.	Additions
Alterations	Permitted. Must comply with SISR #2: avoid altering defining features.	Permitted. Must comply with SISR #2: avoid altering defining features.	Alterations
Repairs	Permitted. Must comply with SISR #6: maintain integrity and be compatible/ differentiated.	Permitted. Must comply with SISR #6: maintain integrity and be compatible/ differentiated.	Repairs

* Guidelines for the historic district apply to the district as a whole and as it's own resource being made up of all contributors and individually eligible buildings within it, not the individual buildings, which are discussed in subsequent portions of the chart. The recommendations for the number of additional stories allowed as stated in this table are as per industry best practices. In cases where this may not be a viable solution, the recommendation of a qualified historian may be considered as an alternative.

TABLE 5B. ALLOWED MODIFICATIONS TO DOWNTOWN NON-HISTORIC STRUCTURES ADJACENT TO HISTORIC RESOURCES

	Non-Historic House-Form Structures Adjacent to a Historic Resource	Non-Historic Block-Form Structures Adjacent to a Historic Resource
Demolition	Permitted, but must avoid potential damage through vibration or otherwise.	Permitted, but must avoid potential damage through vibration or otherwise.
Relocation	Permitted, but must avoid potential damage.	Permitted, but must avoid potential damage.
Additions	Permitted up to 1 story*, following Downtown Form-Based Code standards including Supplemental Standards.	Permitted up to 2 stories*, following Downtown Form-Based Code standards including Supplemental Standards.
Alterations	Permitted. Must comply with Downtown Form-Based Code including Supplemental Standards.	Permitted. Must comply with Downtown Form-Based Code including Supplemental Standards.
Repairs	Permitted.	Permitted.

CULTURAL AND TRIBAL CULTURAL RESOURCES

TABLE 5C. PROCEDURAL OPTIONS FOR DIFFERENT CATEGORIES OF PROJECTS IN THE PLAN AREA

Category 1 Non-resource with no adjacency	Category 2 Non-resource with adjacency
- Not a historic resource - Outside historic district - Not adjacent to a historic resource	- Not a historic resource but inside a historic district - Adjacent to a historic resource or historic district boundary (outside boundary)
Downtown Form-Based Code applies	Downtown Form-Based Code applies (step-backs or setbacks according to Code's Supplemental Standards)
Staff review and approval	

Category 3 Contributing Resources		Category 4 Individual Resources + Landmarks	
Contributing resource inside historic district: addition/ alteration	Contributing resource inside historic district: demolition*	Individual resource: addition/ alteration	Individual resource or individual resource which is also a contributor: demolition*
↓	↓	↓	↓
Downtown Form-Based Code applies (step-backs or setbacks according to Code's Supplemental Standards)	Additional Historic Preservation impact analysis on historic district including cumulative impacts	Downtown Form-Based Code applies (step-backs or setbacks according to Code's Supplemental Standards)	CEQA/ EIR analysis to assess impacts to an individual resource or to the individual resource and historic district
↓	If no significant impact: **Planning Commission approval** / If significant impact: **CEQA/ EIR process** to be followed	↓	↓ / If impact: **no project** without overriding consideration
Additional Historic Preservation impact analysis if potential or cumulative impacts on District are possible		If addition/ alteration exceeds Code's Supplemental Standards, additional Historic Preservation impact analysis for potential or cumulative impact on historic district or resource	
↓	↓	↓ / ↓	If no impact on individual resource and meets Code's Supplemental Standards and SISR standards but may impact historic district, additional Historic Preservation impact analysis
If no impact: **Staff/ Planning Commission approval** (depending on project complexity)	If impact: **CEQA/ EIR process** to be followed	If no impact: **Planning Commission discretionary review** / If impact: **CEQA/ EIR process** to be followed	↓
			Planning Commission discretionary review and approval

* Demolitions must be tied to a specific project

2. Maintain Inventory and Map of Historic Resources
   - Action 2A. Maintain the City's recently prepared historic context statement by updating it every five years.
   - Action 2B. Maintain an inventory and map of the historic resources in Downtown, informed by a field survey and updated every five years.
   - Action 2C. Maintain the inventory of historic resources in the City's Geographic Information Systems (GIS) database.
3. Streamline Permitting Processes and Procedures. Refer to Section 5.6: Procedures for Additions, Alterations and Demolition for additional details.
   - Action 3A. Assess and streamline planning procedures and permitting processes for review of projects involving historic resources, and eliminate possible redundancies and extraneous processes. Adopt the guidance and procedures described in Section 5.6 and illustrated in Tables 5A and 5B. Establish clear procedures compliant with The Secretary of the Interior's Standards for the Treatment of Historic Properties for individual properties, and in identified eligible historic districts.
4. Develop Educational Materials for Historic Resources
   - Action 4A. Develop educational materials for building owners (and potential owners) of historic resources, including information on grants and other sources of funding for maintaining the properties. This will further the preservation and development goals of San Rafael and provide factual info about the opportunities, benefits, and responsibilities for historic building ownership.
5. Offer Design Guidance
   - Action 5A. To create efficiencies early on in the development of a project, design guidance should be provided to current and potential owners of historic resources in Downtown. This should be done in advance of design guidelines.
6. Preservation Recognition and Education Programs
   - Action 6A. Develop programs to celebrate and educate the citizens about their City's history and built environment.
   - Action 6B. Provide information about the sustainability of preservation and rehabilitation of older structures, as compared to new construction.

Chapter 9, Form Based Code, contains regulatory standards intended to guide future development near historic resources in the Downtown Precise Plan Area. Section 3.2.070 Historic Resource Adjacency Standards requires that:

- The massing of any new building or proposed modification on or immediately adjacent to a historic resource, as identified in the Regulating Plan, reflect the scale of the adjacent historic resource by matching the ceiling heights of the first and second floor with that of the resource.
- Where new development is immediately adjacent to a "house-form historic resource," a minimum 20-foot forecourt is required immediately adjacent to the historic resource, and that the new development be setback from the sidewalk to match the setback of the historic resource.
- For additions to existing historic resources, the additions must be set back from the historic façade as determined by the City's Architectural Historian and Design Review; be limited to one or two stories,

depending on the zone, and must be in compliance with all standards of the zone and Secretary of the Interior's Standards for Rehabilitation #9 (New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.)

The Downtown Precise Plan includes a set of Procedures for Additions, Alterations, and Demolition (Section 5.6) to allow a level of modification to a structure, that are based on the Secretary of the Interior's Standards for a "Certified Rehabilitation." The Downtown Precise Plan also includes Form Based Code regulatory standards that regulate building massing, height, and setbacks for new projects adjacent to landmarked buildings, and for alterations to landmarked buildings.

As previously indicated, under CEQA, conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties will normally mitigate impacts to a less-than-significant level. Within the Downtown Precise Plan, only the Procedures for Additions, Alterations, and Demolition allow alterations or additions to a historic resource to allow new uses. Under the Standards for Rehabilitation, new additions, alterations, or adjacent new construction must not destroy character-defining features, spaces and spatial relationships. New work must be differentiated from the old and must be compatible with the historic materials, features, size, scale, proportion, and massing. New additions, alterations and new construction must be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Through approval of the Downtown Precise Plan, the City is directing future infill growth through higher density development into an area with a high concentration of historic resources. As shown in Table 4.5-8, Downtown Precise Plan Area Properties Documented in Detailed Field Survey, of the 159 sites surveyed, 37 parcels were found to be eligible for consideration as a historic landmark; 37 parcels were found likely not to be eligible individually, but could be considered eligible as contributing resources in a historic district; 15 parcels require additional research for eligibility determination; 10 parcels were found to be likely ineligible, but require additional research for conclusion; and 60 parcels were found to be ineligible as a landmark.

In some cases, it can be very challenging to accommodate the needs of new uses while fully adhering to the Standards for Rehabilitation and, in many situations, it can be altogether infeasible. In addition, changes to the condition of historic resources and their surroundings between now and the time that individual development proposals are received for specific properties could affect the extent to which the DTPP's historic resource protection provisions can effectively mitigate potential impacts on historic resources.

As a result, for all but the 60 parcels identified in the 2019/20 Survey as ineligible for landmarking status, it cannot be determined at this time, without consideration of a specific development proposal, whether it would be feasible to mitigate to a less than significant level the impacts of any given subsequent development project under the Downtown Precise Plan involving properties that contain historic resources. Accordingly, like the General Plan 2040, impacts would be *significant and unavoidable*.

Significance with Mitigation: Significant and unavoidable. An evaluation of project-specific details for future development could demonstrate future projects meet the Secretary of Interior's Standards; therefore, this program-level conclusion does not prohibit a less-than-significant conclusion at the project level in the future.

CULT-2 Implementation of the proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

General Plan 2040

Archaeological deposits that meet the definition of historical resource under CEQA Section 21084.1 or CEQA Guidelines Section 15064.5 could be present within the study area and could be damaged or destroyed by ground-disturbing construction activities (e.g., site preparation, grading, excavation, and trenching for utilities) associated with development allowed under the General Plan. Should this occur, the ability of the deposits to convey their significance, either as containing information about prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired.

The proposed Community Design and Preservation (CDP) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts to cultural resources, including archaeological resources. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on archaeological resources:

Goal CDP-5: Protected Cultural Heritage. Protect and maintain San Rafael's historic and archaeological resources as visible reminders of the city's cultural heritage.

- Policy CDP-5.13: Protection of Archaeological Resources. Protect significant archaeological resources by:
  - Consulting the City's archaeological resource data base prior to issuing demolition or construction permits in known sensitive areas.
  - Providing information and direction to property owners to make them aware of these resources and the procedures to be followed if they are discovered on-site.
  - Identifying, when possible, archaeological resources and potential impacts on such resources.
  - Implementing measures to preserve and protect archaeological resources, including fines and penalties for violations.
  - Program CDP-5.13A: Archaeological Resources Ordinance. Continue to implement the existing Archaeological Resources Ordinance and the City's Archaeological Resources data base.
- Policy CDP-5.14: Tribal Cultural Resources. Coordinate with representatives of the Native American community to protect historic Native American resources and raise awareness of San Rafael's Native American heritage.
  - Program CDP-5.14A: AB 52 Compliance. Implement the requirements of Assembly Bill 52 by providing opportunities for meaningful input from Native American representatives in the development review process.

- Program CDP-5.14B: Protection of Tribal Resources. Incorporate standard approval conditions in future development projects that ensure that Native American resources are protected during construction. In the event tribal resources are discovered, earth-disturbing work must be temporarily suspended pending evaluation by a qualified archaeologist and an appropriate Native American representative. Where appropriate, a mitigation plan shall be developed in accordance with state guidelines and tribal input.

As discussed in Section 4.5.1.2, Existing Conditions, 86 prehistoric archaeological sites have been documented within the EIR Study Area. There could be not-yet-identified archaeological resources within the EIR Study Area.

As discussed in Chapter 3, Project Description, of this Draft EIR, the proposed project would increase future development in existing urban areas within the EIR Study Area, half of which growth would occur in the Downtown Precise Plan Area. Compliance with existing federal, State, and local laws and regulations, and the proposed General Plan 2040 goals, policies, and programs listed above would protect recorded and unrecorded archaeological deposits in the greater EIR Study Area by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. However, some future projects could result in substantial excavation at significant depths below the ground surface where no such excavation has previously occurred. Such excavation activities could disturb unidentified subsurface materials that have the potential to contain prehistoric archaeological resources, including unrecorded Native American prehistoric archaeological sites. In such a case, without proper consultation with Native American Tribes, impacts to archaeological resources would be *significant*.

Impact CULT-2: Implementation of the proposed project could have the potential to cause a significant impact to an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

Mitigation Measure CULT-2: To ensure sites where archaeological resources are unearthed during the construction phase of development projects are mitigated to an acceptable level, the City shall amend Program CDP-5.13A (Archaeological Resources Ordinance).

- Modify Program CDP-5.13A: Update Archaeological Resources Ordinance. The City of San Rafael shall modify the City's Archaeological Resources Ordinance to include construction best management practices to follow if a potentially significant archaeological resource is encountered during ground disturbing activities.

  Best management practices could include:
  - All construction activities within a 100-foot radius of the find shall cease until a qualified archaeologist determines whether the resource requires further study.
  - All developers in the study area shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement.
  - Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist.

- If the resource is a tribal resource, the consulting archaeologist shall consult with the appropriate tribe to evaluate the significance of the resource and to recommend appropriate and feasible avoidance, testing, preservation or mitigation measures, in light of factors such as the significance of the find, proposed project design, costs, and other considerations.
- If avoidance is infeasible, other appropriate measures (e.g., data recovery) may be implemented.
- If the resource is a nontribal resource determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant.
- The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources.
- The report shall be submitted to the City of San Rafael, Northwest Information Center, and State Historic Preservation Office, if required.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area could unearth unknown archaeological resources. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to archaeological resources; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance with Mitigation: Less than significant.

CULT-3 Implementation of the proposed project would not disturb any human remains, including those interred outside of dedicated cemeteries.

General Plan 2040

Human remains associated with precontact archaeological deposits could exist in the EIR Study Area and could be encountered at the time potential future development occurs. The associated ground-disturbing activities, such as site grading and trenching for utilities, have the potential to disturb human remains interred outside of formal cemeteries. Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Marin County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the NAHC within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant

(MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. If the NAHC is unable to identify a MLD, the MLD fails to make a recommendation within 48 hours after being notified, or the landowner rejects the recommendation of the of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance.

Descendant communities may ascribe religious or cultural significance to such remains and may view their disturbance as an unmitigable impact. Disturbance of unknown human remains would be a *significant* impact.

Impact CULT-3: Ground-disturbing activities as a result of future development in the EIR Study Area could encounter human remains, the disturbance of which could result in a significant impact under CEQA.

Mitigation Measure CULT-3: To ensure human remains that are unearthed during the construction phase of development projects are protected, the City shall adopt a new Program to support Policy CDP-5.13 (Protection of Archaeological Resources).

- New Program: Human Remains. Any human remains encountered during ground-disturbing activities would be required to be treated in accordance with California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, and the California Code of Regulations Section 15064.5(e) (CEQA), which state the mandated procedures of conduct following the discovery of human remains.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area could unearth human remains. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to the protection of human remains; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant with mitigation.*

Significance with Mitigation: Less than significant.

CULT-4	**Implementation of the proposed project would not cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: i) Listed or eligible for listing in the California Register, or in a local register of historical resources as defined in PRC Section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of the PRC Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe.**

General Plan 2040

As previously described in Section 4.5.1.1, Regulatory Framework, a TCR is defined under AB 52 as a site, feature, place, cultural landscape that is geographically defined in terms of size and scope, sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register or included in a local register of historical resources, or if the City of San Rafael, acting as the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as a TCR.[6]

As discussed under impact discussions CULT-2 and CULT-3, impacts from potential future development in the EIR Study Area could impact unknown archaeological resources, including Native American artifacts and human remains.

Compliance with existing federal, State, and local laws and regulations, and the General Plan goals, policies, and programs listed under CULT-2 would protect unrecorded TCRs in the EIR Study Area by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Furthermore, implementation of Mitigation Measures CULT-2 and CULT-3 would reduce any impacts to a TCR discovered in the EIR Study Area as a result of future development under the proposed project.

Impact CULT-4: Ground-disturbing activities as a result of future development under the proposed project could encounter Tribal Cultural Resources, the disturbance of which could result in a significant impact under CEQA.

Mitigation Measure CULT-4: Implement Mitigation Measures CULT-2 and CULT-3.

Significance with Mitigation: Less than significant.

[6] Public Resources Code Sections 21074(a)(1) and (2).

Downtown Precise Plan

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area could unearth unknown TCRs. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to TCRs; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant with mitigation.*

Significance with Mitigation: Less than significant.

CULT-5 Implementation of the proposed project would cause impacts that are cumulatively considerable when viewed in connection with the effects of past, present, and reasonably foreseeable projects.

The impacts of potential future development under implementation of the proposed project on cultural resources and TCRs tend to be site specific, and cumulative impacts would occur when a series of actions leads to the loss of a substantial type of site, building, or resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such resources on a project-by-project basis could constitute a significant cumulative effect. This is most obvious in historic districts, where destruction or alteration of a percentage of the contributing elements may lead to a loss of integrity for the district overall. For example, changes to the setting or atmosphere of an area by adding modern structures on all sides of a historically significant building, thus altering the aesthetics of the streetscape, would create a significant impact. Destruction or relocation of historic buildings would also significantly impact the setting.

Future development planned for under the General Plan 2040 would be primarily located within the developed portions of the EIR study area, this, in conjunction with buildout of the city and the region, has the potential to cumulatively impact historical resources. As previously discussed, impacts to historic architectural resources would be mitigated with implementation of Mitigation Measure CULT-1 on a project-level, but would be significant and unavoidable at the program level due to the lack of development level details. Impacts to archaeological resources, human remains, or TCR's identified within the areas of potential development in the EIR study area and implementation of Mitigation Measures CULT-2, CULT-3, and CULT-4 would reduce these impacts to a less-than-significant level. Additionally, the existing federal, State, and local regulations and General Plan goals, policies and programs described throughout this chapter serve to protect cultural resources in San Rafael. Continued compliance with these regulations substantially decrease potential impacts to historical resources, archaeological resources, human remains, and TCRs to the maximum extent practicable.

Significance with Mitigation: Significant and Unavoidable. While implementation of Mitigation Measures CULT-2, CULT-3, and CULT-4 would reduce impacts to archaeological resources, human remains, and TCRs to a less-than-significant level, it is unknown if future projects that are proposed on sites or adjacent to sites with historic buildings would be able to achieve the Secretary of Interior's Standards at the program level. Therefore, this impact remains *significant and unavoidable*.

4.6 ENERGY

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to energy demand, energy conservation, and energy infrastructure. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts.

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 REGULATORY FRAMEWORK

Federal Regulations

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act contains provisions designed to increase energy efficiency and availability of renewable energy. This act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliances and equipment.

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. This act includes tax incentives for energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, the National Energy Policy is designed to help the private sector and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair, and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

Update to Corporate Average Fuel Economy Standards (2021 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the United States Environmental Protection Agency (USEPA) finalized updated CAFE and greenhouse gas (GHG) emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. A consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards

nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle GHG emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that these auto companies will only sell cars in the United States that meet these standards.

State Regulations

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the *Long Term Energy Efficiency Strategic Plan*, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. The *Long Term Energy Efficiency Strategic Plan* sets forth the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020;[1]
- All new commercial construction in California will be zero net energy by 2030;
- Heating, ventilation, and air conditioning, commonly referred to as "HVAC," will be transformed to ensure that its energy performance is optimal for California's climate; and
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

With respect to the commercial sector, the *Long Term Energy Efficiency Strategic Plan* notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's five billion-plus square feet of space accounts for 38 percent of the State's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, while space heating, water heating, and cooking account for over 90 percent of gas use. In 2006, schools and colleges were in the top five facility types for electricity and gas consumption, accounting for approximately 10 percent of the State's electricity and gas use.

The CPUC and the California Energy Commission (CEC) have adopted the following goals to achieve zero net energy levels by 2030 in the commercial sector:

- Goal 1. New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.
- Goal 2. 50 percent of existing buildings will be retrofit to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.

[1] Zero net energy buildings are buildings in which the total amount of energy used by the building on an annual basis is equal to or less than the amount of renewable energy created on the site.

- Goal 3. Transform the commercial lighting market through technological advancement and innovative utility initiatives.

California Building Code: Building Energy Efficiency Standards

The State provides a minimum standard for energy conservation through Part 6 of Title 24 of the California Code of Regulations, commonly referred to as the "California Energy Code." The California Energy Code was originally adopted in June 1977 and is updated on a three-year cycle. Title 24 requires the design of building shells and building components to conserve energy. The 2019 California Energy Code is the most recent version and improves upon the previous 2016 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic (PV) systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: (1) smart residential PV systems; (2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); (3) residential and nonresidential ventilation requirements; and (4) nonresidential lighting requirements.[2] Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy efficient.[3] When accounting for the electricity generated by the solar PV system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards.[4] The City regularly adopts updates under the San Rafael Municipal Code (SRMC) Title 12, Building Regulations, Chapter 12.100, Adopted Codes.

California Building Code: CALGreen

The California Building Standards Commission adopted the California Green Building Standards Code, also known as CALGreen, in Part 11 of Title 24. CALGreen establishes standards that apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout the State, unless otherwise indicated in the California Building Standards Code. The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings. CALGreen encourages sustainable construction practices in energy efficiency. Compliance with the CALGreen Code is not a substitution for meeting the certification requirements of any green building program. The City of San Rafael has adopted all sections of the California Code of Regulations Title 24, Part 11, in SRMC Title 12, Building Regulations, Chapter 12.100, Adopted Codes.

[2] California Energy Commission, 2018, News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation, accessed February 27, 2020.

[3] California Energy Commission, 2018, 2019 Building Energy and Efficiency Standards Frequently Asked Questions, http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf, accessed February 27, 2020.

[4] California Energy Commission, 2018, 2019 Building Energy and Efficiency Standards Frequently Asked Questions, http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf, accessed February 27, 2020.

California Energy Commission

The California Energy Commission (CEC) was created in 1974 as the State's principal energy planning organization. The CEC is charged with six basic responsibilities as follows:

- Forecast statewide electricity needs
- License power plants to meet those needs
- Promote energy conservation and efficiency measures
- Develop renewable energy resources and alternative energy technologies
- Promote research, development, and demonstration
- Plan for and direct the state's response to energy emergencies

2019 Appliance Efficiency Regulations

The 2019 Appliance Efficiency Regulations (Title 20, California Code of Regulations Sections 1601 through 1609) include standards for both federally regulated appliances and non-federally regulated appliances. There are 24 categories of appliances included in the scope of these regulations, including such devices as washing machines, microwave ovens, dishwashers, and furnaces. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state, and those designed and sold exclusively for use in recreational vehicles or other mobile equipment. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

Renewables Portfolio Standard

Established in 2002 under Senate Bill (SB) 1078 and accelerated by several laws, most recently SB 100 in 2018, California's Renewables Portfolio Standard obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from eligible renewable energy sources by 2020, 60 percent from eligible renewable energy sources by 2030, and 100 percent from eligible renewable energy or other carbon-free sources by 2045. SB 100 establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under SB 100, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target. The statewide Renewables Portfolio Standard requirements do not directly apply to individual development projects, but to utilities and energy providers, such as MCE and PG&E, whose compliance with Renewables Portfolio Standard requirements would contribute to the State of California objective of transitioning to renewable energy.

Senate Bill 1368

On September 29, 2006, SB 1368 was signed into law.[5] This law limits long-term investments in baseload generation by the State's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the CPUC. The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds of carbon dioxide (CO_2) per megawatt-hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of GHGs;
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long-term while meeting the State's standards for environmental impact; and
- Establish a public process for determining the compliance of proposed investments with the emissions performance standard.[6]

California Energy Benchmarking and Disclosure

Assembly Bill (AB) 1103 (2007) requires that electric and gas utilities maintain records of the energy consumption data of all nonresidential buildings to which they provide service and that by January 1, 2009, upon authorization of a nonresidential building owner or operator, an electric or gas utility shall upload all of the energy consumption data for the specified building to the United States Environmental Protection Agency Energy Star Portfolio Manager in a manner that preserves the confidentiality of the customer. This statute further requires a nonresidential building owner or operator to disclose Energy Star Portfolio Manager benchmarking data and ratings, for the most recent 12-month period, to a prospective buyer, lessee, or lender. Enforcement of the latter requirement began on January 1, 2014.

On October 8, 2015, AB 802 was signed into law to revise and recast the above provisions. The new law directs the CEC to establish a statewide energy benchmarking and disclosure program and enhances the CEC's existing authority to collect data from utilities and other entities for the purposes of energy forecasting, planning and program design. Among the specific provisions, AB 802 would require utilities to maintain records of the energy usage data of all buildings to which they provide service for at least the most recent 12 complete months. Beginning no later than January 1, 2017, AB 802 would require each utility, upon the request and the written authorization or secure electronic authorization of the owner, owner's agent, or operator of a covered building, as defined, to deliver or provide aggregated energy usage data for a covered building to the owner, owner's agent, operator, or to the owner's account in the Energy Star Portfolio Manager, subject to specified requirements.

[5] Public Utilities Code, Chapter 598, Statutes of 2006.
[6] Public Utilities Code, Chapter 598, Statutes of 2006.

Senate Bill 350

SB 350, signed into law on October 7, 2015, expands the California Renewables Portfolio Standard by establishing a renewable energy goal of 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. SB 350 also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

AB 1493 Pavley Regulations and Fuel Efficiency Standards

California AB 1493, enacted on July 22, 2002, required California Air Resources Board (CARB) to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the USEPA's denial of an implementation waiver. The USEPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011.

The standards phase is during the 2009 through 2016 model years. When fully phased in, the near-term (2009 to 2012) standards resulted in about a 22 percent reduction compared with the 2002 fleet, and the mid-term (2013 to 2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed-valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

The second phase of the implementation for the Pavley Bill was incorporated into amendments to the Low-Emission Vehicle Program referred to as "LEV III" or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will clean up gasoline and diesel-powered cars and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles and hydrogen fuel cell cars. The package will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

California Code of Regulations Title 13, Motorized Vehicles

California Code of Regulations Section 2449(d)(2) of Article 4.8, In-Use Off-Road Diesel-Fueled Fleets, regulates the idling time to reduce oxides of nitrogen (NOx), diesel particulate matter (PM), and other

criteria pollutant emissions from in-use off-road diesel-fueled vehicles and certain types of motorized equipment. Such practices limit wasteful and unnecessary energy consumption. Article 4.8 is in Division 3, Air Resources Board, Chapter 9, Off-Road Vehicles and Engines Pollution Control Devices.

State Greenhouse Gas Regulations

Many of the regulations for GHG reductions focus on decreasing energy use through increasing energy efficiency, fuel efficiency, and land use patterns that discourage single-occupancy vehicles. The following regulations create a nexus between energy and GHG emissions or transportation, and are described in more detail in Chapter 4.8, Greenhouse Gas Emissions, and Chapter 4.16, Transportation, of this Draft Environmental Impact Report (EIR):

- Executive Order S-03-05. Signed June 1, 2005, Executive Order (EO) S-03-05 GHG reduction targets for the State: 2000 levels by 2010; 1990 levels by 2020; and 80 percent below 1990 levels by 2050.
- The Global Warming Solutions Act. This act, also referred to as AB 32, was passed by the California legislature on August 31, 2006, to place the State on a course to reduce its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05.
- CARB Scoping Plan. The 2017 CARB Scoping Plan is the most recent version of this plan and it is updated every five years. Major elements of the 2017 Scoping Plan framework include implementing Mobile Source Strategy, the Low Carbon Fuel Standard, and implementation of SB 350 (described above).
- Sustainable Communities and Climate Protection Act. In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted with the intent to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled, commonly referred to as "VMT" and vehicle trips.
- Executive Order B-30-15. Signed April 29, 2015, EO B-30-15 sets a goal of reducing GHG emissions in the State to 40 percent below 1990 levels by year 2030. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, to ensure climate change is accounted for in State planning and investment decisions.
- Senate Bill 32. Signed in September 2016, SB 32 (California Health and Safety Code Section 38566) made the EO B-30-15 goal for year 2030 into a statewide mandated legislative target.
- Senate Bill 1383. Signed on September 19, 2016, SB 1383 supplements the GHG reduction strategies in the CARB Scoping Plan to consider short-lived climate pollutants. SB 1383 establishes targets for reducing organic waste in landfills.

Regional Regulations

Plan Bay Area: Strategy for a Sustainable Region

As described in Chapter 4, Environmental Analysis, of this Draft EIR, Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) are regional planning agencies tasked with coordinating land use and transportation planning in the Bay Area, including development of the Bay

Area's Regional Transportation Plan/Sustainable Communities Strategy, known as *Plan Bay Area*. The 2040 update to *Plan Bay Area* was adopted jointly by the ABAG and MTC on July 26, 2017. *Plan Bay Area 2040* proposes the Climate Initiatives Program, which promotes the densification of land use and a relative decrease in per capita energy consumption, in addition to a net reduction in vehicle fuel use while also allowing growth within the region. As part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas within existing communities. TPAs are half-mile buffers surrounding major transit stops or terminals. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated within PDAs. As shown on Figure 4-1, in Chapter 4.0, Environmental Analysis, the EIR Study Area has three PDAs and three TPAs.[7] The current *Plan Bay Area* 2040 is currently being updated to extend the planning horizon to 2050.[8]

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to energy are primarily in the Sustainability Element. As part of the proposed project, some existing General Plan policies would be amended, substantially changed, or new policies would be added. The Sustainability Element is being eliminated and its policies and programs are being moved to other elements. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.6.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives pertaining to energy use, conservation, and infrastructure. The SRMC is organized by title, chapter, and section. Most provisions related to energy impacts are included in Title 12, Building Regulations, and Title 14, Zoning, as follows:

- Chapter 12.100, Adopted Codes. This chapter adopts the California Building Code in its entirety.
- Chapter 12.230, California Existing Building Code Amendments. Section 12.230.020, Amendments, describes the deletions and amendments to the adopted 2019 California Existing Building Code Standards, as described in Section 12.100.010, Adopted Codes.
- Chapter 12.235, California Green Building Construction Standards Code Amendments. Section 12.235.020, Amendments, describes the deletions and amendments to the adopted 2019 CALGreen Building Code Standards as described in Section 12.100.010, Adopted Codes.

[7] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, *Plan Bay Area 2040 Final*, http://2040.planbayarea.org/, accessed on March 12, 2019.

[8] To read more about *Plan Bay Area,* go to www.planbayarea.org.

- Chapter 12.315, Expedited Permitting Process for Electric Vehicle Charging Stations. This chapter is intended to promote the use of electric vehicles by streamlining the permitting process for electric vehicle charging stations.
- Chapter 12.320, Expedited Permit Process for Small Residential Rooftop Solar Systems. This chapter ensures a streamlined solar permitting process that complies with the Solar Rights Act and AB 2188, to achieve timely and cost-effective installations of small residential rooftop solar energy systems.
- Section 14.16.305, Small Wind Energy Systems. This section establishes standards to regulate the design and placement of small wind energy systems on public and private property in order to minimize the potential safety and aesthetic impacts on neighboring properties. Such systems are allowed in all zones except for parks/open space and water zoning districts. Standards include height, setbacks, noise, and access.
- Section 14.16.307, Solar Installations. This section establishes standards for the installation of solar systems along with the required permit approvals necessary to install such systems.

San Rafael 2019 Climate Change Action Plan

The San Rafael 2019 *Climate Change Action Plan* (CCAP), completed in Spring of 2019, contains policies and actions focused on the reduction of GHG emissions and energy conservation across both government and community sectors. The 2019 CCAP builds off the 2009 CCAP and the San Rafael 2016 Greenhouse Gas Emission Inventory, providing a comparison between baseline and more recent emissions to identify where reductions have occurred. The 2019 CCAP establishes targets similar to the State's GHG emission goals, to reduce emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. In San Rafael, that means emissions would need to drop to 241,455 metric tons of CO_2 equivalents ($MTCO_2e$) by 2030 and 80,485 $MTCO_2e$ by 2050, which include energy reduction and efficiency measures. Strategies that are relevant to the analysis of potential energy impacts and conservation actions within the EIR Study Area are provided in more detail in Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR.

4.6.1.2 EXISTING CONDITIONS

California's Energy Supplies

In 2017, California's power mix supply of electricity was derived from the following sources: natural gas (33.67 percent), nuclear (9.08 percent), "large" hydroelectric (14.72 percent), renewables (29.00 percent), coal (4.13 percent), and unspecified (9.25 percent).[9] Overall, electricity demand is forecast to increase an average of 1.27 percent[10] annually from 2016 through 2030, even with the more aggressive building and appliance energy efficiency standards and programs.

[9] California Energy Commission, Energy Almanac, Total Electricity System Power. http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html, accessed on April 3, 2019.

[10] California Energy Commission, 2018, Tracking Progress, Statewide Energy Demand (CED 2017 Revised Mid Energy Demand scenario) , http://www.energy.ca.gov/renewables/tracking_progress/documents/statewide_energy_demand.pdf, accessed on April 3, 2019.

Natural gas has become an increasingly important source of energy since the State's power plants rely on this fuel. Nearly 45 percent of the natural gas burned in California was used for electricity generation, and much of the remainder consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors. California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply.[11] Overall natural gas demand is forecast to increase by 0.37 to 0.98 percent annually from 2016 to 2028.[12]

A third major source of energy for California is crude oil, which is the primary source of transportation fuels in the State. Oil supply sources for the State include in-state production, Alaska, and foreign imports. Of the approximately 642 million barrels of crude oil delivered to refineries in the State in 2018, California itself produced 31.10 percent,[13] while foreign sources and Alaska provided 57.54 percent and 11.36 percent, respectively.[14]

Major transportation fuels include gasoline and diesel. Gasoline is the largest transportation fuel by volume used in California, followed closely by diesel fuel. In 2018, approximately 15.5 billion gallons of gasoline and 3.1 billion gallons of diesel fuel were sold in California's retail market.[15,16] Nearly all semi-trucks, delivery vehicles, buses, trains, ships, buses, and other equipment have diesel engines.

Energy Providers

Marin Clean Energy

Marin Clean Energy (MCE) is the default electricity provider for all communities in Marin County, including San Rafael, and several other communities in the San Francisco Bay Area. As a Community Choice Aggregation program and not-for-profit public agency, MCE is independently run by representatives from participating communities. MCE provides electricity generated from renewable sources such as solar, wind, bioenergy, geothermal, and hydropower, which is delivered to customers through Pacific Gas and Electric Company (PG&E) transmission lines. Individuals residing in participating areas are automatically enrolled in MCE, and individuals residing or working within the MCE service area are automatically enrolled in MCE.

MCE offers four program options; the Light Green program, which provides 60 percent renewable power service; the Deep Green program, which provides 100 percent renewable power service from solar and wind sources in California; the Local Sol program, which provides 100 percent locally produced solar power from the Novato Cooley Quarry solar farm; and the Opt-Out program, which means individuals are

[11] California Energy Commission, 2017, Supply and Demand of Natural Gas in California, http://www.energy.ca.gov/almanac/naturalgas_data/overview.html, accessed on April 3, 2019.

[12] California Energy Commission, 2017, Draft Natural Gas Market Trends and Outlook, Page 12. 2017_Draft_Natural_Gas_Market_Trends_and_Outlook.pdf.

[13] This total may include minor amount from North Dakota and the Gulf Coast States.

[14] California Energy Commission, 2019, Oil Supply Sources to California refineries, https://www.energy.ca.gov/almanac/petroleum_data/statistics/2018_monthly_oil_sources.html, accessed on April 3, 2019.

[15] State of California Board of Equalization, 2019, Net Taxable Gasoline Gallons.

[16] State of California Board of Equalization, 2019, Net Taxable Diesel Gallons.

receiving their electricity through PG&E with no substitution by MCE.[17] All electric energy provided by MCE is conveyed to customers through PG&E's existing infrastructure. PG&E continues to maintain the grid, repair lines, and conduct customer billing within the MCE service area. The EIR Study Area is currently serviced with electricity from MCE and PG&E. Customers are automatically enrolled in the MCE light green program which uses 60 percent renewable energy. Customers can either opt-up to a 100 percent renewable electricity service or can opt-out of the light green program to receive all their electricity from PG&E. Starting in 2017, 33 percent of PG&E's electricity was generated from renewable energy.

Pacific Gas and Electric Company

PG&E provides natural gas services to the EIR Study Area and provides electricity services to customers who have opted out of participating in MCE. PG&E is a publicly traded utility company that generates, purchases, and transmits energy under contract with the CPUC. PG&E owns and maintains above- and below-ground networks of electric and gas transmission and distribution facilities throughout the EIR Study Area. Both gas and electrical service is available throughout the entirety of the EIR Study Area.

PG&E's service territory is 70,000 square miles, roughly extending north to Eureka, south to Bakersfield, west to the Pacific Ocean and east to the Sierra Nevada mountain range. PG&E's electricity distribution system consists of 106,681 circuit-miles of electric distribution lines and 18,466 circuit-miles of interconnected transmission lines. PG&E electricity is generated by a combination of sources such as coal-fired power plants, nuclear power plants, and hydro-electric dams, as well as newer sources of energy, such as wind turbines and PV plants, also known as solar farms. The bulk electric grid (collectively referred to as "The Grid"), is a network of high-voltage transmission lines, linked to power plants within the PG&E system. The distribution system, made up of lower voltage secondary lines, is at the street and neighborhood level, and consists of overhead or underground distribution lines, transformers, and individual service "drops" that connect to the individual customer.

PG&E produces or buys its energy from a number of conventional and renewable generating sources, which travel through PG&E's electric transmission and distribution systems. The power mix PG&E provided to customers in 2017 consisted of non-emitting nuclear generation (27 percent), large hydroelectric facilities (18 percent) and eligible renewable resources (33 percent), such as wind, geothermal, biomass, solar, and small hydro.[18] The remaining portion came from natural gas/other (20 percent) and unspecified power (2 percent). Unspecified power refers to electricity that is not traceable to specific generation sources by any auditable contract trail. PG&E met California's 2020 renewable energy goal three years ahead of schedule, supplying 33 percent of electricity from renewable resources that qualify under California's Renewables Portfolio Standard. PG&E continues to add more renewable energy

[17] Marin Clean Energy, 2016, Your Energy Choices, https://www.mcecleanenergy.org/your-energy-choices/, accessed on April 3, 2019.

[18] Pacific Gas and Electric Company, 2018, PG&E's 2017 Power Mix, https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2018/10-18_PowerContent.pdf, accessed on April 3, 2019.

to their power mix and are projected to supply electricity from 50 percent eligible renewables by the end of 2030.[19]

PG&E's natural gas (methane) pipe delivery system includes 42,141 miles of distribution pipelines, and 6,438 miles of transportation pipelines. Gas delivered by PG&E originates in gas fields in California, the US Southwest, the US Rocky Mountains, and from Canada. Transportation pipelines send natural gas from fields and storage facilities in large pipes under high pressure. The smaller distribution pipelines deliver gas to individual businesses or residences.

PG&E gas transmission pipeline systems serve approximately 4.3 million gas customers in northern and central California. [20] The system is operated under an inspection and monitoring program. The system operates in real time on a 24-hour basis, and includes leak inspections, surveys, and patrols of the pipelines. A new program, the Pipeline 2020 program, aims to modernize critical pipeline infrastructure, expand the use of automatic or remotely-operated shut-off valves, catalyze development of next-generation inspection technologies, develop industry-leading best practices, and enhance public safety partnerships with local communities, public officials, and first responders. [21]

Existing Energy Infrastructure in San Rafael

Electricity

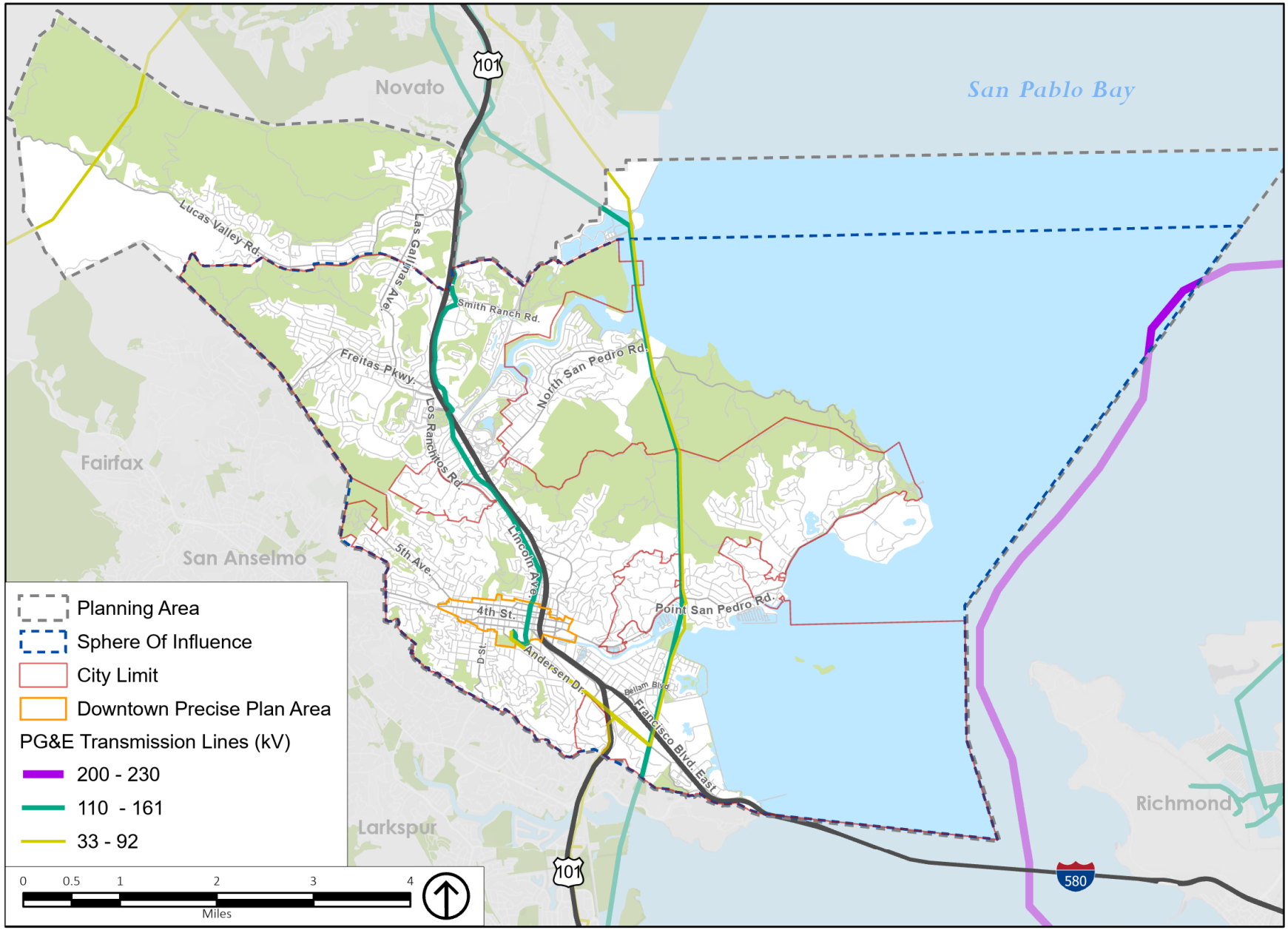
As shown on Figure 4.6-1, four 60-kilovolt (kV) underground electrical lines and two 115 kV underground electrical lines run through the EIR Study Area.[22] The two 60 kV electric transmission lines under Anderson Drive terminate in the Downtown Precise Plan Area at the San Rafael substation. The substation is located on Second Street between A Street and Lindaro Street. The 115 kV electric transmission line along Lincoln Avenue also runs through the Downtown Precise Plan Area. These lines are managed and controlled by PG&E. During high wind events, also known as "red flag events," PG&E has the ability to turn off the powerlines through the Public Safety Power Shutoff Program, to prevent arcing and sparking of the electrical transmission lines, which reduces the risk of wildfires from downed power lines. PG&E is undertaking programs and improvements to minimize shutoffs and their impacts in San Rafael and the remainder of the service area.

[19] Pacific Gas and Electric. October 2018. Where Your Electricity Comes From. https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2018/10-18_PowerContent.pdf

[20] Pacific Gas and Electric. 2019. Company Profile. https://www.pge.com/en_US/about-pge/company-information/profile/profile.page

[21] Pacific Gas and Electric. 2009. Pipeline 2020 Program. https://www.pge.com/about/newsroom/mediaevents/pipeline2020/index.shtml

[22] California Energy Commission. April 3, 2018. API Explorer, California Electric Transmission Line. https://cecgis-caenergy.opendata.arcgis.com/datasets/california-electric-transmission-line



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.6-1
PG&E Electric Transmission Lines

Natural Gas

Seven PG&E gas high-pressure transmission pipelines run beneath the EIR Study Area, as shown on Figure 4.6-2. Three of these pipelines are within the Downtown Precise Plan Area:

- One 16-inch pipeline running in Lindaro Street to 3rd street to Lincoln Avenue
- One 12-inch pipeline running in Lindaro Street to 2nd Street
- One 12-inch pipeline running along Ida Street to H Street.[23]

PG&E's 2018 California Gas Report projects total system demand to decline at an annual average rate of 0.4 percent between 2018 and 2035. PG&E anticipates that sufficient supplies will be available from a variety of sources at market-competitive prices to meet existing and projected market demands in its service area.[24] Table 4.6-1 shows the winter peak-day demand, the summer peak-day demand, and the total resources available to meet demands.

TABLE 4.6-1 DEMAND AND SUPPLY FORECAST FOR PG&E

Year	Demand	Resources Available to Meet Demand
Winter Peak Demand		
2018	3,671	5,200
2019	3,557	4,317
2020	3,463	4,317
Summer Peak Demand		
2018	1,805	5,200
2019	1,681	4,317
2020	1,557	4,317

Source: San Rafael Department of Public Works, 2018, 3-Year Capital Improvement Program.

Existing Energy Use within San Rafael

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g., gallons of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh.

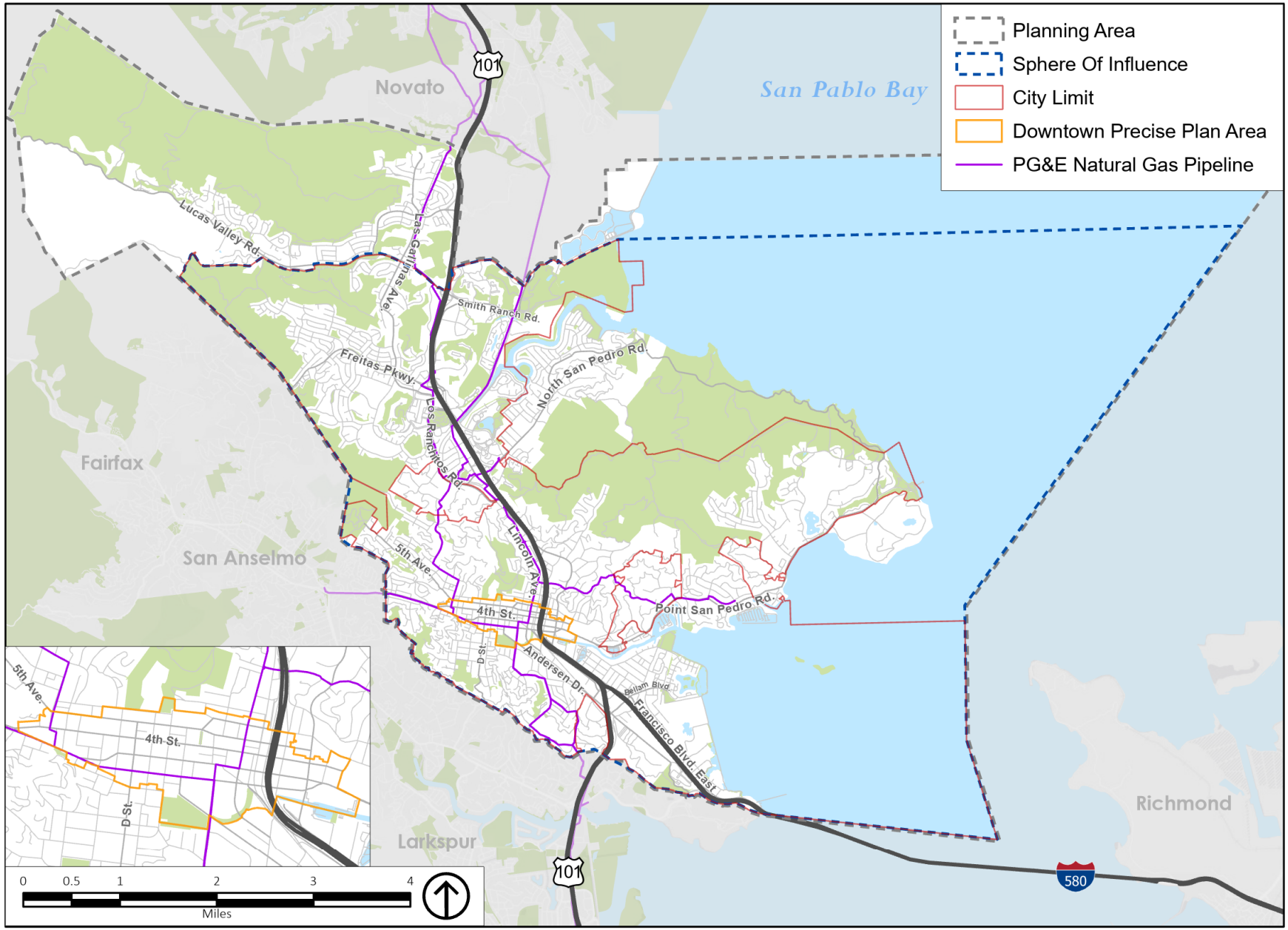
Electricity consumption citywide in 2016 for residential land uses was 118,031,218 kWh and nonresidential land uses was 214,481,019 kWh, totaling approximately 332,512,237 kWh or 332.5 million kWh.[25] Natural gas consumption citywide in 2016 for residential land uses was 9,467,604 therms and nonresidential land uses was 5,687,627 therms, totaling approximately 15 million therms.[26]

[23] Pacific Gas and Electric. 2019. Gas Transmission System Map. https://www.pge.com/en_US/safety/how-the-system-works/natural-gas-system-overview/gas-transmission-pipeline/gas-transmission-pipelines.page

[24] California Gas and Electric Utilities. 2018. 2018 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf

[25] Marin Climate & Energy Partnership. April 2019. City of San Rafael Community and Government Operations Greenhouse Gas Inventory for 2016.

[26] Marin Climate & Energy Partnership. April 2019. City of San Rafael Community and Government Operations Greenhouse Gas Inventory for 2016.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.6-2
PG&E Natural Gas Transmission Pipeline Map

Automotive fuel consumption data available for 2019 reported that San Rafael used approximately 42,928 gallons of gasoline and 1,650 gallons of diesel, per day. This equates to approximately 15,668,720 gallons of gasoline per year and 602,250 gallons of diesel per year.[27]

In the City of San Rafael there are 1,900 locations that have installed solar photovoltaic (PV) panels or cells. Of these solar PV installations, 1,803 of them are at residential properties, while 97 are located on non-residential properties that include commercial buildings, institutions, educational facilities, non-profits, and industrial land uses.[28] The total amount of solar PV installations in San Rafael have a total capacity of 14,372.08 kW of direct current. Over the course of a year, one kW is able to generate 1,619 kWh, meaning that solar PV installations in San Rafael are able to generate a total of approximately 23.3 million kWh annually.[29]

4.6.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would result in significant energy impact if it would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.
3. Result in significant cumulative impacts related to energy demand, energy conservation, and energy infrastructure.

4.6.3 IMPACT DISCUSSION

ENE-1	**Implementation of the proposed project could result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.**

General Plan 2040

Construction

Potential future development in the EIR Study Area would require the temporary use of construction equipment for grading, hauling, and building activities. Energy use during construction would vary based on the type of construction (i.e., demolition, grading, site preparation, etc.). The majority of construction

[27] California Air Resources Board, 2019, EMFAC2011 Emissions Model.

[28] California Distributed Generation Statistics, April 30, 2020, Download Data, Distributed Generation Interconnection Program Data, NEM Currently Interconnected Data Set, https://www.californiadgstats.ca.gov/downloads/, accessed September 11, 2020.

[29] U.S. Department of Energy, National Renewable Energy Laboratory, PVWatts Calculator, https://pvwatts.nrel.gov/, accessed on September 11, 2020.

equipment during demolition and grading would be gas or diesel powered, and other equipment during building construction would be electricity powered. Construction would also include the vehicles of construction workers traveling to and from each project site as well as haul trucks for the export of materials from site clearing and the export and import of soil for grading. Transportation energy use depends on the type and number of trips, VMT, fuel efficiency of vehicles, and travel mode.

The proposed Conservation and Climate Change (C) Element contains a goal, policy, and program that requires local planning and development decisions to conserve energy during construction-related activities. The following goal, policy, and program would limit wasteful and unnecessary energy consumption in the EIR Study Area:

Goal C-4: Sustainable Energy Management. Use energy in a way that protects the environment, addresses climate change, and conserves natural resources.

- Policy C-4.2: Energy Conservation. Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.
  - Program C-4.2B: Green Building Standards. Implement State green building and energy efficiency standards for remodeling projects and new construction. Consider additional measures to incentivize green building practices, low carbon concrete, and sustainable design.

There would be no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the state. All operation of construction equipment would cease upon completion of project construction. Furthermore, the construction contractors are anticipated to minimize nonessential idling of construction equipment during construction, in accordance with California Code of Regulations, Title 13, Section 2449(d)(2) of Article 4.8, Chapter 9. Such required practices would limit wasteful and unnecessary energy consumption. Projects within the city would be similar to projects currently in development within San Rafael. No projects consisting of multiple phases over an extended period are anticipated. Furthermore, construction vehicles for model years 2017 to 2025 are mandated by the CAFE standards, which include targets for gallons of fuel consumed per mile. Therefore, short-term construction activities that occur as a result of implementation of the proposed General Plan 2040 would not result in inefficient, wasteful, or unnecessary fuel consumption.

Operation

Operation of new development projects accommodated under the General Plan Update would create additional demands for electricity and natural gas, and diesel or gasoline for some types of motorized vehicles used for transportation when compared to existing conditions. Operational use of electricity and natural gas would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; use of on-site equipment and appliances; lighting; and charging electric vehicles. Operational use of gasoline and diesel would include motorized equipment such as emergency generators, vehicles, and available public transit such as buses and trains.

Electrical Energy

While the electricity and natural gas demand for the potential future development in the EIR Study Area would increase compared to existing conditions, potential future development would be required to comply with the current and future updates to the Building and Energy Efficiency Standards (California Code of Regulations, Title 24, Part 6) and the 2019 California Green Building Code (California Code of Regulations, Title 24, Part 11), which would contribute to reducing the energy demands. New buildings would also use new energy-efficient appliances and equipment, pursuant to the Appliance Efficiency Regulations (Title 20, California Code of Regulations, Sections 1601 through 1609), which would ensure the use of efficient and non-wasteful electricity and natural gas consumption. New and replacement buildings in compliance with these standards would generally have greater energy efficiency than existing buildings. It is anticipated that each update to the Building Energy Efficiency Standards and CALGreen will result in greater building energy efficiency and move closer toward buildings achieving zero net energy.

The proposed Conservation and Climate Change (C) Element contains goals, policies, and programs that require local planning and development decisions to address efficient use of energy and energy conservation. The following goals, policies, and programs would further limit wasteful and unnecessary energy consumption in the EIR Study Area, beyond those listed in the construction discussion.

Goal C-4: Sustainable Energy Management. Use energy in a way that protects the environment, addresses climate change, and conserves natural resources.

- Policy C-4.1: Renewable Energy. Support increased use of renewable energy and remove obstacles to its use.
  - Program C-4.1B: PACE Financing. Participate in a Property Assessed Clean Energy (PACE) financing program to fund installation of renewable energy systems, energy efficiency upgrades to existing buildings, and other improvements such as electric vehicle chargers and battery storage. Consider other funding sources to improve local energy generation and storage.
  - Program C-4.1C: Regulatory Barriers. Continue efforts to remove regulatory barriers and provide creative incentives for solar energy installations, such as rooftop solar systems and parking lot canopies. The installation of renewable energy systems that are consistent with the Climate Change Action Plan should be encouraged and accelerated.
  - Program C-4.1D: Reducing Natural Gas Use. Promote electrification of building systems and appliances in new buildings and those that currently use natural gas.
  - Program C-4.1E: Municipal Buildings. Wherever feasible, incorporate renewable energy technology such as solar, cogeneration, and fuel cells, in the construction or retrofitting of City facilities. Continue use of Marin Clean Energy (MCE) Deep Green (100 percent renewable) power.
- Policy C-4.2: Energy Conservation. Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.
  - Program C-4.2A: Energy Efficiency Outreach. Continue to inform businesses and residents of programs and rebates to conserve energy and weatherize their homes.
  - Program C-4.2B: Green Building Standards. Implement State green building and energy efficiency standards for remodeling projects and new construction. Consider additional measures to incentivize green building practices, low carbon concrete, and sustainable design.

- Program C-4.2C: Energy Efficiency Incentives. Provide financial incentives, technical assistance, streamlined permitting processes, and partnerships to encourage energy-efficiency upgrades in new and existing buildings. Typical improvements include the use of energy-efficient windows, lighting, and appliances, induction and convection cooking, insulation of roofs and exterior walls, higher-efficiency heating and air conditioning (including electrical heat pump systems), and other projects that lower electricity and natural gas consumption.
- Program C-4.2D: Time-of-Sale Energy Audits. Consider requiring energy audits for residential and commercial buildings prior to property sales, including identification of cost savings from energy efficiency measures and potential rebates and financing options. An energy audit is a property inspection that identifies opportunities to improve energy efficiency.
- Program C-4.2E: Cool Roofs and Pavement. Encourage the use of materials that minimize heat gain forfuture outdoor surfaces such as parking lots, roadways, roofs and sidewalks.

- Policy C-4.3: Managing Energy Demand. Reduce peak demands on the electric power grid through development of local sources, use of battery storage, deployment of "smart" energy and grid systems that use technology to manage energy more efficiently, and public education.
  - Program C-4.3A: Innovative Technologies. Apply innovative technologies such as micro-grids, battery storage, and demand response programs that improve the electric grid's resilience and meet demand during high use periods. Encourage emergency battery back-up for power outages in lieu of generators.

- Policy C-4.4: Sustainable Building Materials. Encourage the use of building materials that reduce environmental impacts and the consumption of non- renewable resources.
  - Program C-4.4A: Use of Alternative Building Materials. Evaluate opportunities to amend the City's building codes and zoning ordinances to allow the use of acceptable resource-efficient alternative building materials and methods.

- Policy C-4.5: Resource Efficiency in Site Development. Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.
  - Program C-4.5A: Solar Site Planning. Use the development review process to:
    - Encourage opportunities for passive solar building design and the use of photo-voltaic materials and devices.
    - Review proposed site design for energy efficiency, such as shading of parking lots and summertime shading of south-facing windows.
  - Program C-4.5B: Solar Access Ordinance. Consider developing a solar access ordinance to protect solar access rights and prevent restrictions on solar energy systems. The ordinance should address potential impacts related to development or modification of existing structures on neighboring properties.

Transportation Energy

As discussed in Chapter 4.3, Air Quality, and shown in Table 4.3-9 of that chapter, implementation of the proposed General Plan 2040 would increase daily VMT by 124,000 vehicle miles per day in the city, or about 3 percent, when compared to existing conditions. However, implementation of the proposed General Plan 2040 would result in 16 percent lower VMT per capita than under existing conditions. Compared to the demographic and VMT growth projections of the 2040 Without Project conditions (i.e.,

growth that would occur as currently allowed and projected under General Plan 2020), the 2040 With Project conditions would also decrease total VMT by approximately 2 percent in the EIR Study Area. This indicates that buildout conditions under the proposed General Plan 2040 would be more efficient in reducing VMT on a per service population basis, thus reducing energy demand from transportation.

Additionally, the efficiency of vehicles would also increase by 3.41 miles per gallon (mpg) and 3.71 mpg, respectively, compared to 2020 conditions. A decrease in VMT and fuel usage for gasoline-powered vehicles and increase in VMT and fuel usage for electric-powered vehicles are primarily based on the assumption in emission factors that a greater mix of light-duty automobiles would be electric-powered in future years based on regulatory (e.g., Advanced Clean Cars) and consumer trends. Fuel efficiency will improve over time, and implementation of the proposed General Plan 2040 would not result in less efficiency in transportation fuel usage. The improvement in fuel efficiency would be attributable to regulatory compliance (e.g., CAFE standards), resulting in new cars that are more fuel efficient and the attrition of older, less fuel-efficient vehicles. The CAFE standards are not directly applicable to residents or land use development projects, but to car manufacturers. Thus, residents and employees of San Rafael do not have direct control in determining the fuel efficiency of vehicles manufactured and that are made available. However, compliance with the CAFE standards by car manufacturers would ensure that vehicles produced in future years have greater fuel efficiency and would generally result in an overall benefit of reducing fuel usage by providing the population of the city more fuel-efficient vehicle options.

In conjunction with the regulatory (i.e., Renewables Portfolio Standard, SB 350, and SB 100) and general trend toward increasing the supply and production of energy from renewable sources, it is anticipated that a greater share of electricity used to power electric vehicles would be from renewable sources in future years.

In addition to regulatory compliance that would contribute to more fuel-efficient vehicles and less demand in fuels, the proposed General Plan 2040 includes goals, policies, and programs previously listed that would contribute to efficient energy and fuel use. Because transportation is a leading source of energy use in San Rafael, many goals and policies in the proposed General Plan 2040 appear in the Mobility Element. These proposed goals, policies, and programs focus on minimizing VMT through land use and transportation planning efforts that work in conjunction. Goal M-5 supports local streets that are safe, attractive, and provide easy access to homes and businesses, thus encouraging biking and walking. Policies aim to reduce VMT, and therefore reduce energy use from the transportation sector, by encouraging carpooling, working from home, flextime, micromobility (e-bikes, e-scooters), and similar strategies. Policies also support a continued shift to cleaner fuel vehicles and more electric charging stations. Goal M-4 supports a more robust public transit system, to make it easier to travel without a car. Goal M-6 supports pedestrian and bicycle improvements, making it safer and easier to walk or cycle around the city. Goal M-7 supports parking to accommodate a more sustainable transportation system, including parking for transit users and charging stations for electric vehicles. Goal CSI-3 supports public safety services to maintain safe streets for all users. Collectively, these goals and policies would minimize overall VMT, and thus fuel usage associated with potential future development in San Rafael.

Furthermore, roughly half of the potential new population and employment opportunities would occur within the PDAs and TPAs, and on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to

existing residential and residential-serving development, thus contributing to reduced energy use from the transportation sector. Placing residential and nonresidential uses near each other to create self-sustaining communities and neighborhoods and offering mixed-used developments, could result in shorter distances traveled between where people work and live and to amenities. The shorter distances reduce VMT by reducing the average vehicle trip distance traveled. It also encourages people to forego vehicle travel altogether and either bike, walk, or take public transportation, which would also contribute to minimizing VMT.

Summary

Overall, compliance with federal, State, and local regulations (e.g., Building Energy Efficiency Standards, CALGreen, Renewables Portfolio Standard, and CAFE standards) would increase building energy efficiency and vehicle fuel efficiency and reduce building energy demand and transportation-related fuel usage. Additionally, the proposed General Plan 2040 includes goals, policies, and programs related to land use and transportation planning and design, energy efficiency, public and active transit, and renewable energy generation that will contribute to minimizing building and transportation-related energy demands overall and demands on nonrenewable sources of energy. Implementation of proposed policies under the proposed General Plan 2040 in conjunction with and complementary to regulatory requirements, will ensure that energy demand associated with growth under the proposed General Plan 2040 would not be inefficient, wasteful, or unnecessary. Therefore, energy impacts associated with implementation and operation of land uses accommodated under the General Plan Update would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area is mostly within the Downtown San Rafael PDA and TPA (see Figure 4-5 in Chapter 4, Environmental Analysis, of this Draft EIR), surrounding the San Rafael Transit Center. About 200 acres of the Downtown Precise Plan Area is within 0.25 miles, or within a 10-minute walking distance, of the San Rafael Transit Center. Potential future development would primarily occur within this TPA and PDA and/or on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, and in areas within close proximity to public transportation.

The Downtown Precise Plan Area is served by the same electric and natural gas facilities as the remainder of the EIR Study Area. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to ensure energy efficiency beyond what is proposed in the General Plan 2040; therefore, the impacts described above for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. New development or redevelopment in the Downtown Precise Plan Area would be required to comply with the same regulations and efficiency standards as the proposed General Plan 2040, which would ensure energy efficiency. Accordingly, potential future development would not result in wasteful, inefficient, or unnecessary consumption of energy resources and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

ENE-2 Implementation of the proposed project could conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

General Plan 2040

As stated in Section 4.6.1.2, Existing Conditions, the EIR Study Area is currently serviced with electricity from MCE and PG&E. Customers are automatically enrolled in the MCE light green program which uses 60 percent renewable energy and can opt-up to a 100 percent renewable electricity service. Even if customers in the EIR Study Area were to opt-out of the light green program, and therefore receive all their electricity from PG&E, 33 percent of PG&E's electricity is generated from renewable energy. Thus, additional energy that would be consumed due to implementation of the proposed General Plan 2040 is anticipated to be consistent with the California 2020 renewable energy goal of 50 percent of the total electricity sold to California retail customers per year by December 31, 2020.

The land uses accommodated under the proposed General Plan 2040 would comply with the current and future iterations of the Building Energy Efficiency Standards and CALGreen. Furthermore, as discussed for Impact Discussion ENE-1, the proposed General Plan 2040 includes Conservation and Climate Change Element goals, policies, and programs, which would support the statewide goal of transitioning the electricity grid to renewable sources. The net increase in energy demand associated with implementation of the proposed General Plan 2040 would be within the service capabilities of MCE and PG&E and would not impede their ability to implement California's renewable energy goals. Therefore, implementation of the proposed General Plan 2040 would not conflict with or obstruct implementation of California's Renewables Portfolio Standard program, and no impact would occur.

Plan Bay Area

Implementation of the proposed General Plan 2040 would be consistent with *Plan Bay Area* 2040, as roughly half of the potential future development would be concentrated within the Downtown Precise Plan Area, which makes up the majority of the Downtown San Rafael PDA and TPA, and potential future development would also occur within the other PDAs and TPAs in the city. Potential future development would also occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Development of this nature promotes the densification of land uses, which would reduce vehicle fuel use and per-capita energy consumption.

San Rafael Climate Change Action Plan

The 2019 Climate Change Action Plan (CCAP) was approved and adopted by the City on May 20, 2019, to reduce GHG emissions and includes a variety of regulatory, incentive-based, and voluntary strategies to reduce emissions from existing and future development in the city. It contains policies and actions focused on the reduction of GHG emissions and energy conservation across both government and community sectors. Actions provided in the 2019 CCAP to meet the City's reduction targets involve initiatives focused

on low-carbon transportation, energy efficiency, renewable energy, waste reduction, water conservation, sequestration and adaptation, and community engagement, all which serve to reduce energy use and ensure the efficient use of energy.

The proposed General Plan 2040 includes goals, policies, and programs previously listed under Impact Discussion ENE-1 that increase energy efficiency and use of renewable sources of energy throughout the city. These goals, policies, and programs would contribute to the reduction in energy demand throughout the city. Thus, implementation of the proposed General Plan 2040 would not interfere with the goals and measures of the City's CCAP, and impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As described in Impact Discussion ENE-1, the Downtown Precise Plan Area is located in the service area of both MCE and PG&E and potential future development would occur in the Downtown San Rafael PDA and TPA and/or on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, and in areas within close proximity to public transportation. As such, development in this location would further the goals of the California's Renewables Portfolio Standard Program and the City's CCAP and would not impede their ability to be implemented. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to ensure energy efficiency beyond what is proposed in the General Plan 2040; therefore, the impacts described above for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not conflict with California's Renewables Portfolio Standard Program and the City's CCAP and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

ENE-3 Implementation of the proposed project could result in a cumulatively considerable impact to energy conservation and renewable energy.

Cumulative impacts would occur if a series of actions lead to a wasteful, inefficient, or unnecessary consumption of energy resources or a conflict with or obstruction of a State or local plan for renewable energy and energy efficiency. All the development projects within the vicinity of the EIR Study Area are within the service area of MCE and PG&E. All these projects would result in a long-term increase in operational energy demand for electricity and natural gas use associated with population growth. In addition, construction activities would require the use of energy for purposes such as the operation of construction equipment and tools, and construction of development projects may overlap. However, all projects developed within the MCE and PG&E service area would implement the requirements of the Building and Energy Efficiency Standards (California Code of Regulations, Title 24, Part 6), the California Green Building Code (California Code of Regulations, Title 24, Part 11), and the San Rafael CCAP. New buildings would also use new energy-efficient appliances and equipment, pursuant to the Appliance

Efficiency Regulations. Future projects would also implement renewable energy measures as indicated in the San Rafael CCAP and proposed goals, policies, and programs.

Future development would also increase annual fuel consumption. However, vehicles would be subject to the USEPA CAFE standards for vehicular fuel efficiency, and average corporate fuel economy continues to increase as a result of State and federal laws, including the Pavley Advanced Clean Cars program. Vehicle turnover also improves the overall fuel economy of California's vehicle fleets.

These measures would contribute toward minimizing inefficient, wasteful, or unnecessary energy consumption, and ensure compliance with State, regional, or local plans for renewable energy. Therefore, the proposed project would not result in a cumulatively considerable impact to energy and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

4.7 GEOLOGY AND SOILS

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to geology, soils, and seismicity. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of project impacts and cumulative impacts.

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 REGULATORY FRAMEWORK

Federal Regulations

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency. Additionally, it specifies these researchers must agree to donate any materials recovered to recognized public institutions, where they will remain accessible to the public and to other researchers. This act incorporates key findings of a report, *Fossils on Federal Land and Indian Lands*, issued by the Secretary of the Interior in 2000, that establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.[1]

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface fault rupture to structures used for human occupancy.[2] The main purpose of the act is to prevent the construction of buildings used for human occupancy on top of active faults. This act only addresses the hazard of surface fault rupture—not other earthquake hazards such as earthquake-induced liquefaction or landslides.[3] The act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around surface traces of active faults and to issue appropriate maps.[4] The maps, which are developed using existing United States Geological Survey's (USGS) 7.5-minute quadrangle map bases, are then distributed to all affected cities, counties, and State agencies for their use in planning

[1] U.S. Department of the Interior, May 2000, *Fossils on Federal & Indian Lands, Report of the Secretary of the Interior*, May 2000. https://www.blm.gov/sites/blm.gov/files/programs_paleontology_quick%20links_Assessment%20of%20Fossil%20Management%20on%20Federal%20%26%20Indian%20Lands%2C%20May%202000.pdf, accessed on May 3, 2019.

[2] California Geological Survey, Alquist-Priolo Earthquake Fault Zoning Act, https://www.conservation.ca.gov/cgs/alquist-priolo, accessed on May 3, 2019.

[3] California Geological Survey, Alquist-Priolo Earthquake Fault Zoning Act, https://www.conservation.ca.gov/cgs/alquist-priolo, accessed on May 3, 2019.

[4] California Geological Survey, Alquist-Priolo Earthquake Fault Zoning Act, https://www.conservation.ca.gov/cgs/alquist-priolo, accessed on May 3, 2019.

and controlling new or renewed construction. Generally, construction within 50 feet of an active fault zone is prohibited.

California Building Code

The State of California provides a minimum standard for building design through Title 24, Part 2, of the California Code of Regulations (CCR), commonly referred to as the "California Building Code" (CBC). The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The City of San Rafael regularly adopts each new CBC update under the San Rafael Municipal Code (SRMC) Chapter 12.100, Adopted Codes. These codes provide minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. They also regulate grading activities, including drainage and erosion control.

California Environmental Quality Act

Paleontological resources are afforded protection under the California Environmental Quality Act (CEQA). The Society of Vertebrate Paleontology has set significance criteria for paleontological resources.[5] Most practicing professional vertebrate paleontologists adhere closely to the Society of Vertebrate Paleontology's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most State regulatory agencies with paleontological laws, ordinances, regulations, and standards accept and use the professional standards set forth by the Society of Vertebrate Paleontology.

California Public Resources Code Section 5097

California Public Resources Code (PRC) Section 5097.5 prohibits the destruction or removal of any paleontological site or feature from public lands without the permission of the jurisdictional agency.

California Penal Code Section 622.5

The California Penal Code Section 622.5 details the penalties for damage or removal of paleontological resources, whether from private or public lands.

Regional Regulations

Marin County Emergency Operations Plan

The County of Marin adopted an *Emergency Operations Plan* in October 2014[6] to better prepare for responses to "extraordinary" emergency situations that could result from natural disasters and

[5] Society of Vertebrate Paleontology, 2010, Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology. Impact Mitigation Guidelines Revision Committee.

[6] County of Marin, 2014, Marin Operational Area Emergency Operations Plan. https://www.marinsheriff.org/assets/downloads/EOP-Final-Draft-10.14.2014.pdf.

technological incidents. To prepare for these emergencies, the County assessed the potential risks associated with earthquakes, flooding, wildland fire, and other disasters. Based on this evaluation, various response strategies were developed to address each of the threats. Emergency operations are split into four phases: 1) Preparedness Phase, 2) Response Phase, 3) Recovery Phase, and 4) Prevention/Mitigation Phase. The City of San Rafael coordinates with the Marin County Office of Emergency Services (Marin OES) to ensure emergency management functions meet the expectations of the City.

Marin County Operational Area Emergency Recovery Plan

The Marin County *Operational Area Emergency Recovery Plan* (*Emergency Recovery Plan*) adopted November 2012, establishes procedures, and assigns responsibility to ensure the effective management of emergency recovery operations in the Marin County Operational Area, which includes the Environmental Impact Report (EIR) Study Area. The *Emergency Recovery Plan* describes operational concepts relating to the recovery, identifies components of recovery organization, and describes general responsibilities of the Marin OES. Recovery operations in a multi-jurisdictional incident are coordinated and managed by the Marin OES in accordance with the California Emergency Services Act.

Marin County Multi-jurisdictional Local Hazard Mitigation Plan

The Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCLHMP) was adopted in 2018 to assess risk of natural hazards and to develop a mitigation strategy for reducing the risks for all Marin County municipalities and special districts. The MCLHMP was jointly prepared by several jurisdictions in Marin County, including the City of San Rafael. Jurisdictions benefit in several ways when participating in a multijurisdictional planning process, including comprehensive approaches to mitigation of hazards that affect multiple jurisdictions while leveraging individual jurisdiction capabilities, sharing costs and resources, avoiding duplication of efforts, and adopting an external review and discipline process to ensure progress. The MCLHMP incorporates the existing plans, studies, and reports from county jurisdictions and agencies to inform uniform analyses and mitigation actions that all municipalities and special jurisdictions can use. In July 2019, the City adopted the MCLHMP, which complements the City's local hazard mitigation plan (LHMP) with additional programs covering a broader geographic area and wider range of hazards.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to geology and soils are primarily in the Safety and Resilience Element. Appendix F of the 2020 General Plan includes the Geotechnical Review Matrix that contains the requirements for site specific geotechnical review of proposed developments. As part of the proposed project, many existing General Plan policies would be amended or substantially changed, and new policies would be added. The changes are mostly in response to the LHMP, which was adopted by the City in November 2017. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact under Section 4.7.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives to minimize adverse impacts to geology, soil, and seismicity-related issues in San Rafael. The SRMC is organized by title, chapter, and section. Most provisions related to erosion, grading, drainage, and soil stability are in Title 9, Urban Runoff Pollution Prevention, Title 12, California Existing Building Code, Title 14, Zoning, and Title 15, Subdivisions.

- Chapter 9.30.150, Erosion and Sediment Control Plan Requirements. The purpose of this section is to ensure that projects required by Phase II Stormwater Permits or by the agency have Erosion and Sediment Control Plans with specific control measures. Erosion and Sediment Control Plans are required for any project within the City boundaries that:
  - Is subject to a grading permit under Chapter 12.12;
  - Is subject to a building permit or other permit that has the potential for significant erosion and/or significant non-stormwater discharges of sediment and/or construction site waste; and
  - As required by the City considering factors such as whether the project involves hillside soil disturbance, rainy season construction, construction near a creek or an intermittent or ephemeral drainageway, or any other condition or construction site activity that could lead to a non-stormwater discharge to a storm drain if not managed by effective implementation of an Erosion and Sediment Control Plan.
- Chapter 12.100, Adopted Codes. The City of San Rafael has adopted the CBC with certain modifications as Section 12.12.101 et seq.
- Chapter 12.340, Unreinforced Masonry Building Mitigation Program. The purpose of this chapter is to promote public health and safety by reducing the potential for injury or loss of life in an earthquake due to unreinforced masonry buildings. This chapter provides minimum standards for structural seismic resistance and systematic procedures for identification and classification of unreinforced masonry buildings, and requires qualified Historical Buildings to comply with the State Historical Building Code.
- Chapter 14.12, Hillside Development Overlay District. The purpose of the Hillside Development Overlay District is to minimize hazards associated with seismic events, landslides, soil erosion, fire danger, and development on steep or unstable slopes. This chapter also encourages preservation of natural hillside features, ensures adequate emergency access and on-site parking, and implements site design policies of the General Plan. This overlay applies to parcels with an average slope of 25 percent or greater or located in the Hillside Resource Residential or Hillside Residential land use designation.
- Section 14.16.170, Geotechnical Review. This section requires that geotechnical reports consistent with the geotechnical matrix in the General Plan appendices to assess such hazards as potential seismic hazards, liquefaction, landsliding, mudsliding, erosion, sedimentation, and settlement and hazardous soils conditions to determine the optimum location for structures, to advise of special structural requirements, and to evaluate the feasibility and desirability of a proposed facility in a specific location.
- Chapter 15.06, Grading and Drainage. This chapter states that no subdivision of land into two or more lots or parcels for the purpose of development shall be approved by the City unless it is determined that wastewater and sewage disposal for all new lots or parcels shall be provided by either the San

Rafael Sanitation District or the Las Gallinas Valley Sanitary District, depending upon the property location. The creation of an individual on-site septic system intended to serve a new lot or parcel is prohibited.

San Rafael Local Hazard Mitigation Plan

The LHMP, adopted in November 2017, is a guide to hazard mitigation in the EIR Study Area and serves as a tool to help decision-makers direct hazard mitigation activities and resources. In the context of the LHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including seismically induced hazards and expansive soils. The LHMP contains hazard mitigation actions to help reduce the risk of damage or injury from geologic and soil hazards, as shown in Table 4.7-1.

TABLE 4.7-1 LOCAL HAZARD MITIGATION PLAN ACTIONS RELEVANT TO GEOLOGY AND SOILS

Number	Actions
Geology and Soil Mitigation Actions	
Action 27	Retrofit/Upgrade Four Remaining Unreinforced Masonry Buildings.
Action 28	Earthquake Hazard Study.
Action 29	Public Facility Vulnerability Assessment and Improvements.
Action 30	Structural Soft Story Identification and Mitigation Plan.
Action 39	70-96 Bret Harte Sewer Easement Repair (seismic reinforcement).
Action 40	Landslide Identification and Management Program.
Action 41	Fairhills Slide Repair.

Source: San Rafael LHMP, 2017

4.7.1.2 EXISTING CONDITIONS

Geology

The EIR Study Area is in the USGS's San Rafael, Novato, San Quentin, and Petaluma Point Quadrangle 7.5-minute topographic map areas.[7,8,9,10] The area is typified by northwest-southwest-trending mountain ridges and intervening valleys.[11] Elevations range from sea level to approximately 1,800 feet along Big Rock Ridge. Regional mapping completed by the USGS indicates that there are 16 geologic units in the EIR Study Area. These units are broadly categorized by the California Geologic Survey (CGS) as Franciscan Complex, Colluvium/Landslide Deposits, Alluvium, Artificial Fill/Bay Mud, and Serpentinite. Figure 4.7-1 shows the location of each geologic category in the EIR Study Area.[12]

[7] United States Geological Survey, 1981, Petaluma Point Quadrangle California 7.5-Minute Topographic Map, scale 1:24,000.
[8] United States Geological Survey, 1980, Novato Quadrangle California 7.5-Minute Topographic Map, scale 1:24,000.
[9] United States Geological Survey, 1995, San Rafael Quadrangle California 7.5-Minute Topographic Map, scale 1:24,000.
[10] United States Geological Survey, 1995, San Quentin Quadrangle California 7.5-Minute Topographic Map, scale 1:24,000.
[11] City of San Rafael, 2004, General Plan 2020 Background Report: Geology, Soils, and Seismicity, page 1.
[12] City of San Rafael, 2017, Local Hazard Mitigation Plan. Page 4-51.

- **Franciscan Complex:** The bedrock in the EIR Study Area consists of Franciscan Melange, which is a weak matrix of sheared and altered shale and sandstone that contains serpentine, greenstone, chert, limestone, and schist. Franciscan Melange is susceptible to landslides, whereas Franciscan sandstone and shale are more stable. This geologic unit is found primarily in the hillsides of the EIR Study Area.
- **Colluvium/Landslide Deposits:** The colluvium geologic unit contains deposits of unconsolidated solid material and weathered rock fragments that gather at the base of slopes by gravitational or slope wash processes (i.e., landslides). Colluvium may be susceptible to flow failures.
- **Alluvium:** The alluvium geologic units consists of sedimentary rock that has been transported and deposited by streams. Alluvium is vulnerable to seismically induced instability.
- **Artificial Fill/Bay Mud:** The bay mud geologic unit is located in the marshes, mudflats, and valley floors and is approximately 130 feet deep in portions of the bay and 90 feet deep in diked and filled areas in the EIR Study Area. Bay mud consists of soft, unconsolidated, water-saturated materials and is susceptible to both subsidence and liquefaction.
- **Serpentinite:** Serpentinite is a metamorphic rock which forms at tectonic plate boundaries. Serpentinite is often formed in Franciscan Complexes when ocean water is heated and moved through upper mantle and ocean crust rocks, which hydrates the magnesium and iron-rich materials in the rocks.

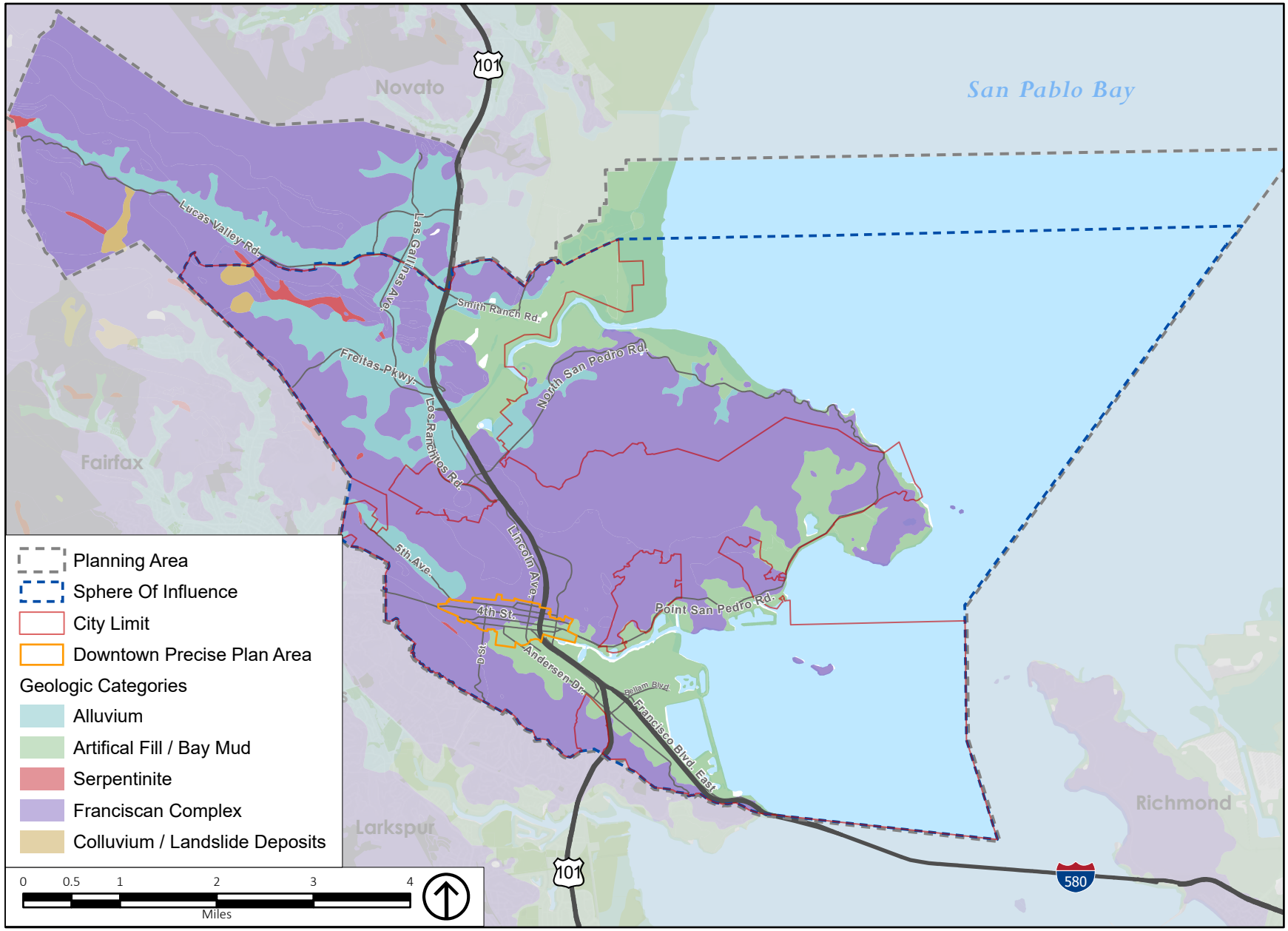
Unique geologic features are those that are unique to the field of geology. Each rock unit tells a story of the natural processes operating at the time it was formed. The rocks and geologic formations exposed at the earth's surface or revealed by drilling and excavation are our only record of that geologic history. What makes a geologic unit or feature unique can vary considerably. For example, a geologic feature may be considered unique if it is the best example of its kind and has distinctive characteristics of a geologic principle that is exclusive locally or regionally, is a key piece of geologic information important to geologic history, contains a mineral that is not known to occur elsewhere in the area, or is used as a teaching tool. Unique geological features are not common in San Rafael or the EIR Study Area. The geologic processes are generally the same as those in other parts of the state, country, and even the world. The geology and soils in the EIR Study Area are common throughout the city and region and are not considered to be unique.

Soils

The soils in the EIR Study Area have been mapped by the United States Department of Agriculture (USDA) Natural Resource Conservation Services. In general, the soils beneath the EIR Study Area are dominated by well-drained, shallow to moderately deep, fine-loamy soils such as loam and clay loam in the uplands, with additional areas of poorly drained clay and silty soils in the tidal flats and salt marshes.[13] Xerorthents soils consist of tidal flats, valley floors, and salt marshes. According to the USDA, the most prevalent soil types are the Tocaloma, McMillin, Xerorthents, urban land, water, Saurin, and Bonnydoon, as shown on Figure 4.7-2.[14]

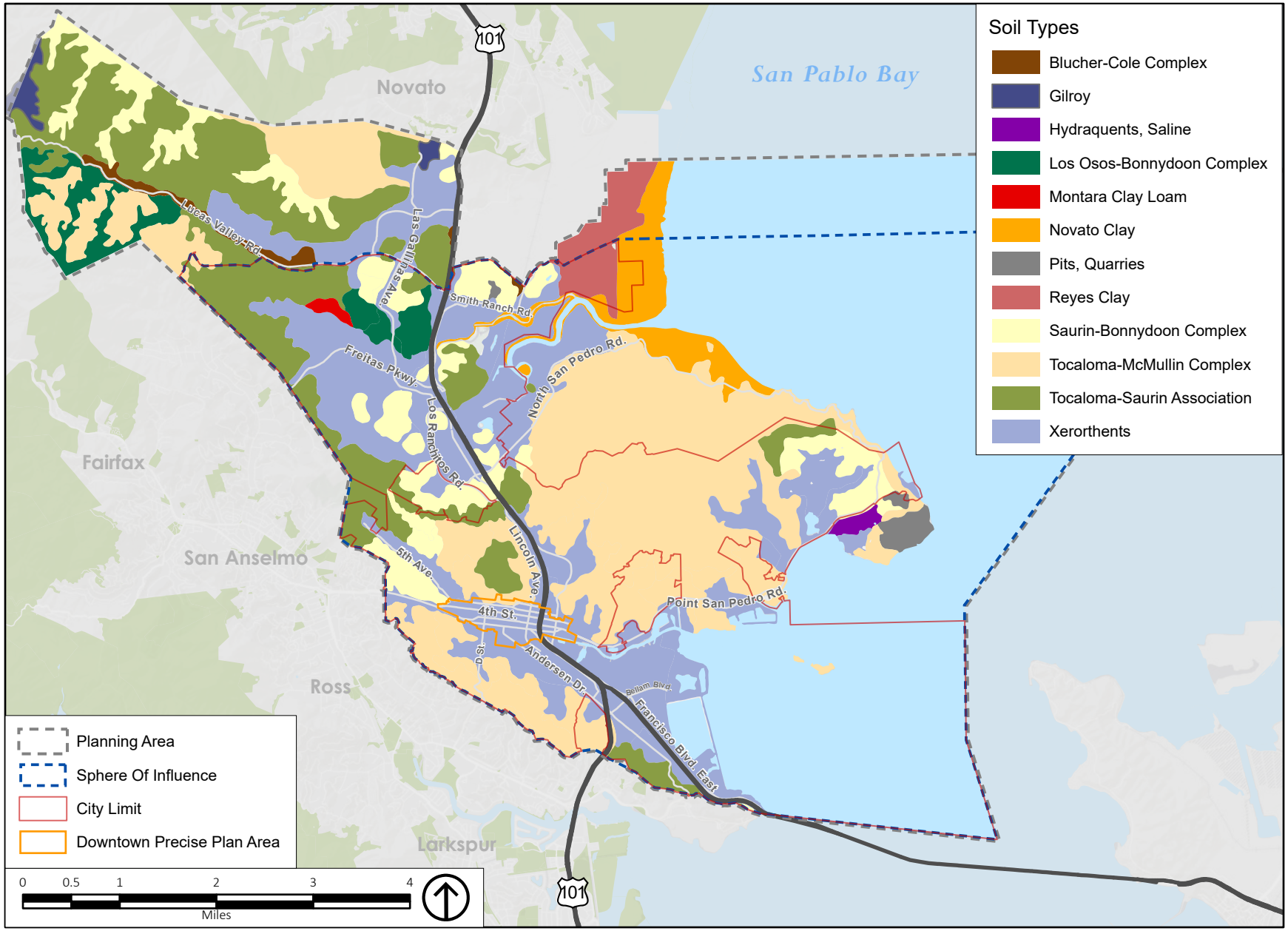
[13] USDA Soil Conservation Service, 1985, Soil Survey of Marin County California.

[14] United States Department of Agriculture, Natural Resources Conservation Service, 2019, Custom Soil Resource Report for San Rafael, from United States Department of Agriculture Web Soil Survey website.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.7-1
Geology Map



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.7-2
Soils Map

The properties of these soils are variable, ranging from fine-loamy soils of the Tocaloma-McMillin series and Saurin-Bonnydoon series, to completely urbanized in the Xerorthents-urban complex, to 100 percent water. According to published soil data, several soil types, notably the Tocaloma-McMillin, are characterized by steep slopes and erosion hazards, where landslides and flows are possible.[15]

Regional Seismicity

The Earth's crust includes tectonic plates that collide or slide past one another along plate boundaries. California is particularly susceptible to such plate movements, notably the largely horizontal or "strike-slip" movement of the Pacific Plate as it impinges on the North American Plate. In general, earthquakes occur when the accumulated stress along a plate boundary or fault is suddenly released. This slippage can vary widely in magnitude, from a few millimeters or centimeters to tens of feet.

The performance of human-made structures during a major seismic event varies widely due to a number of factors, including location with respect to active fault traces or areas prone to liquefaction or seismically induced landslides; the type of building construction (e.g., wood frame, unreinforced masonry, nonductile concrete frame); and the proximity, magnitude, depth, and intensity of the seismic event itself. In general, evidence from past earthquakes shows that wood-frame structures tend to perform well, especially when their foundations are properly designed and anchored. Conversely, older, unreinforced masonry structures and nonductile reinforced concrete buildings (especially those built in the 1960s and early 1970s) do not perform well, especially if they have not undergone appropriate seismic retrofitting. Applicable building code regulations, such as those in the CBC, include seismic requirements that are designed to ensure the satisfactory performance of building materials under prescribed seismic conditions.

The EIR Study Area, like much of the San Francisco Bay Area, is vulnerable to seismic activity due to the presence of active faults in the region. The most prominent active fault near the EIR Study Area is the San Andreas Fault approximately 10 miles to the west. Other active faults in the region include the Hayward Fault approximately 9 miles to the east, the San Gregorio Fault 16 miles to the southwest, and Rodgers Creek Fault 15 miles to the northeast, as shown on Figure 4.7-3.[16] There are no known active faults in the EIR Study Area, so surface fault rupture is not considered a significant hazard.

The severity of ground shaking depends on several variables, such as earthquake magnitude and origin; local geology, including the properties of unconsolidated sediments; groundwater conditions; and topographic setting. In general, ground shaking hazards are most pronounced in areas that are underlain by loosely consolidated soil/sediment.[17]

When earthquake faults within the San Francisco Bay Area's nine-county area were considered, the USGS estimated that the probability of a magnitude (M) 6.7 or greater earthquake prior to year 2032 is 62 percent, or roughly a two-thirds probability. The forecast probability for each individual fault to produce a

[15] USDA Soil Conservation Service, 1985, Soil Survey of Marin County California.

[16] Quaternary faults are faults which are known to have been active in the past 2.6 million years.

[17] Southern California Earthquake Center (SCEC), 2011, *Putting Down Roots in Earthquake Country*, Lucile M. Jones, United States Geological Survey (USGS), and Mark Benthien, SCEC.

M 6.7 or greater seismic event by the year 2032 is 27 percent for the Hayward Fault, 21 percent for the San Andreas Fault, 11 percent for the Calaveras Fault, and 10 percent for the San Gregorio Fault.[18] Earthquakes of this magnitude can create ground accelerations severe enough to cause major damage to structures and foundations not designed to resist earthquakes. Underground utility lines are also susceptible where they lack sufficient flexibility to accommodate the seismic ground motion.[19] In the event of a M 7.8 earthquake on the San Andreas Fault, the seismic forecasts on the Association of Bay Area Governments' interactive GIS website (developed by a cooperative working group that included the USGS and the CGS) suggest that most parts of the EIR Study Area are expected to experience "strong" shaking, and the central, eastern, and southeasternmost portions of the EIR Study Area are expected to experience "very strong" shaking, as shown on Figure 4.7-4.[20] The April 1906 earthquake on the San Andreas Fault, estimated between M 7.7 and M 8.3, was the largest seismic event in recent history that affected the EIR Study Area. More recently, the M 6.9 Loma Prieta earthquake of October 1989 on the San Andreas Fault caused significant damage throughout the San Francisco Bay Area, although no deaths were reported in Marin County.

Liquefaction typically occurs in areas where moist, fine-grained, cohesionless sediment or fill materials are subjected to strong, seismically induced ground shaking. Under certain circumstances, the ground shaking can temporarily transform an otherwise solid material to a fluid state, which can result in the horizontal movement of soils on gentle slopes, called lateral spreading. Liquefaction is a serious hazard and may result in buildings that subside and suffer major structural damage. Liquefaction is most often triggered by seismic shaking, but it can also be caused by improper grading, landslides, or other factors. In dry soils, seismic shaking may cause soil to consolidate rather than flow, a process known as densification. Liquefaction in the EIR Study Area ranges from very low in the hillsides of the city to very high in the marshland and tidal marshes on the eastern side of the EIR Study Area, as shown on Figure 4.7-5.

The northeastern and southeastern portions of the EIR Study Area along the San Pablo Bay and San Rafael Bay, respectively, are predominantly Artificial Fill/Bay Mud soils, which consist of soft, unconsolidated, water-saturated, silty clay with peaty material, plant material, and mollusk shells.[21] These low-lying areas that front the bay are particularly susceptible to liquefaction. According to the hazard maps published by USGS, areas surrounding Miller Creek and the outlets to Gallinas Creek and San Rafael Creek have been designated as liquefaction hazard zones.[22] In the central-northern and eastern portions of the EIR Study Area, the soils consist of colluvium and bedrock, which have a low susceptibility to liquefaction. As shown on Figure 4.7-5, the majority of the high and very high liquefaction susceptibility areas in the EIR Study Area are in urbanized, low-lying areas near creeks or the waterfront. Many of the open space areas and hillside neighborhoods are in low or very low liquefaction susceptibility areas.

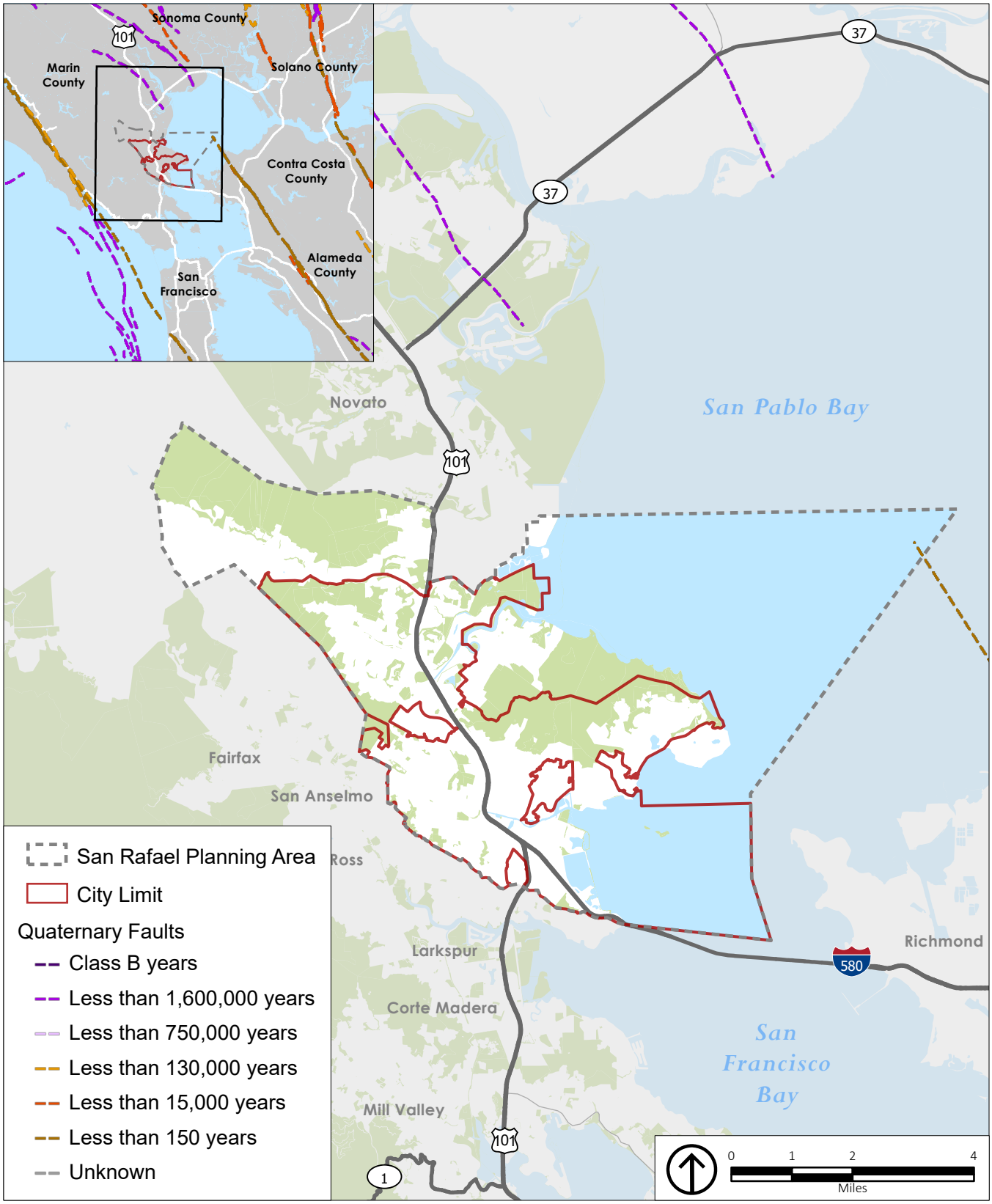
[18] United States Geological Survey (USGS), San Francisco Region Earthquake Probability, http://earthquake.usgs.gov/regional/nca/wg02/images/percmap-lrg.html, accessed on May 4, 2019.

[19] Association of Bay Area Governments (ABAG), 1995, *The San Francisco Bay Area On Shaky Ground*, Publication Number P95001EQK, 13 maps, scale 1:1,000,000.

[20] Association of Bay Area Governments (ABAG), 2013, Interactive Hazards Map, Earthquake Shaking Scenarios, http://gis.abag.ca.gov/website/Hazards/?hlyr=northSanAndreas, accessed on May 6, 2019.

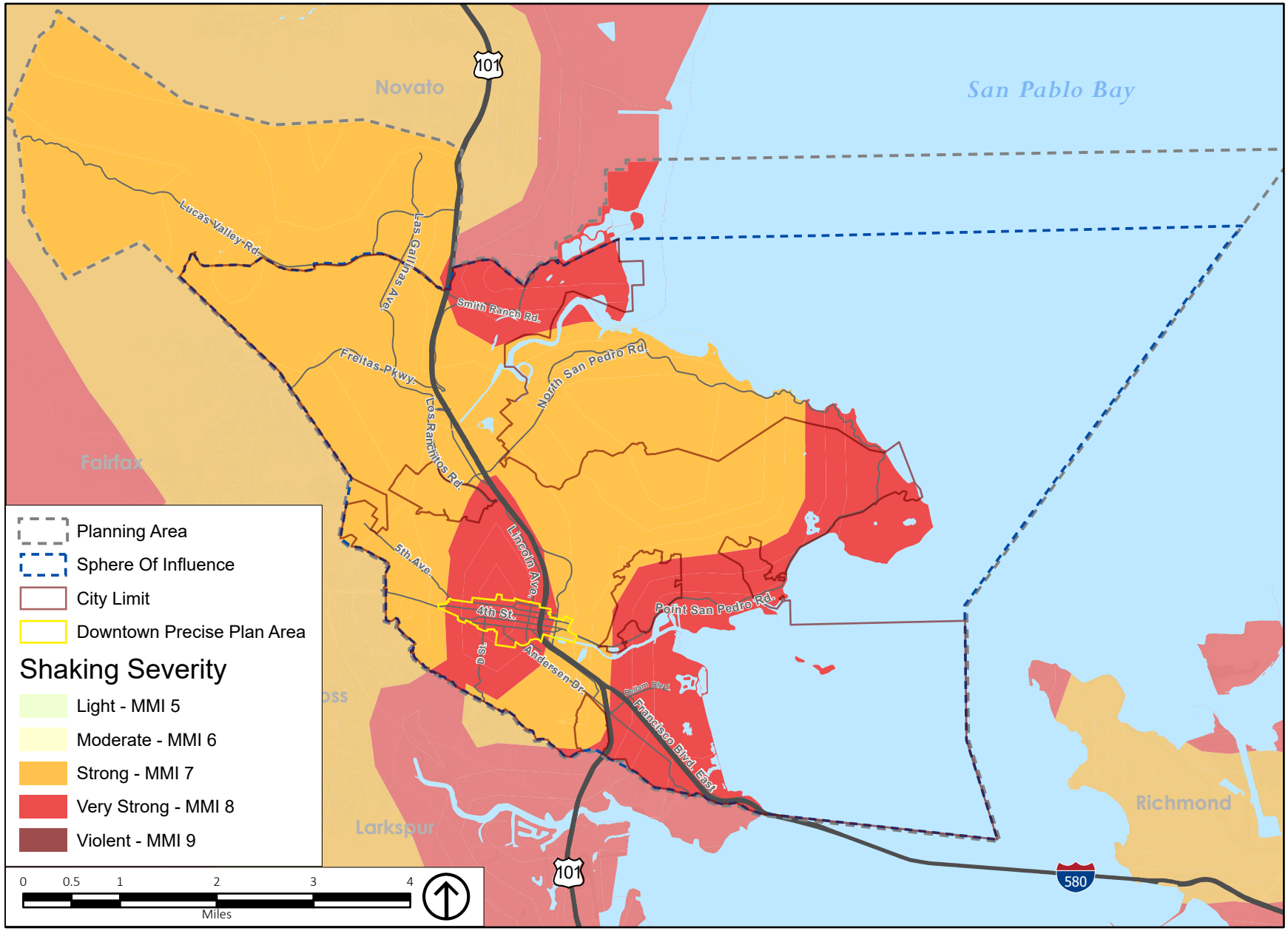
[21] City of San Rafael, 2017, Local Hazard Mitigation Plan. Page 4-51.

[22] ABAG Resilience Program, 2019, Liquefaction Susceptibility, http://gis.abag.ca.gov/website/Hazards/?hlyr=northSanAndreas&co=6041#nogo1, accessed on May 6, 2019.



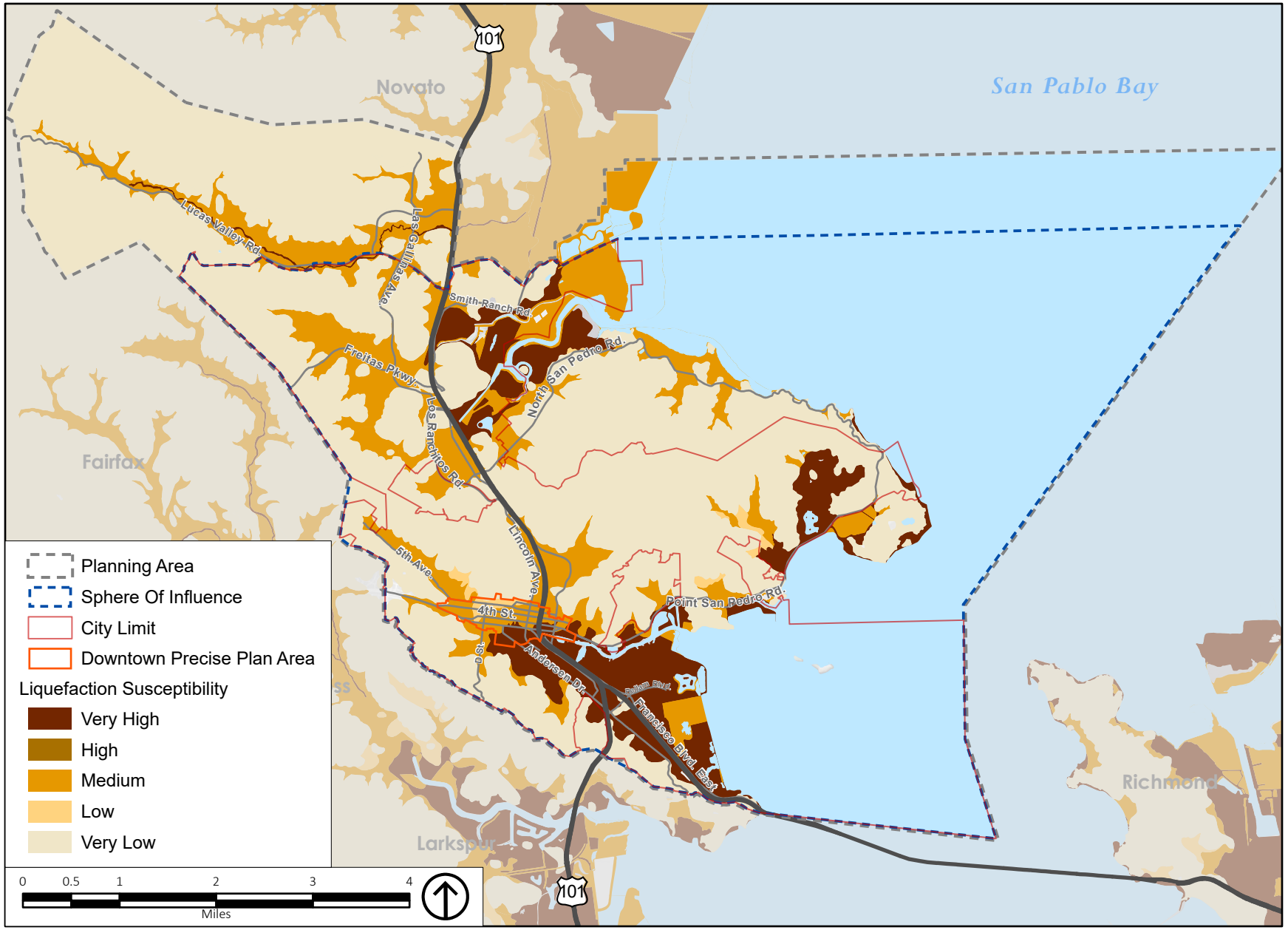
Source: City of San Rafael, 2019; ESRI, 2017; PlaceWorks, 2019; USGS, 2018.

Figure 4.7-3
Quaternary Faults



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.7-4
Ground Shake Potential Map



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; USGS, 2006; PlaceWorks, 2019; California Geological Survey, 2017.

Figure 4.7-5
Liquefaction Map

Landslides

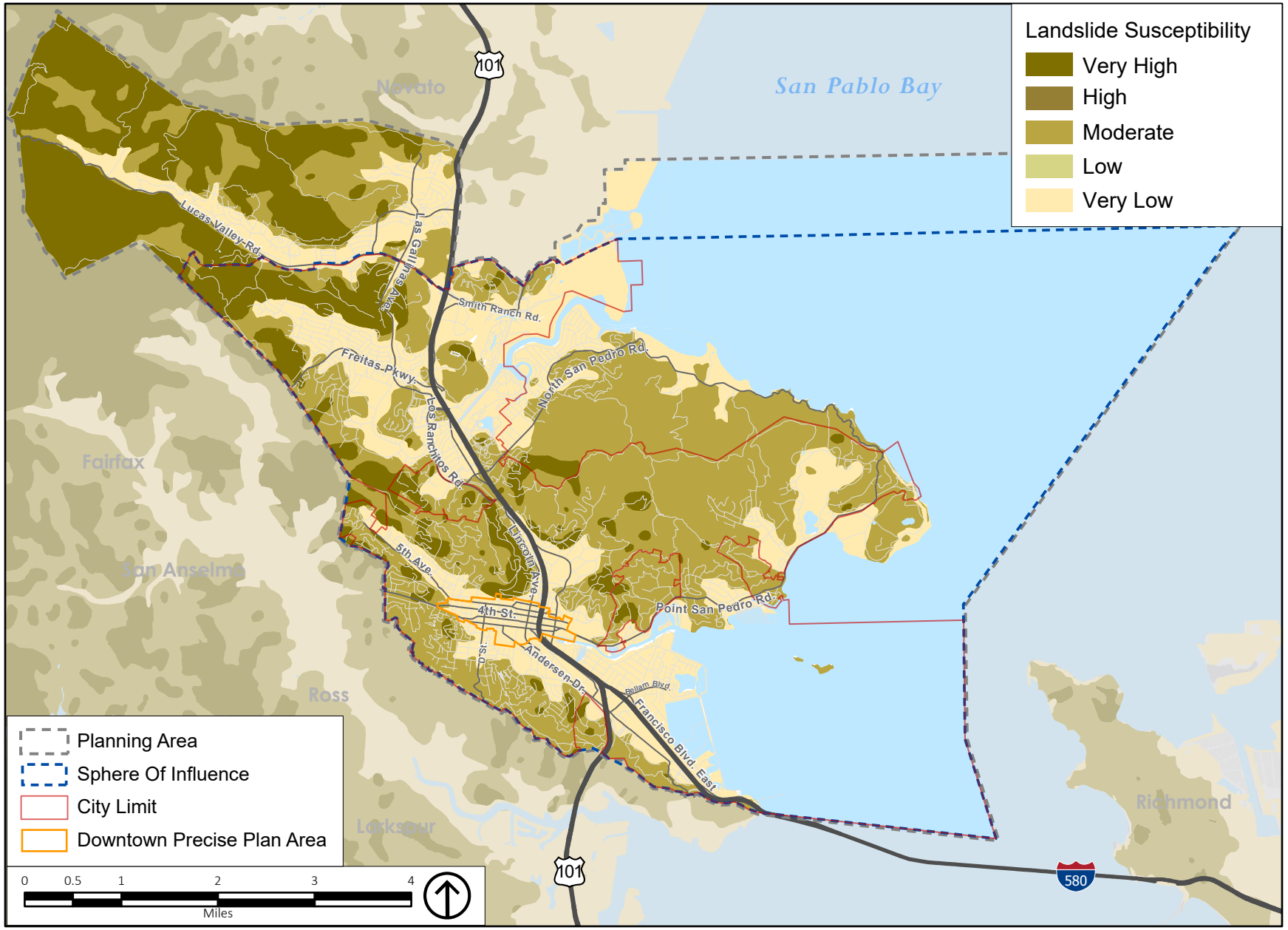
Landslides are gravity-driven movements of earth materials that can include rock, soil, unconsolidated sediment, or combinations of such materials. The rate of landslide movement can vary considerably; some move rapidly, as in a soil or rock avalanche, and others "creep," or move slowly for long periods of time. The susceptibility of a given area to landslides depends on many variables, although the general characteristics that influence landslide hazards are widely acknowledged. Some of the more important contributing factors are:

- Slope Material. Loose, unconsolidated soils and soft, weak rocks are more hazardous than are firm, consolidated soils or hard bedrock.
- Slope Steepness. Most landslides occur on moderate to steep slopes.
- Structure and Physical Properties of Materials. This includes the orientation of layering and zones of weakness relative to slope direction.
- Water Content. Increased water content increases landslide hazard by decreasing friction and adding weight to the materials on a slope.
- Vegetation Coverage. Abundant vegetation with deep roots promotes slope stability.
- Proximity to Areas of Erosion or Man-Made Cuts. Undercutting slopes can greatly increase landslide potential.
- Earthquake Ground Motions. Strong seismic ground motion can trigger landslides in marginally stable slopes or loosen slope materials, which increases the risk of future landslides.

Landslides have the potential to occur in the EIR Study Area, most notably on the steeper slopes that lie on the western edge of the EIR Study Area, in addition to hilly areas surrounding China Camp State Park, Boyd Park, and Harry Barbier Memorial Park (see Figure 4.7-6). In these areas, landslides are commonly associated with slopes underlain with Franciscan Melange and pre-existing landslide deposits, which indicate unstable underlying materials.[23] Historically, five major landslide events have been recorded in the EIR Study Area in 1925, 1982, April 2006, January 2017, and February 2017.[24]

Shale is the most unstable of the many rock types within the Franciscan Formation, whereas sandstone and conglomerate units tend to be more stable with a lower landslide risk. Many of the upland areas in the EIR Study Area are characterized by steep slopes and soils that overlie Franciscan bedrock. Landslides are not an issue in parts of the EIR Study Area where the topography is flat. Due to the differences in the physical characteristics of slope materials, which markedly influence landslide potential, some superficially similar areas may differ widely in terms of landslide hazards. For this reason, site-specific geotechnical investigations are essential to the accurate assessment of potential landslide hazards at any given site.

[23] City of San Rafael, 2017, Local Hazard Mitigation Plan, Page 4-81.
[24] City of San Rafael, 2017, Local Hazard Mitigation Plan, Page 4-81 to 4-85.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.7-6
Landslide Areas

Erosion

Erosion occurs when the upper layers of soil are displaced by erosive agents such as water, ice, snow, air, plants, animals, or anthropogenic forces. Sandy soils on moderate slopes or clayey soils on steep slopes are susceptible to erosion when exposed to these forces.[25] Erosion can become more frequent when established vegetation is disturbed or removed due to grading, wildfires, or other factors. Within the valley areas of the EIR Study Area, water flow in streams and rivers can erode the banks of waterways, causing the stream or river to meander. Erosion can cause the soil underneath buildings and structures to become compromised or fail, which is typically limited to localized areas.

Land Subsidence

Subsidence hazards are known to be present in the EIR Study Area. In areas containing Artificial Fill/Bay Mud materials, including the northeastern and southeastern edge of the EIR Study Area and the area around Northgate Business Park, historical subsidence has been attributed to the highly compressible nature of the underlying fill and sediments. This has caused development in the southeastern portions of the EIR Study Area to subside below the 100-year flood elevation.[26] With sea level rise, subsidence rates could increase in the EIR Study Area.[27] These areas are also susceptible to differential settlement, which is when a building's support foundation settles in an uneven fashion, often leading to structural damage. Differential settlement occurs on soils that are loosely compacted or have weak bearing capacity, and in cases where soil moisture changes. Such characteristics are common in Artificial Fill/Bay Mud soils.

Expansive Soils

Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomena can include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can exhibit wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils.

Expansive soils are typically very fine grained with a high to very high percentage of clay, typically montmorillonite, smectite, or bentonite clay. Linear extensibility soil tests are often used to identify expansive soils, wherein soil sample volume/length changes in response to reduced moisture content.[28] A linear extensibility of 3 percent or greater connotes moderate to high shrink-swell potential. This soil behavior has the potential to cause damage to buildings, roads, and other structures.

[25] City of San Rafael, 2004, General Plan 2020 Background Report.

[26] City of San Rafael, 2004, General Plan 2020 Background Report.

[27] City of San Rafael, 2017, Local Hazard Mitigation Plan. Page 4-145.

[28] Army Corps of Engineers Field Manual TM 5-818-7, 1985, http://armypubs.army.mil/eng/DR_pubs/dr_a/pdf/tm5_818_7.pdf, accessed on May 7, 2019.

Expansive soils are not common in the EIR Study Area; however, they can exist in localized areas such as the Bay Mud geologic units that underlie eastern San Rafael.[29] The USDA Web Soil Survey (a nationwide data repository) for the EIR Study Area demonstrates low ratings of linear extensibility and plasticity for the majority of the soils in the EIR Study Area, with moderate or high ratings dispersed throughout the northern and eastern areas of the EIR Study Area.[30] Expansive soils are typically identified during project review stages prior to construction, and require specific engineering methods to reduce stresses to buildings and infrastructure. A geotechnical investigation generally provides the most reliable means of evaluating and mitigating such soil characteristics.

Paleontological Resources

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They are valued for the information they yield about the history of the earth and its past ecological settings. Paleontological resources include vertebrates (i.e., animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), microscopic plants and animals (microfossils), and trace fossils (footprints, burrows, etc.). These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontological sites are areas that show evidence of prehuman activity. Often, they are simply small outcrops visible on the surface or sites encountered during grading. While the sites are important indications, it is the geologic formations that are the most important since they may contain important fossils. The Society of Vertebrate Paleontology defines a significant fossil resource as, "identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years)."[31] Because, potentially sensitive areas for the presence of paleontological resources are based on the underlying geologic formation, it is likely that paleontological resources would be found within the EIR Study Area.

Downtown Precise Plan Area

In the Downtown Precise Plan Area, the majority of soils are characterized as Franciscan Complex soils, and the southeastern portion is composed of Artificial Fill/Bay Mud.[32]

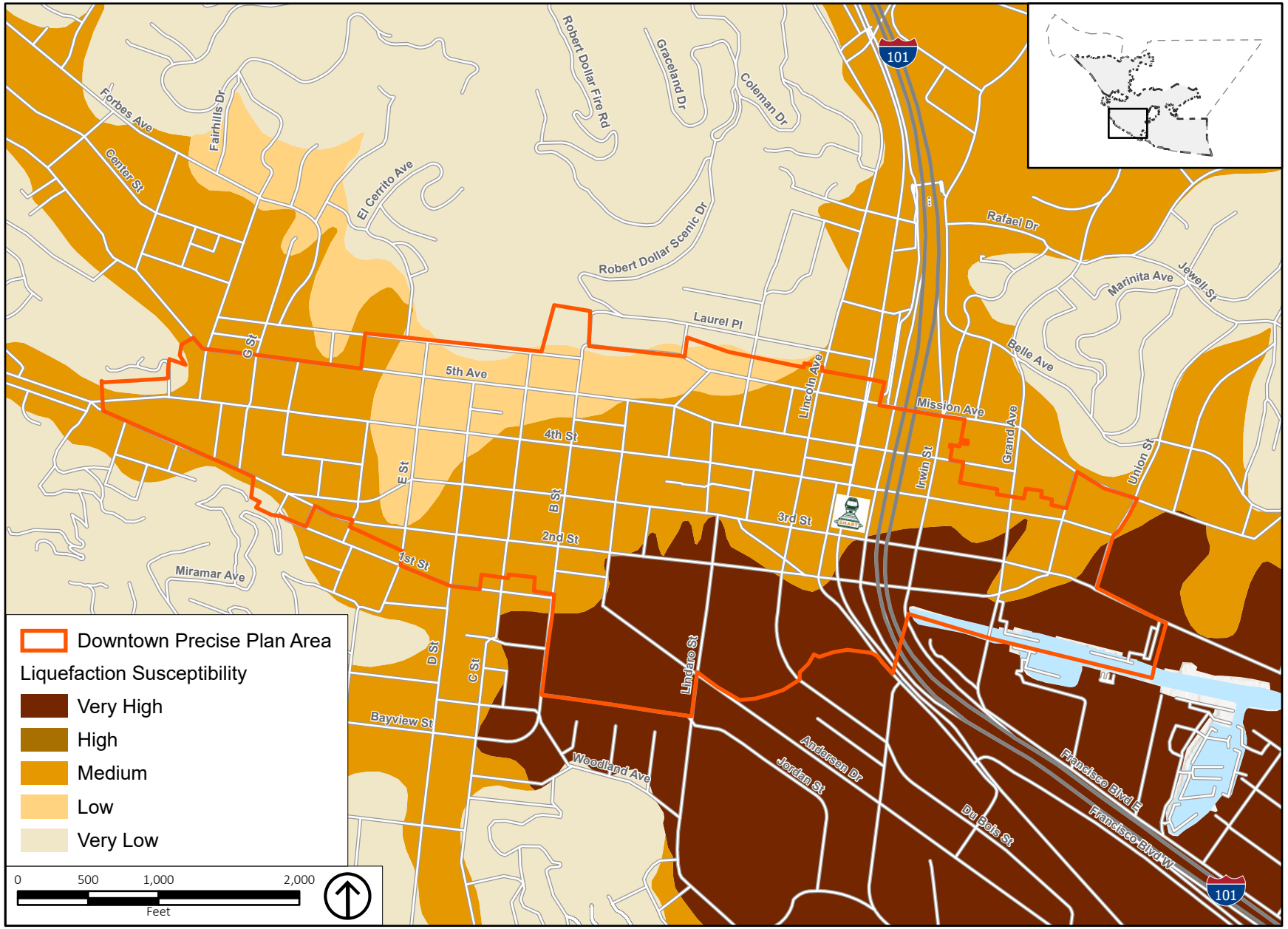
The most prominent active fault near the Downtown Precise Plan Area is the San Andreas Fault, approximately 10 miles to the west. As shown on Figure 4.7-7, the southern portion of the Downtown Precise Plan Area is in a very high liquefaction area, which transitions to moderate and low liquefaction zones as the elevation becomes higher in the northern areas of the Downtown Precise Plan Area.

[29] City of San Rafael, 2004, General Plan 2020 Background Report, Environmental Context.

[30] USDA, 2018, Web Soil Survey, https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed on May 7, 2019.

[31] Society of Vertebrate Paleontology, 2010*, Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources,* page 11. Society of Vertebrate Paleontology. Impact Mitigation Guidelines Revision Committee.

[32] United States Department of Agriculture, Natural Resources Conservation Service, 2019, Custom Soil Resource Report for San Rafael, from United States Department of Agriculture Web Soil Survey website.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019; California Geological Survey, 2017

Figure 4.7-7
Downtown Liquefaction Map

4.7.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant geology and soils impacts if it would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
4. Be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
7. Result in significant cumulative impacts to geology and soils.

4.7.3 IMPACT DISCUSSION

GEO-1	**Implementation of the proposed project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides.**

General Plan 2040

Earthquake Fault Rupture

As discussed in Section 4.7.1.2, Existing Conditions, there are no known active faults in the EIR Study Area, and the nearest fault is the Hayward Fault, approximately 9 miles to the east. The EIR Study Area is not in

an Alquist-Priolo Fault Zone.[33] Based on the lack of known active faults in the EIR Study Area and the required geotechnical investigations for all grading within the EIR Study Area, implementation of proposed General Plan 2040 would not directly or indirectly cause the risk of loss, injury, or death involving rupture of a known earthquake fault. Therefore, the impact would be *less than significant.*

Seismic Ground Shaking

The intensity of ground shaking at a given location depends on several factors, primarily on the earthquake magnitude, the distance from the epicenter, and the characteristics of the soils or bedrock units underlying the site. The Hayward and San Andreas Faults, which are closest to the EIR Study Area, are potentially capable of producing the most intense ground accelerations in the EIR Study Area due to their proximity. Secondary effects of earthquakes are nontectonic processes such as liquefaction, lateral spreading, seismically induced landslides, and ground lurching, which can lead to ground deformation. Ground deformation, including fissures, settlement, displacement, and loss of bearing strength, are the leading causes of damage to structures during a moderate to large earthquake.

In northern California, there is no method to completely avoid earthquake hazards. However, appropriate measures to minimize the effects of earthquakes are included in the most recent CBC, with specific provisions for seismic design. The design of structures in accordance with the CBC would minimize the effects of ground shaking to the greatest degree feasible, except for during a catastrophic seismic event. Additionally, development projects under the proposed General Plan 2040 would be required to comply with the standards in the San Rafael Geotechnical Review Matrix, which requires a geotechnical report defining and delineating seismic hazards on a project-by-project basis. Because potential future development would be required to comply with both the CBC and the Geotechnical Review Matrix, implementation of the proposed General Plan 2040 would not cause or worsen seismic ground shaking; therefore, the impact would be *less than significant*.

Liquefaction

The EIR Study Area contains a range of geological and soil profiles. Within the EIR Study Area, liquefaction susceptibility ranges from low in steeply sloped areas to moderate and very high in the marshland and tidal marshes on the eastern side of the EIR Study Area, as shown on Figure 4.7-5. As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development under the proposed General Plan 2040 is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. These urban areas are generally located in portions of the EIR Study Area that have low liquefaction susceptibility. However, some existing urban areas in the EIR Study Area are built atop Artificial Fill/Bay Mud soil materials, which have a high liquefaction susceptibility. In the event that future development is proposed on Artificial Fill/Bay Mud materials, the development would be required to comply with existing regulations in the CBC and undergo a geotechnical review in accordance with Appendix F, Geotechnical Review Matrix, of the proposed General Plan 2040. Compliance with these regulations would minimize

[33] California Geological Survey, Alquist-Priolo Earthquake Fault Zoning Act, https://www.conservation.ca.gov/cgs/alquist-priolo, accessed on March 24, 2020.

the risk of loss, injury, or death involving liquefaction after a seismic-related ground failure, and impacts would be *less than significant*.

Landslides

Portions of the EIR Study Area susceptible to landslides are on the steep slopes to the west and in hilly areas surrounding China Camp State Park, Boyd Park, and Harry Barbier Memorial Park. As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development under General Plan 2040 is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. New development or redevelopment in any of the portions of the EIR Study Area deemed to be within landslide-susceptible areas would be required to comply with grading, erosion, and sediment control regulations in the CBC and the provisions in SRMC Chapter 14.12, Hillside Development Overlay District, and Chapter 15.06, Grading and Drainage.

The proposed Safety (S) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts that contribute to the risk of loss, injury, or death as a result of earthquakes. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts from earthquakes:

Goal S-1: A Safer, More Resilient City. Minimize San Rafael's vulnerability to the impacts of environmental hazards and public health emergencies.

- Policy S-1.1: Local Hazard Mitigation Plan (LHMP). The San Rafael LHMP is adopted by reference into the General Plan. Policies and actions throughout the General Plan shall be consistent with the LHMP and support its goals and objectives.
  - Program S-1.1A: LHMP Mitigation Action Plan. Implement the Mitigation Action Plan in the LHMP. The City will consider opportunities to advance each action through operating procedures, development approvals, budgets, public education, and capital improvement projects.
  - Program S-1.1B: Mitigation Program Funding. Develop an overall funding strategy to prioritize and pursue mitigation projects, including identification and tracking of grants and regular coordination with FEMA and State hazard mitigation agencies.
  - Program S-1.1C: LHMP Updates. Periodically update the Local Hazard Mitigation Plan to reflect new data, technology, available resources, partnership opportunities, and state and federal requirements.
- Policy S-1.2: Location of Future Development. Permit development only in those areas where potential danger to the health, safety, and welfare of the community can be adequately mitigated. Land uses and densities should take environmental hazards such as earthquakes, flooding, sea level rise, and wildfires into consideration.
  - Program S-1.2A: Entitlement Process. Use the entitlement process to evaluate the potential for hazards and to require appropriate mitigation measures and approval conditions.
  - Program S-1.2B: Use of Hazard Maps in Development Review. Review slope stability, seismic, flood hazard, sea level rise, wildfire, and other environmental hazard maps when development is

proposed. Require appropriate studies and actions to ensure that hazards are identified and mitigated.

- Policy S-1.3: Location of Public Improvements. Avoid locating public improvements and utilities in areas with high hazard levels. When there are no feasible alternatives, require effective mitigation measures to reduce the potential for damage.
  - Program S-1.3A: Critical Facilities in Vulnerable Areas. Prepare a Public Facility Vulnerability Assessment to identify City buildings and other infrastructure that are susceptible to environmental hazards. Measures should be taken to avoid extraordinary maintenance and operating expenses associated with hazardous conditions and minimize damage potential and interruption of service following a disaster.

Goal S-2: Resilience to Geologic Hazards. Minimize potential risks associated with geologic hazards, including earthquake-induced ground shaking and liquefaction, landslides, erosion, sedimentation, and settlement.

- Policy S-2.1: Seismic Safety of New Buildings. Design and construct all new buildings to resist stresses produced by earthquakes. The minimum level of seismic design shall be in accordance with the most recently adopted building code as required by State law.
  - Program S-2.1A: Seismic Design. Adopt and enforce State building codes which ensure that new or altered structures meet the minimum seismic standards set by State law. State codes may be amended as needed to reflect local conditions.
  - Program S-2.1B: Geotechnical Review. Continue to require geotechnical studies and peer review for proposed development as set forth in the City's Geotechnical Review Matrix (Appendix F). Such studies should determine the extent of geotechnical hazards, optimum design for structures and the suitability of proposed development for its location, the need for special structural requirements, and measures to mitigate any identified hazards. Periodically review and update the Geotechnical Review Matrix to ensure that it supports and implements the Local Hazard Mitigation Plan.
  - Program S-2.1C: Earthquake Hazard Study. As recommended by the Local Hazard Mitigation Plan, complete an Earthquake Hazard Study that examines geologic hazards in the city.
- Policy S-2.2: Minimize the Potential Effects of Landslides. Development proposed in areas with existing or potential landslides (as identified by a registered geologist or geotechnical engineer) shall not be endangered by, or contribute to, hazardous conditions on a site or adjoining properties. The City will only approve new development in areas of identified landslide hazard if the hazard can be appropriately mitigated, including erosion control and replacement of vegetation. Landslide mitigation should include measures to reduce secondary impacts such as loss of vegetation and soil erosion.
  - Program S-2.2A: Landslide Mitigation and Repair Projects. Undertake landslide hazard mitigation and repair projects, as outlined in the LHMP. These projects include a landslide identification and management program, repair of the Fairhills Drive landslide, and repair of the Bret Harte sewer easement.
- Policy S-2.3: Seismic Safety of Existing Buildings. Encourage the rehabilitation or elimination of structures susceptible to collapse or failure in an earthquake. Historic buildings shall be treated in

accordance with the Historic Preservation Ordinance and Historic Building Code (see also Program CDP-5.5A).

- Program S-2.3A: Seismic Safety Building Reinforcement. Enforce State and local requirements for reinforcement of existing buildings, including the City's remaining unreinforced masonry (URM) buildings.
- Program S-2.3B: Soft-Story Building Mitigation Plan. Complete a citywide assessment of soft-story buildings and develop a mitigation strategy and cost-benefit analysis to modify these structures to reduce their potential to collapse during an earthquake.

Implementation of the above goals, policies, and programs, as well as compliance with State, regional, and local regulations pertaining to structural safety regarding fault rupture, ground shaking, liquefaction, and landslides, would ensure that potential future development that results from implementation of the proposed project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death. Therefore, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Earthquake Fault Rupture

As discussed in Section 4.7.1.2, Existing Conditions, there are no known active faults within the Downtown Precise Plan Area, and the nearest fault is the Hayward Fault, approximately 9 miles to the east. The Downtown Precise Plan Area is not in an Alquist-Priolo Fault Zone.[34] Based on the lack of known active faults within the Downtown Precise Plan Area and the required geotechnical investigations for all grading within the Downtown Precise Plan, implementation of the Downtown Precise Plan would not directly or indirectly cause the risk of loss, injury, or death involving rupture of a known earthquake fault. Therefore, the impact would be *less than significant.*

Seismic Ground Shaking

There is no way to entirely avoid earthquake hazards in northern California. However, earthquake hazard mitigation is addressed in many State, regional, and local regulations. Appropriate measures to minimize the effects of earthquakes are included in the most recent CBC, with specific provisions for seismic design. Potential future development under the Downtown Precise Plan would be required to comply with the CBC. The design of structures in accordance with the CBC would minimize the effects of ground shaking to the greatest degree feasible. As discussed in Section 4.7.1.1, Regulatory Framework, the SRMC includes Chapter 12.340, which provides minimum standards for structural seismic resistance and systematic procedures for identification and classification of unreinforced masonry buildings and requires qualified Historical Buildings to comply with the State Historical Building Code. Additionally, potential future development would be required to comply with the procedures set forth in the Geotechnical Review Matrix, included as Appendix F of the proposed General Plan 2040, which requires a geotechnical report

[34] California Geological Survey, Alquist-Priolo Earthquake Fault Zoning Act, https://www.conservation.ca.gov/cgs/alquist-priolo, accessed on March 24, 2020.

defining and delineating seismic hazards on a project-by-project basis. Therefore, implementation of the Downtown Precise Plan would not cause or worsen seismic ground shaking, and the impact would be *less than significant*.

Liquefaction

Liquefaction susceptibility is very high in the southeastern portion of the Downtown Precise Plan Area, and moderate to low as the slopes increase in the western and northern portions of the Downtown Precise Plan Area. Although liquefaction susceptibility is very high within the Downtown Precise Plan Area, potential future development would be required to comply with existing regulations. Compliance with these regulations would minimize the risk of loss, injury, or death involving liquefaction due to a seismic-related event, and impacts would be *less than significant*.

Landslides

Areas susceptible to landslides are largely located on the western and southwestern edges of the Downtown Precise Plan Area. New development or redevelopment in any of the portions of the Downtown Precise Plan Area deemed to be within landslide-susceptible areas would be required to comply with grading, erosion, and sediment control regulations in the CBC and provisions in SRMC Chapter 14.12, Hillside Development Overlay District, and Chapter 15.06, Grading and Drainage. Compliance with existing regulations would minimize the risk of loss, injury, or death, and impacts due to landslides would be *less than significant.*

Significance without Mitigation: Less than significant.

GEO-2 Implementation of the proposed project could result in substantial soil erosion or the loss of topsoil.

General Plan 2040

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development under General Plan 2040 is expected to occur in urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. Substantial soil erosion or the loss of topsoil during construction of future development could undermine structures or minor slopes, which would be a concern during implementation of the proposed General Plan 2040.

The CBC provides regulations for construction to provide proper grading, drainage, and erosion and sediment control. In addition, SRMC Section 9.30.150, Erosion and Sediment Control Plan Requirements, requires erosion and sediment control plans for projects that are subject to a grading permit; projects that are subject to a building permit or other permit with the potential for significant erosion or non-stormwater discharges of sediment or construction site waste; and as required by the City based on project characteristics, such as location on hillsides or near creeks, or construction during rainy seasons. Erosion control measures in an erosion and sediment control plan can include seeding slopes, installation

of temporary dikes and swales, placement of straw bales and filter fences, outlet protection, grass-lined swales, and installation of sediment retention structures, as appropriate for specific sites. In addition, SRMC Section 15.06.110, Grading and Drainage, requires grading of development to conform to site-specific soil and geologic conditions with minimal tree removal.

Furthermore, because future development is anticipated to occur as infill or redevelopment in urban areas, development is not likely to result in substantial soil erosion or loss of topsoil. Adherence to existing regulatory requirements that include, but are not limited to, the CBC and the SRMC grading and drainage requirements for new developments, would ensure that impacts associated with substantial erosion and loss of topsoil from potential future development would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Chapter 3, Project Description, of this Draft EIR, the Downtown Precise Plan Area is an existing urban area in the city of San Rafael and potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. Substantial soil erosion or the loss of topsoil during construction of future development could undermine structures or minor slopes, which would be a concern during implementation of the Downtown Precise Plan. However, development in the Downtown Precise Plan Area is subject to the same CBC and SRMC regulations as development under the proposed General Plan 2040, detailed above. Adherence to these regulations would ensure that impacts associated with substantial erosion and loss of topsoil from potential future development would be *less than significant*.

Significance without Mitigation: Less than significant.

GEO-3	**Implementation of the proposed project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.**

General Plan 2040

Unstable geologic units are known to be present within the EIR Study Area. As discussed under Impact Discussion GEO-1, landslides have historically occurred and could continue to occur in areas with steeper slopes and less stable soil types. These include areas with Franciscan bedrock, particularly in the upland areas, on the steeper slopes to the west, and on the hillside areas surrounding China Camp State Park, Boyd Park, and Harry Barbier Memorial Park. Subsidence hazards are also known to be present in the EIR Study Area in areas containing Bay Mud and fill materials on the eastern edge of the EIR Study Area. Liquefaction susceptibility ranges from low in upland and hillside areas, to very high in the marshland and tidal marshes along the San Pablo and San Rafael Bay.

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development as a result of implementation of the proposed General Plan 2040 would occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. The areas of high liquefaction susceptibility are not located in the highly urbanized portions within the EIR Study Area where potential future development is anticipated to occur; therefore, implementation of General Plan 2040 would not be intentionally located on a geologic unit or on soil that is unstable. However, there is the potential that future development could occur near areas of potential landslides, lateral spreading, subsidence, liquefaction, or collapse.

As determined in Impact Discussions GEO-1 and GEO-2, future development under General Plan 2040 would be required to comply with the CBC, which provides regulations for building design and construction to ensure geologic and soil stability. Additionally, the City requires that geotechnical reports be prepared and submitted to the City prior to approval or construction of applicable projects pursuant to the requirements set forth in the Geotechnical Review Matrix (see Appendix F of the General Plan 2040). In addition to protections afforded by State laws, General Plan goals, policies, and programs listed under Impact Discussion GEO-1 would require local planning and development decisions to consider potential risks of development on unstable soils or geologic units. Policy S-1.2, Program S-1.2A, Policy S-1.3, Program S-1.3A, and Program S-1.3B, listed in Impact Discussion GEO-1, specifically address the location of future development and include development standards that prohibit development in areas where there is a potential danger from geologic hazards.

All potential future development under implementation of the proposed General Plan 2040 would be required to comply with State and local regulations, including SRMC provisions and General Plan goals, policies, and programs that minimize impacts related to unstable geologic units and soils where landslide, lateral spreading, subsidence, liquefaction, or collapse could occur in the EIR Study Area. General Plan 2040 goals, policies, and programs would also require ongoing review, identification, and maintenance of maps and regulations related to geologic and seismic hazards. Therefore, implementation of proposed General Plan 2040 would not result in development on a geologic unit or on soils that are unstable and could result in landslides, lateral spreading, subsidence, liquefaction, or collapse, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Chapter 3, Project Description, of this Draft EIR, the Downtown Precise Plan Area is an existing urban area in the city of San Rafael and potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. The Downtown Precise Plan Area contains both landslide and liquefaction susceptibility areas. However, future development under the proposed Downtown Precise Plan would be required to comply with the CBC, which provides regulations for building design and construction to ensure geologic and soil stability. Additionally, the City's Geotechnical Review Matrix requires that geotechnical reports be prepared and

submitted to the City prior to approval or construction of projects in areas with known geological hazards. Therefore, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

GEO-4 Implementation of the proposed project could be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

General Plan 2040

As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development as a result of implementation of the proposed General Plan 2040 would occur in existing urban areas, would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed, underutilized, and/or in close proximity to existing residential and residential-serving development. While expansive soils are not common in the EIR Study Area, they could potentially exist in localized areas such as the Artificial Fill/Bay Mud geologic units underlying the northeastern and southeastern portions of the EIR Study Area. These soils are typically identified during project review stages and require specific engineering methods to reduce stresses to buildings and infrastructure.

The EIR Study Area consists of some State- or County-owned land where future development would not be under the purview of the City of San Rafael. Furthermore, because potential future development under the proposed General Plan 2040 is anticipated to occur in urbanized areas, it is not likely that development would occur in these portions of the EIR Study Area. However, in the event that future development is proposed in these portions of the EIR Study Area and is located on an Artificial Fill/Bay Mud geologic unit, a geotechnical investigation would be required to evaluate soil characteristics and identify mitigation if the soils are determined to be expansive. Such investigations are required both by the SRMC Chapter 12.100 and the proposed General Plan 2040. Both the SRMC and the proposed General Plan 2040 would require that future development proposed on expansive soils follow regulations imposed by the CBC, such as standards for seismic safety, excavation, foundations, retaining walls, site demolition, and grading activities including drainage and erosion control. Furthermore, requirements for geotechnical investigations at development site locations where potential hazards, including land instability, have already been identified are bolstered by various goals, policies, and programs of the proposed General Plan 2040 ,as listed in Impact Discussion GEO-1.

As discussed, potential future development under the proposed General Plan 2040 would be required to comply with existing regulations adopted to minimize development on expansive soils in the EIR Study Area as part of the City's project approval process. Potential future development would also comply with the proposed General Plan goals, policies, and programs that require ongoing review, identification, and maintenance of maps and regulations related to geologic and seismic hazards, impacts would be *less-than-significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As determined above, expansive soils are located to the east of the EIR Study Area, several miles away from the Downtown Precise Plan Area. Therefore, potential future development in the Downtown Precise Plan Area would not occur on expansive soils and *no impact* would occur.

Significance without Mitigation: No impact.

GEO-5	**Implementation of the proposed project could utilize septic tanks or alternative wastewater disposal systems where soils would be incapable of adequately supporting the in cases where sewers are not available for the disposal of wastewater.**

General Plan 2040

As discussed in Section 4.7.1.1, Regulatory Framework, of this Draft EIR, SRMC Chapter 15.06 prohibits the creation of an individual on-site septic system intended to serve a new lot or parcel. Wastewater from new lots or parcels would be discharged into the existing public sanitary sewer system serviced by the San Rafael Sanitation District and Las Gallinas Valley Sanitation District. Therefore, development in the EIR Study Area would not result in the use of septic tanks or alternative wastewater disposal systems. Additionally, the proposed General Plan 2040 includes Policy S-2.6, Septic Systems, which discourages the use of septic systems in the EIR Study Area, and in the event that no other alternatives exist, on-site soil tests would be required to determine if the soils are suitable for a septic system. Therefore, potential future development would not result in septic tanks or alternative wastewater disposal systems where soils are not capable of adequately supporting such systems, and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Chapter 3, Project Description, of this Draft EIR, the Downtown Precise Plan Area is an existing urban area in San Rafael, and potential future development would occur in an urban area where septic systems are not permitted. Potential future development in the Downtown Precise Plan Area are either already connected to the San Rafael Sanitary District's system or would be required to be as a condition of project approval. Therefore, *no impact* would occur.

Significance without Mitigation: No impact.

GEO-6 Implementation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

General Plan 2040

No fossils, unique paleontological resources, or unique geologic features have been recorded in the EIR Study Area. The geology and soils in the EIR Study Area are common throughout the city and region and are not considered to be unique. However, geological formations underlying the EIR Study Area have the potential to contain unique paleontological resources. Potential future development would be required to comply with the federal Paleontological Resources Preservation Act that limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency and the California Public Resources Code Section 5097 that prohibits the removal of any paleontological site or feature from public lands without the permission of the jurisdictional agency. Ground-disturbing construction activities (e.g., grading and excavation) associated with potential future development in the EIR Study Area could uncover fossilized remains of organisms from prehistoric environments that have not been recorded. The implementation protocols and adherence to the Society of Vertebrate Paleontology standards would ensure the protection of unique paleontological resources during construction of future development. Some protocol include, but are not limited to:

- Excavations within a 50-foot radius of the find shall be temporarily halted or diverted.
- Ground-disturbance work shall cease until a City-approved, qualified paleontologist determines whether the resource requires further study.
- The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995) as appropriate, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5.
- The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find.
- If is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The excavation plan shall be submitted to the City of San Rafael for review and approval prior to implementation.
- All construction activities shall adhere to the recommendations in the excavation plan.

Until such protocol are adopted by the City, ground-disturbing activities could cause damage to, or destruction of, unique paleontological resources. This is considered a *significant* impact.

Impact GEO-6: Construction activities associated with potential future development could have the potential to directly or indirectly affect a unique paleontological resource.

> Mitigation Measure GEO-6: To ensure sensitive and unique paleontological resources are not directly or indirectly affected in the event that such resources are unearthed during project grading, demolition, or building (such as fossils or fossil-bearing deposits), the City shall adopt the following new General Plan Policy and associated Program:

- New Policy: Paleontological Resource Protection. Prohibit the damage or destruction of paleontological resources, including prehistorically significant fossils, ruins, monuments, or objects of antiquity, that could potentially be caused by future development.
  - New Program: Paleontological Resource Mitigation Protocol. The City shall prepare and adopt a list of protocols in accordance with Society of Vertebrate Paleontology standards that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

Although the Downtown Precise Plan Area is urban and built out, future development could require substantial excavation that could reach significant depths below the ground surface, where no such excavation has previously occurred. Such excavation could result in the unearthing of unrecorded fossils of potential scientific significance and other unique geologic features. This could result in damage to or destruction of unknown paleontological resources or unique geologic features, and impacts would be *significant*. However, potential future development in the Downtown Precise Plan Area would be required to comply with the Policy and associated Program adopted in the General Plan 2040 as required by Mitigation Measure GEO-6, which would reduce impacts to *less-than-significant* levels.

Significance with Mitigation: Less than significant.

GEO-7 Implementation of the proposed project could result in a cumulatively considerable impact to geological resources.

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, the cumulative setting includes growth within the EIR Study Area in combination with projected growth in the rest of Marin County and the surrounding region. Anticipated development in the EIR Study Area would be subject to regulations pertaining to seismic safety, including the CBC and SRMC requirements. Compliance with these requirements would, to the maximum extent practicable, reduce cumulative, development-related impacts that pertain to seismic shaking, seismic-related ground failure, seismically induced landslides, soil erosion, and unstable soils. Similarly, compliance with relevant SRMC requirements, as well as the requirements of the CBC, would minimize the cumulative impacts associated with substantial erosion or loss of topsoil. While none of the soils in the EIR Study Area are considered to have unique geological resources, unique paleontological resources may occur. Site specific evaluation in the event that previously unknown resources are discovered during construction activities for new development or redevelopment would be required. Future development would be focused on specific sites or areas, which would be evaluated for site development constraints on a case-by-case basis and required to implement Mitigation Measure GEO-6, which would ensure the projection of unearthed unique paleontological resources. Therefore, the proposed project would not result in a cumulatively considerable impact to geology and soils and cumulative impacts would be *less than significant.*

Significance with Mitigation: Less than significant.

4.8 GREENHOUSE GAS EMISSIONS

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to greenhouse gas (GHG) emissions. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project.

The analysis in this chapter is based on buildout of the proposed General Plan 2040, which includes the buildout in the Downtown Precise Plan Area. The proposed buildout is modeled using California Air Resources Board's (CARB's) Emissions Factor Model (EMFAC2017), the Off-Road Emissions Factor Model (OFFROAD2017), and energy use data provided by Pacific Gas and Electric Company (PG&E) and Marin Clean Energy (MCE) compiled for the City's recent GHG emissions inventory. This analysis also uses the trip generation and vehicle miles traveled (VMT) provided by Fehr & Peers. Trip generation is in Appendix I, Transportation Data, and VMT calculation are in Chapter 4.16, Transportation, of this Draft EIR. GHG emissions modeling is in Appendix D, Air Quality and Greenhouse Gas Emissions Data, of this Draft EIR.

Discussions regarding climate-related hazards, such as air quality, landslides, sea-level rise, flooding, drought, and wildfires are located in Chapter 4.3, Air Quality; Chapter 4.7, Geology and Soils; Chapter 4.10, Hydrology and Water Quality; and Chapter 4.18, Wildfire, of this Draft EIR.

4.8.1 ENVIRONMENTAL SETTING

4.8.1.1 TERMINOLOGY

The following are definitions for terms used throughout this chapter.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a GHG absorbs relative to a molecule of carbon dioxide (CO_2) over a given period (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e)**. The standard unit to measure the amount of GHGs in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

4.8.1.2 GREENHOUSE GASES AND CLIMATE CHANGE

Human activities contribute to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. The primary source of GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, CO_2, methane (CH_4), and ozone (O_3)—that may cause an increase in global average temperatures. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride

(SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[1,2,3] The major GHGs are briefly described as follows:

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of applicable GHG emissions are shown in Table 4.8-1. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.[4]

TABLE 4.8-1 GHG EMISSIONS AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[a]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[a]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[a]
Carbon Dioxide (CO_2)	1	1	1
Methane[b] (CH_4)	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Notes:
a. Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
b. The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
Sources: Intergovernmental Panel on Climate Change, 1995, *Second Assessment Report: Climate Change 1995*; Intergovernmental Panel on Climate Change. 2007. *Fourth Assessment Report: Climate Change 2007*. New York: Cambridge University Press; Intergovernmental Panel on Climate Change. 2014. *Fifth Assessment Report: Climate Change 2014*. New York: Cambridge University Press.

[1] Intergovernmental Panel on Climate Change, 2001, *Third Assessment Report: Climate Change 2001*, New York: Cambridge University Press.

[2] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop of radiative forcing.

[3] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (California Air Resources Board, 2017, March 14. *Short-Lived Climate Pollutant Reduction Strategy*, https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, State and national GHG inventories do not include black carbon due to ongoing work resolving the precise GWP of black carbon. Guidance for CEQA documents does not yet include black carbon.

[4] CO_2e is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The GWP of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

California's GHG Sources and Relative Contribution

In 2019, the statewide GHG emissions inventory was updated for 2000 to 2017 emissions using the GWPs in IPCC's AR4.[5] Based on these GWPs, California produced 424.10 $MMTCO_2e$ GHG emissions in 2017. California's transportation sector was the single-largest generator of GHG emissions, producing 40.1 percent of the state's total emissions. Industrial-sector emissions made up 21.1 percent, and electric power generation made up 14.7 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (9.7 percent), agriculture and forestry (7.6 percent), high GWP (4.7 percent), and recycling and waste (2.1 percent).[6]

California's GHG emissions have followed a declining trend since 2007. In 2017, emissions from routine GHG emitting activities statewide were 424 $MMTCO_2e$, 5 $MMTCO_2e$ lower than 2016 levels. This represents an overall decrease of 14 percent since peak levels in 2004 and 7 $MMTCO_2e$ below the 1990 level and the state's 2020 GHG target. During the 2000 to 2017 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14 $MTCO_2e$ per capita to 10.7 $MTCO_2e$ per capita in 2017, a 24-percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product [GDP]) is declining, representing a 41-percent decline since the 2001 peak, while the state's GDP has grown 52 percent during this period. For the first time since California started to track GHG emissions, California uses more electricity from zero-GHG sources, such as hydro, solar, wind, and nuclear energy. [7]

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the twentieth century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation.[8] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[9] In the past, gradual changes in temperature changed the distribution of species, availability of

[5] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

[6] California Air Resources Board (CARB). 2019, August 26. 2019 Edition California Greenhouse Gas Inventory for 2000-2017: By Category as Defined in the 2008 Scoping Plan. https://www.arb.ca.gov/cc/inventory/data/data.htm.

[7] California Air Resources Board. 2019, August 26. California Greenhouse Emissions for 2000 to 2017: Trends of Emissions and Other Indicators. https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed November 21, 2019.

[8] Intergovernmental Panel on Climate Change, 2007. Fourth Assessment Report: Climate Change 2007, New York: Cambridge University Press.

[9] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but in a human's lifetime.[10]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty; for example, on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas,
- Warmer and more frequent hot days and nights over most land areas,
- An increase in frequency of warm spells/heat waves over most land areas,
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas,
- Larger areas affected by drought,
- Intense tropical cyclone activity increases, and
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7 degrees Fahrenheit (°F) from 1895 to 2011, and warming has been greatest in the Sierra Nevada.[11] The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest.[12] By 2050, California is projected to warm by about 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels.[13]

In California and western North America, observations of the climate have shown: (1) a trend toward warmer winter and spring temperatures; (2) a smaller fraction of precipitation falling as snow; (3) a decrease in the amount of spring snow accumulation in the lower and middle-elevation mountain zones; (4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and (5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[14] Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, and

[10] Intergovernmental Panel on Climate Change, 2007. Fourth Assessment Report: Climate Change 2007, New York: Cambridge University Press.

[11] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[12] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed November 21, 2019.

[13] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[14] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

unprecedented dry years in 2014 and 2015. Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015.[15]

According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency (CalEPA)—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 4.8-1), and the inertia of the Earth's climate system could produce as much as 0.6 degrees Celsius (°C) (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are described herein and in Table 4.8-2.

- Water Resource Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. Even in projections with relatively little or no decline in precipitation, central and southern parts of the state are expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long, dry summer months.[16]
- Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase by 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[17]
- Sea-Level Rise. Sea-level rise threatens existing or planned infrastructure, development, and ecosystems (wetlands, estuaries, and fisheries) along California's coast. Critical infrastructure lies less than four feet above the high tide, including two international airports—Oakland and San Francisco—and about 172,000 homes.[18] Thermal expansion of ocean waters and melting glaciers have contributed to the rise in global mean sea level by 7 inches. Along the California coast, sea levels have generally risen. Since 1900, mean sea level has increased by about 7 inches at San Francisco and by about 6 inches since 1924 at La Jolla. In contrast, sea level at Crescent City has declined by about 3 inches since 1933 due to an uplift of the land surface from the movement of the Earth's plates.[19]
- Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate

[15] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed April 3, 2019.

[16] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

[17] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

[18] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed April 3, 2019.

[19] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed April 3, 2019.

change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Wildfires can increase particulate air pollution in the major air basins.[20]

- **Increased Energy Demand.** Increases in average temperature and higher frequency of extreme heat events, combined with new residential development across the state, will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[21]

TABLE 4.8-2 SUMMARY OF GHG EMISSIONS RISK TO CALIFORNIA

Impact Category	Potential Risks
Public Health Impacts	▪ Heat waves will be more frequent, hotter, and longer ▪ Poor air quality made worse ▪ Higher temperatures increase ground-level ozone (i.e., smog) levels
Water Resource Impacts	▪ Decreasing Sierra Nevada snow pack ▪ Challenges in securing adequate water supply ▪ Potential reduction in hydropower ▪ Loss of winter recreation
Agricultural Impacts	▪ Increasing temperature ▪ Increasing threats from pests and pathogens ▪ Expanded ranges of agricultural weeds ▪ Declining productivity ▪ Irregular blooms and harvests
Coastal Sea-Level Impacts	▪ Accelerated sea-level rise ▪ Increasing coastal floods ▪ Shrinking beaches ▪ Worsened impacts on infrastructure
Forest and Biological Resource Impacts	▪ Increased risk and severity of wildfires ▪ Lengthening of the wildfire season ▪ Transitioning forest areas ▪ Conversion of forest to grassland ▪ Declining forest productivity ▪ Increasing threats from pests and pathogens ▪ Shifting vegetation and species distribution ▪ Altered timing of migration and mating habits ▪ Loss of sensitive or slow-moving species
Energy Demand Impacts	▪ Potential reduction in hydropower ▪ Increased energy demand

Sources: California Climate Change Center, 2012, Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. California Energy Commission, 2006. Our Changing Climate: Assessing the Risks to California, 2006 Biennial Report, CEC-500-2006-077. California Energy Commission, 2009. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077. California Natural Resources Agency, 2014. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy.

[20] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

[21] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

4.8.1.3 REGULATORY FRAMEWORK

This section summarizes key federal, state, regional, and local regulations and programs related to GHG emissions resulting from the proposed project.

Federal Regulations

The U.S. Environmental Protection Agency (USEPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission-reduction requirements but allowed the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation. [22]

To regulate GHGs from passenger vehicles, the USEPA issued an endangerment finding.[23] The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, HCFCs, PFCs, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, per Bay Area Air Quality Management District (BAAQMD) guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

- US Mandatory Reporting Rule for GHGs (2009). In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MT) or more of CO_2e per year are required to submit an annual report.
- Update to Corporate Average Fuel Economy Standards (2021 to 2026). The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the USEPA finalized updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 through 2026. However, consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle GHG emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that the auto

[22] US Environmental Protection Agency (USEPA). 2009, December. USEPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html.

[23] U.S. Environmental Protection Agency (USEPA), 2009. USEPA: Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act. https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-c lean, accessed November 21, 2019.

companies party to the voluntary agreement will only sell cars in the United States that meet these standards. [24]

- USEPA Regulation of Stationary Sources under the Clean Air Act (Ongoing). Pursuant to its authority under the Clean Air Act, the USEPA has been developing regulations for new, large stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the USEPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the USEPA issued the final Affordable Clean Energy (ACE) rule, which became effective on August 19, 2019. The ACE rule was crafted under the current administration's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the previous administration and sets emissions guidelines for states in developing plans to limit CO+ emissions from coal-fired power plants.

State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Assembly Bill (AB) 32, Senate Bill (SB) 32, Executive Order B-30-15, and SB 375. These major GHG regulations are summarized as follows:

- Executive Order S-03-05. Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:
  - 2000 levels by 2010.
  - 1990 levels by 2020.
  - 80 percent below 1990 levels by 2050.
- Assembly Bill 32. Also known as the Global Warming Solutions Act, AB 32 was signed August 31, 2006, to reduce California's contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05. Under AB 32, CARB prepared the *2008 Climate Change Scoping Plan*, the *2014 Climate Change Scoping Plan,* and the *2017 Climate Change Scoping Plan,* which are discussed below.
- Executive Order B-30-15. Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, to ensure climate change is accounted for in state planning and investment decisions.
- Senate Bill 32 and Assembly Bill 197. In September 2016, SB 32 and AB 197 were signed into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary,

[24] California Air Resources Board (CARB) 2019, July 25. California and major automakers reach groundbreaking framework agreement on clean emission standards. Accessed April 14, 2020. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission

mobile, and other sources. Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) to address the 2030 target for the state. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40-percent decrease in 1990 levels by 2030.[25]

- Senate Bill 375. In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions-reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), CARB adopted per-capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

Table 4.8-3 provides a summary list of regulations adopted in California that reduce GHG emissions. A complete description of these regulations is in included in Appendix D, Air Quality and Greenhouse Gas Emissions Data, of this Draft EIR.

TABLE 4.8-3 LIST OF STATE GHG REGULATIONS

Sector	Regulations
State GHG Targets	AB 32, SB 32, Executive Order S-03-05, Executive Order B-15-30
Transportation	AB 1493, Executive Order S-01-07, SB 375
Renewable Energy	SB 1078, SB 107, SB X1-2, Executive Order S-14-08, SB 350, SB 100, Executive Order B-55-18
Energy Efficiency	Title 24, Part 6, Building Energy Efficiency Standards, Title 24, Part 11, Green Building Standards Code (CALGreen), Title 20, Appliance Efficiency Regulations
Solid Waste	AB 939, AB 341, AB 1327, AB 1826
Water	SB X7-7, AB 1881
Short-Lived Pollutants	SB 1383

Source: PlaceWorks, 2020

Regional Plans and Regulations

Plan Bay Area: Strategy for a Sustainable Region

[25] California Air Resources Board, 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on March 18, 2019.

Plan Bay Area is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). *Plan Bay Area* 2040, adopted jointly by the Association of Bay Area Governments (ABAG) and MTC in July 26, 2017, is the current version of the plan. The 2040 *Plan Bay Area* is a limited and focused update to the 2013 *Plan Bay Area*, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. This document describes how the San Francisco Bay Area will develop over the next two decades and the SCS integrates transportation, land use, and housing to meet GHG reduction targets set by CARB. *Plan Bay Area* 2040 proposes the Climate Initiatives Program, which promotes the densification of land use and a relative decrease in per-capita energy consumption, in addition to a net reduction in vehicle fuel use while also allowing growth within the region. An update to *Plan Bay Area*, moving the time horizon to 2050, was underway when the General Plan 2040 and Downtown Precise Plan were published.

As part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas within existing communities. TPAs are half-mile buffers surrounding major transit stops or terminals. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated within PDAs. [26] San Rafael has three PDAs and three TPAs (see Figure 4-1 in Chapter 4, Environmental Analysis, of this Draft EIR). ABAG indicates that these areas are expected to absorb about 40 percent of the City's household growth in the next 20 years, although General Plan 2040 is anticipating an even higher capture rate. [27]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 *Clean Air Plan, Spare the Air, Cool the Climate* (Clean Air Plan) on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[28]

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic

[26] Bay Area Air Quality Management District, 2017, Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed on March 18, 2019.

[27] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, Plan Bay Area 2040 Plan.

[28] Metropolitan Transportation Commission, Priority Development Areas, http://opendata.mtc.ca.gov/datasets/priority-development-areas-current, and Transit Priority Areas, http://opendata.mtc.ca.gov/datasets/d97b4f72543a40b2b85d59ac085e01a0_0, accessed April 17, 2020.

air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: (1) stationary (industrial) sources; (2) transportation; (3) energy; (4) agriculture; (5) natural and working lands; (6) waste management; (7) water; and (8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs," such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the MTC, the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options, including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to the reduction of GHG emissions are primarily in the Sustainability Element. As part of the proposed project, this element is being eliminated and its policies and programs are being reallocated to other elements. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.8.3, Impact Discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives pertaining to GHG emissions. The SRMC is organized by title, chapter, and section. Most provisions related to GHG emissions impacts are included in Title 5, Traffic Regulations; Title 10, Business, Professions, Occupations, Industries, and Trades; and Title 12, Building Regulations, as follows:

- Chapter 5.81, Trip Reduction and Travel Demand Requirements. Requires the City to implement a trip reduction and travel demand ordinance (Ord. 1657 Section 1 (part), 1994).

- Chapter 10.92, Prohibits Polystyrene Foam Disposal Food Packaging. Retail food vendors are prohibited from providing prepared food or takeout food to customers in, on, or with disposable food packaging, that includes polystyrene foam. This is a waste reduction measure, with secondary GHG reduction benefits.
- Chapter 10.94, Single Use Carry Out Bags. Prohibits store operators from providing customers with plastic carryout bags, except product bags for prescription medication. This is a waste reduction measure, with secondary GHG reduction benefits.
- Chapter 12.100, Adopted Codes. This chapter adopts all sections, with amendments to include Appendix 4a of CALGreen, of the California Code of Regulations Title 24, Part 11, California Green Building Standards Code.
- Chapter 12.320, Expedited Permit Process for Small Residential Rooftop Solar Systems. This chapter ensures a streamlined solar permitting process that complies with the Solar Rights Act and AB 2188, to achieve timely and cost-effective installations of small residential rooftop solar energy systems.
- Chapter 12.315, Expedited permitting Process for Electric Vehicle Charging Stations. This chapter is intended to promote the use of electric vehicles by streamlining the permitting process for electric vehicle charging stations.
- Chapter 14.18, Parking Standards. Section 14.18.45, Designated Parking for Clean Air Vehicles, requires parking spaces serving new nonresidential buildings be designated for low-emitting, fuel-efficient, and carpool/van pool vehicles, as defined by Section 5.102 of CALGreen. Section 14.18.090. Bicycle Parking, requires bicycle parking be provided for new nonresidential buildings and major renovations of nonresidential buildings that have 30 or more parking spaces, and for all public/quasi-public uses.
- Chapter 14.16, Site and Use Regulations. Section 14.16.305, Small Wind Energy Systems., establishes standards to regulate the design and placement of small wind energy systems on public and private property to minimize the potential safety and aesthetic impacts on neighboring property owners and the community. Section 14.16.307, Solar Installations, identifies requirements for solar installations on developed properties (e.g., rooftop solar) and solar energy production facilities for off-site power distribution.

San Rafael Climate Action Plan

The current San Rafael Climate Change Action Plan (2019 CCAP) was approved and adopted by the City on May 20, 2019. The 2019 CCAP focuses on mitigation measures aiming to reduce GHG emissions and includes a variety of regulatory, incentive-based, and voluntary strategies to reduce emissions from existing and future development in the city. It contains policies and actions focused on the reduction of GHG emissions and energy conservation across both government and community sectors. The 2019 CCAP builds off the 2009 CCAP and the San Rafael Greenhouse Gas Emission Inventory, providing a comparison between baseline 2005 and 2016 emissions to identify where reductions have occurred. Furthermore, the 2019 CCAP establishes targets similar to the state's GHG emission goals, to reduce emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. In San Rafael, that means emissions would need to drop to 241,455 $MTCO_2e$ by 2030 and 80,485 $MTCO_2e$ by 2050, which include energy reduction and efficiency measures. Actions provided in the 2019 CCAP to meet the City's reduction

targets involve initiatives focused on low-carbon transportation, energy efficiency, renewable energy, waste reduction, water conservation, sequestration and adaptation, and community engagement.

4.8.1.4 EXISTING CONDITIONS

Community Emissions

Land uses in the EIR Study Area generate GHG emissions from natural gas used for energy, heating, and cooking; electricity usage; vehicle trips; and area sources such as landscaping and consumer cleaning products. Emissions associated with the EIR Study Area are shown in Table 4.8-4.

TABLE 4.8-4 EXISTING 2019 GREENHOUSE GAS EMISSIONS INVENTORY

	Existing (2019) $MTCO_2e$			
Emissions Sector	City	Remainder of EIR Study Area	Total	% of Total
Building Electricity [a]	67,142	7,589	74,731	12%
Building Natural Gas [a]	63,511	10,154	73,666	12%
On-Road Transportation [b]	375,518	46,644	422,162	71%
On-Road Vehicles and Equipment [c]	2,582	161	2,742	0.5%
Solid Waste/Landfills [d]	19,632	3,169	22,801	4%
Water Use [e]	1,170	277	1,447	0.2%
Wastewater Treatment [f]	792	188	980	0.2%
Total Community Emissions	**530,347**	**68,182**	**598,529**	**100%**
Service Population (SP)	103,280	16,671	119,951	NA
$MTCO_2e$/SP	5.1	4.1	5.0	NA

Notes:
[a] Building electricity and natural gas are based on data provided by the City for the GHG emissions inventory conducted for their Climate Change Action Plan from PG&E and MCE. The electricity rates were adjusted to reflect the increase in dwelling unit and employment within the City since the CAP inventory was conducted.
[b] On-road transportation VMT is provided by Fehr & Peers and modeled with EMFAC2017. VMT for the General Plan is based on the "project's effect" of VMT in the EIR Study Area. As a result, unlike the CCAP inventory, the inventory conducted for the General Plan includes the full trip length of intrajurisdictional trips.
[c] On-road vehicles and equipment are based on the OFFROAD2017 emissions inventory and include construction equipment and commercial equipment.
[d] Solid waste/landfills is based on the Landfill Model based on disposal information from CalRecycle.
[e] Water use includes the embodied energy associated with water conveyance, treatment, and distribution.
[f] Wastewater includes the embodied energy associated with wastewater treatment as well as fugitive emissions from treatment processes.
Source: PlaceWorks, 2020.

4.8.1.5 METHODOLOGY

This GHG evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to determine if significant GHG impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project. The EIR Study Area's GHG emissions inventory includes the following sectors:

GREENHOUSE GAS EMISSIONS

- **Transportation:** Transportation emissions forecasts were modeled using emission rates from CARB's EMFAC2017, version 1.0.2, Project Level (PL) web database. Modeling includes the SAFE Part 1 and Part 2 EMFAC2017 model adjustment factors released by CARB. Model runs were based on daily VMT data provided by Fehr & Peers (see Chapter 4.16, Transportation, of this Draft EIR) and calendar year 2019 (existing) and 2040 emission rates. The VMT provided includes the full trip length for land uses in the city. This differs from the City's CCAP emissions inventory, which includes a 50-percent reduction in trip lengths for trips that start or end in the City but travel outside the City (intra-jurisdictional trips). Consistent with CARB's methodology within the Climate Change Scoping Plan Measure Documentation Supplement, daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays to determine annual emissions.
- **Energy**: Energy use for residential and nonresidential land uses in the EIR Study Area were modeled using electricity and natural gas data provided by the City from the 2016 GHG emissions inventory conducted for the CCAP. The data from the 2016 GHG emissions inventory is based on electricity and natural gas use provided by PG&E and electricity provided by MCE and carbon intensity for direct access, PG&E, and MCE. Residential energy and non-residential energy forecasts are adjusted for increases in housing units and employment, respectively. The carbon intensity factor of the purchased electricity for the buildout year is based on MCE's reported CO intensity factor because it is based on a 60-percent renewable energy portfolio energy content label. Intensity factors for CO_2, CH_4, and N_2O provided in CARB's Local Governments Protocol (LGOP), version 1.1, were used for natural gas.
- **Off-Road Equipment**: Emission rates from CARB's OFFROAD2017, version 1.0.1, web database were used to estimate criteria air pollutant emissions from light commercial and construction equipment in the EIR Study Area. OFFROAD2017 is a database of equipment use and associated emissions for each county compiled by CARB. Emissions were compiled using OFFROAD2017 for the County of Marin for year 2019. To determine the percentage of emissions attributable to the EIR Study Area, light commercial equipment is estimated based on employment for the City of San Rafael as a percentage of Marin County. Construction equipment use is estimated based on building permit data for the City of San Rafael and County of Marin from data compiled by the US Census. The light commercial equipment emissions forecast is adjusted for changes in employment in the EIR Study Area. It is assumed that construction emissions for the forecast year would be similar to historical levels. Annual emissions are derived by multiplying daily emissions by 365 days.
- **Water/Wastewater**. GHG emissions from this sector include indirect GHG emissions from the embodied energy associated with water use and wastewater generation and fugitive GHG emissions from processing wastewater. The total annual existing and horizon year proposed project water demand and wastewater generation (gallons per year) in the EIR Study Area are based on the existing per-capita water use of 110 gallons per capita per day (gpcd) identified in the Marin Municipal Water District's 2015 Urban Water Management Plan (UWMP).[29] The per-capita water use includes water use from both residential and nonresidential land uses in the City. Electricity use from water use is estimated using energy rates identified by the California Energy Commission (CEC). [30] Then energy is

[29] Marin Municipal Water District. 2016, June 11. 2015 Urban Water Management Plan. http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=

[30] California Energy Commission (CEC). 2006, December. Refining Estimates of Water-Related Energy Use in California. CEC-500-2006-118. Prepared by Navigant Consulting, Inc. Based on the electricity use for Northern California.

multiplied by the carbon intensity of energy for PG&E (see the previous Energy description). Wastewater treatment also results in fugitive GHG emissions from wastewater processing. Fugitive emissions from wastewater treatment in the EIR Study Area were calculated using the emission factor's in CARB's LGOP, Version 1.1, and conservatively assumes that 70 percent of water use is treated as wastewater, consistent with that identified in the UWMP.

- Solid Waste Disposal. GHG emissions from solid waste disposed of by residents and employees in the EIR Study Area generates GHG emissions. The degradable organic carbon (DOC) in waste decays slowly throughout a few decades, during which CH_4 and biogenic CO_2 are formed. If conditions are constant, the rate of CH_4 production depends solely on the amount of carbon remaining in the waste. As a result, emissions of CH_4 from waste deposited in a disposal site are highest in the first few years after deposition, then gradually decline as the degradable carbon in the waste is consumed by the bacteria responsible for the decay. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. The peak annual emissions from waste-in-place are reported. Jurisdiction reports for the Marin County Hazardous and Solid Waste Management Joint Powers Authority were obtained from CalRecycle. Waste from San Rafael was estimated based on the Service Population of Marin County v. the City of San Rafael. Waste disposal was averaged over a three-year period (2016 to 2018) for several years to account for fluctuations in average annual solid waste disposal for existing conditions. GHG emissions from solid waste disposal in the baseline year were modeled using CARB's Landfill Emissions Tool Version 1.3, which includes waste characterization data from CalRecycle. Because the landfill gas captured is not under the jurisdiction of the City of San Rafael, the landfill gas emissions from the capture system are not included in the inventory. Only fugitive sources of GHG emissions from landfills are included. Modeling assumes a 75-percent reduction in fugitive GHG emissions from the Landfill Gas Capture System. The landfill gas capture efficiency is based on CARB's LGOP, Version 1.1. Emissions were adjusted to the AR5 GWP assigned for CH_4. Total GHG emissions from waste disposal in 2040 were forecasted based on the percent increase in service population for the EIR Study Area. The emissions forecast does not account for reductions from increasing waste diversion.

Industrial sources of emissions that require a permit from BAAQMD are not included in the community inventory. However, due to the 15/15 Rule,[31] natural gas and electricity use data for industrial land uses may also be aggregated with the nonresidential land uses in the data provided by PG&E and MCE. Life-cycle emissions are not included in this analysis because not enough information is available for the proposed project; and therefore, they would be speculative. Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's GHG emissions inventory and treats this short-lived climate pollutant separately.

[31] The 15/15 Rule was adopted by the California Public Utility Commission (CPUC) in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. The 15/15 Rule requires that any aggregated information provided by the utilities must be made up of at least 15 customers (100 for residential sectors) and a single customer's load must be less than 15 percent of an assigned category.

4.8.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant GHG emission impacts if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.
3. Result in significant cumulative impact and contribute to global climate change.

BAAQMD Thresholds

BAAQMD has adopted thresholds from the CEQA Guidelines to evaluate GHG emissions impacts from development projects.[32] Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. BAAQMD is currently updating their CEQA Guidelines.

Under the 2017 CEQA Guidelines, BAAQMD identified a tiered approach for assessing GHG emissions impacts of a project:

1. Consistency with a Qualified Greenhouse Gas Reduction Strategy. If a project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy.
2. BAAQMD Screening Level Sizes (AB 32). BAAQMD has adopted screening criteria for development projects, with a buildout year of 2020 and earlier, that would be applicable for a proposed project based on the square footage, units, acreage, students, and/or employees generated by a project. Typical projects that meet the screening criteria do not generate emissions greater than 1,100 $MTCO_2e$ per year and would not generate significant GHG emissions.
3. Brightline Screening Threshold (AB 32). BAAQMD adopted a brightline screening threshold for development projects of 1,100 $MTCO_2e$ per year that would be applicable for projects with an opening year of 2020 and earlier. If a project exceeds the BAAQMD Guidelines' GHG screening-level sizes or screening criteria of 1,100 $MTCO_2e$, the project would be required to conduct a full GHG analysis using based on GHG reduction goals of AB 32 and SB 32.

[32] Bay Area Air Quality Management Agency, 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 21, 2019.

4. Efficiency Threshold (AB 32). AB 32 requires statewide GHG emissions to be reduced to 1990 levels by 2020. On a per-capita basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020.[33] Hence, BAAQMD's per capita significance threshold is calculated based on the State's land use sector emissions inventory prepared by CARB and the demographic forecasts for the 2008 Scoping Plan. The land use sector GHG emissions for 1990 were estimated by BAAQMD, as identified in Appendix D of the BAAQMD CEQA Guidelines, to be 295.53 $MMTCO_2e$ and the 2020 California service population to be 64.3 million. Therefore, the threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 $MTCO_2e$ per service population per year ($MTCO_2e$/SP/yr) for year 2020.[34]

Proposed Project Thresholds

Based on BAAQMD's adopted 1,100 $MTCO_2e$ per year brightline screening threshold, and the GHG reduction target for year 2030 established under SB 32 (i.e., 40 percent of 1990 levels by 2030), the interpolated brightline screening threshold of 660 $MTCO_2e$ per year is utilized for the proposed project. If project emissions are below this brightline screening threshold, GHG emissions impacts would be considered less than significant.

This analysis also evaluates the potential for the proposed project to conflict with the GHG reduction goals established under SB 32 and Executive Order S-03-05, which require a reduction in statewide GHG emissions from existing conditions to achieve a 40-percent reduction in GHG emissions by 2030 and an 80-percent reduction in GHG emissions by 2050, respectively.

Mass Emissions and Health Effects

On December 24, 2018, in the case, *Sierra Club et al. v. County of Fresno et al.* (commonly referred to as the Friant Ranch Case), the California Supreme Court determined that the EIR for the proposed Friant Ranch project failed to adequately analyze the project's air quality impacts on human health. The EIR prepared for the Friant Ranch project, which involved a master-planned retirement community in Fresno County, showed that project-related mass emissions would exceed the San Joaquin Valley Air Pollution Control District's regional significance thresholds. In its findings, the California Supreme Court affirmed the holding of the Court of Appeal that EIRs for projects must not only identify impacts to human health, but also provide an "analysis of the correlation between the project's emissions and human health impacts" related to each criteria air pollutant that exceeds the regional significance thresholds or explain why it could not make such a connection. In general, the ruling focuses on the correlation of emissions of toxic air contaminants and criteria air pollutants and their impact to human health.

In 2009, the USEPA issued an endangerment finding for six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in order to regulate GHG emissions from passenger vehicles. The endangerment finding is based on

[33] California Air Resources Board, 2008. Climate Change Proposed Scoping Plan, a Framework for Change. https://ww3.arb.ca.gov/cc/scopingplan/document/psp.pdf, accessed November 21, 2019.

[34] Bay Area Air Quality Management Agency, 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 21, 2019.

evidence that shows an increase in mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heat waves and ozone levels. The effects of climate change are identified in Table 4.8-2. While these identified effects, such as sea-level rise and increases in extreme weather, can indirectly impact human health, neither the CalEPA nor CARB has established ambient air quality standards for GHG emissions. California's GHG reduction strategy outlines a path to avoid the most catastrophic effects of climate change. Yet the state's GHG reduction goals and strategies are based on the state's path toward reducing statewide cumulative GHGs, as outlined in AB 32, SB 32, and Executive Order S-03-05.

The two significance thresholds that the City uses to analyze GHG impacts are based on achieving the statewide GHG reduction goals (see Impact GHG-1 in Section 4.8.3) and relying on consistency with policies or plans adopted to reduce GHG emissions (see impact discussion GHG-2). Further, because no single project is large enough to result in a measurable increase in global concentration of GHG emissions, climate change impacts of a project are considered on a cumulative basis. Without federal ambient air quality standards for GHG emissions and given the cumulative nature of GHG emissions and the City's significance thresholds that are tied to reducing the state's cumulative GHG emissions, it is not feasible at this time to connect the project's specific GHG emission to the potential health impacts of climate change.

4.8.3 IMPACT DISCUSSION

GHG-1 Implementation of the proposed project could generate GHG emissions, either directly or indirectly, that could have a significant impact on the environment.

General Plan 2040

Future potential development under the proposed General Plan 2040 would contribute to global climate change through direct and indirect emissions of GHGs in the EIR Study Area. However, a general plan is a long-range policy document that does not directly result in development without additional approvals. Before any development can occur in San Rafael, it must be analyzed for consistency with the General Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA if required; and obtain all necessary clearances and permits from regulatory agencies.

Buildout of the proposed General Plan 2040 is not linked to a specific development time frame but is assumed over a 20-year project horizon. Implementation of the proposed General Plan 2040 by the horizon year of 2040 would result in a net increase of 8,910 people and 4,115 employees in the EIR Study Area. Development that would be accommodated by the proposed General Plan 2040 would generate a net increase of 123,564 daily VMT at project buildout (see Chapter 4.16, Transportation, of the Draft EIR). Table 4.8-6 provides a comparison of the change in GHG emissions in the EIR Study Area between the CEQA baseline (2019) and the General Plan horizon year (2040) conditions.

Horizon Year 2040 Emissions Inventory Compared to Existing Conditions

As shown in Table 4.8-5, buildout of the land uses accommodated under the proposed General Plan 2040 would result in a net decrease of 120,126 $MTCO_2e$ of GHG emissions (20 percent decrease in GHG emissions) from existing conditions and would not exceed the 660 $MTCO_2e$ BAAQMD bright-line screening threshold. In addition, while buildout under the proposed General Plan 2040 is projected to increase service population by 13,025 persons[35] (an 11-percent increase), emissions per person would decrease compared to existing baseline. Emissions per service population would decrease to 3.6 $MTCO_2e$/SP in horizon year 2040 from 5.0 $MTCO_2e$/SP for the existing baseline year.

Consistency with SB 32 and Executive Order S-03-05 GHG Reduction Targets

While the proposed General Plan 2040 would not generate an increase in GHG emissions from the CEQA baseline in the 2040 horizon year forecast, this EIR also analyzes the potential for the proposed General Plan 2040 to conflict with the GHG reduction goals established under SB 32 and Executive Order S-03-05, which require a reduction in statewide GHG emissions from existing conditions to achieve a 40-percent reduction in GHG emissions below 1990 levels by 2030 and an 80-percent reduction in GHG emissions by 2050, respectively. This EIR assumes that the CEQA baseline (2019 emissions) reflects the AB 32 goal in 2020. As a result, at the General Plan horizon year of 2040, the City would need to reduce GHG emissions by 60 percent to ensure the City is on a trajectory to achieve the long-term goal under Executive Order S-03-05, which is equivalent to 359,117 $MTCO_2e$ in the EIR Study Area by year 2040.

As shown in Table 4.8-5 and as discussed previously, it is anticipated that implementation of the proposed General Plan 2040 would result in an overall net decrease in emissions in horizon year 2040 compared to existing baseline. However, GHG emissions reduction are only 20 percent less than the CEQA baseline and not the 60 percent necessary to ensure the City is on a trajectory to achieve the long-term year 2050 reduction goal of Executive Order S-03-05. The City has prepared a CCAP to align the City's local GHG reductions with the state goals of SB 32 and Executive Order S-03-05. As identified in the CCAP, local measures would result in 98,085 $MTCO_2e$ of additional reductions by 2030, a 42 percent reduction from 1990 levels, and would put the City on a trajectory to achieve the 2030 GHG targets.[36] Reduction strategies to meet the long-term 2050 GHG reduction goal, in addition to establishment of a 2050 reduction target, would be included in the planned future updates to the CCAP. Additionally, state strategies to achieve post-2030 targets would be necessary. Therefore, until such time, GHG emissions impacts for the proposed General Plan 2040 are considered potentially significant in regard to meeting the long-term year 2050 reduction goal.

[35] Service population is 8,910 people plus 4,115 employees.
[36] San Rafael. 2019, April 23. Climate Change Action Plan.

GREENHOUSE GAS EMISSIONS

TABLE 4.8-5 HORIZON YEAR 2040 GHG EMISSIONS FORECAST

	GHG Emissions ($MTCO_2e$/Year)											
	Existing (2019)				2040				Net Change			
Emissions Sector	City Limits	Planning Area	Total	%	City Limits	Planning Area	Total	%	City Limits	Planning Area	Total	%
Building Electricity	67,142	7,589	74,731	12%	49,167	5,263	54,430	11%	-17,975	-2,326	-20,301	-27%
Building Natural Gas	63,511	10,154	73,666	12%	72,479	10,867	83,346	17%	8,967	713	9,680	13%
On-Road Transportation	375,518	46,644	422,162	71%	277,721	31,938	309,659	65%	-97,797	-14,706	-112,503	-27%
Off-Road Vehicles and Equipment	2,582	161	2,742	0.5%	2,807	172	2,979	1%	225	12	237	9%
Solid Waste/Landfills	19,632	3,169	22,801	4%	21,924	3,352	25,277	5%	2,292	183	2,476	11%
Water Use	1,170	277	1,447	0.2%	1,323	295	1,617	0.3%	153	17	170	12%
Wastewater Treatment	792	188	980	0.2%	896	200	1,095	0.2%	104	12	115	12%
Total Community Emissions	**530,347**	**68,182**	**598,529**	**100%**	**426,317**	**52,086**	**478,403**	**100%**	**-104,030**	**-16,095**	**-120,126**	**-20%**
Service Population (SP)	103,280	16,671	119,951	NA	115,340	17,636	132,976	NA	12,060	965	13,025	11%
$MTCO_2e$/SP	5.1	4.1	5.0	NA	3.7	3.0	3.6	NA	-1.4	-1.1	-1.4	-28%

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).

General Plan 2040 Policies

While growth within the EIR Study Area would cumulatively contribute to GHG emissions impacts, the General Plan 2020 included goals, policies, and programs to reduce GHG emissions. The proposed General Plan 2040 builds off the language regarding the reduction of GHG emission in the General Plan 2020 and includes over 200 goals, policies, and programs to contribute to reducing GHG emissions. The proposed Land Use (LU) Element; Conservation and Climate Change (C) Element; Mobility (M) Element; Community Services and Infrastructure (CSI) Element; Housing (H) Element; Economic Vitality (EV) Element; Equity, Diversity, and Inclusion (EDI) Element; and Parks, Recreation, and Open Space (PROS) Element contain goals, policies, and programs that require local planning and development decisions to reduce GHG emissions. The following goals, policies, and programs would serve to minimize GHG emissions in the EIR Study Area.

Goal LU-1: Well-Managed Growth and Change. Grow and change in a way that serves community needs, improves fiscal stability, and enhances the quality of life.

- Policy LU-1.2: Development Timing. Allow new development only when adequate infrastructure is available, consistent with the following findings:
  - The project is consistent with adopted Vehicle Miles Traveled (VMT) standards, as well as any relevant requirements for Level of Service (LOS) specified in the Mobility Element.
  - Planned circulation improvements necessary to meet City standards for the project have funding commitments and completed environmental review.
  - Sewer, water, and other infrastructure improvements needed to serve the proposed development have been evaluated and confirmed to be in place or to be available to serve the development by the time it is constructed.
  - The project has incorporated design and construction measures to adequately mitigate exposure to hazards, including flooding, sea level rise, and wildfire.
- Policy LU-1.3: Land Use and Climate Change. Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals.
  - Program LU-1.3A: Benefits of Transit-Oriented Development. Seek ways to objectively quantify, monitor, and promote the benefits of focusing new development around transit nodes and corridors and shifting trips from cars to active (non-car) transportation modes. Programmatic changes and recommendations should be supportable by objective data and quality of life measures. This should include data on modes of travel, trip origins and destinations, trip lengths, vehicle ownership, greenhouse gas emissions, and other metrics in areas that are well served by transit.
- Policy LU-2.3: Neighborhood-Serving Commercial Uses. Encourage the retention and improvement of neighborhood-serving retail stores and services. In the event such spaces become vacant, consider other activities that reinforce their role as neighborhood centers. Neighborhood-serving commercial

areas should reinforce the city's goal of reducing greenhouse gas emissions and traffic congestion by providing walkable, bikeable services and shopping close to residents.

- Program LU-2.3B: Revitalization Incentives. Develop zoning and economic development incentives that keep local neighborhood centers viable, such as allowing additional floor area and housing units when neighborhood-serving uses are included or retained.
- Program LU-2.4A: Industrial Zoning. Periodically evaluate zoning standards for Light Industrial-Office and General Industrial areas in response to business and economic trends, market demand, changes in technology and the transportation sector, greenhouse gas reduction goals, and climate-related hazards such as sea level rise.

Goal C-5: Reduced Greenhouse Gas Emissions. Achieve a 40 percent reduction in 1990 greenhouse gas emission levels by 2030 and a 60 percent reduction by 2040. The City of San Rafael will implement the measures outlined in this General Plan and in its Climate Change Action Plan to reduce greenhouse gas (GHG) emissions, which are the leading cause of global climate change.

- Policy C-5.1: Climate Change Action Plan. Maintain and periodically update a Climate Change Action Plan that includes programs to reduce greenhouse gas emissions and metrics for monitoring success.
  - Program C-5.1A: Progress Reports. Prepare annual Climate Change Action Plan progress reports, including a list of priority actions. Local climate goals should align with regional goals, including those set through Drawdown Marin.
  - Program C-5.1B: Quarterly Forum. Continue to hold the Climate Change Action Plan Quarterly Forum, which provides oversight on the implementation progress of sustainability and GHG reduction programs.
  - Program C-5.1C: Funding. Identify funding sources for recommended actions, and pursue local, regional, state, and federal grants. Investigate creation of a local carbon fund or other permanent source of revenue.
- Policy C-5.2: Consider Climate Change Impacts. Ensure that decisions regarding future development, capital projects, and resource management are consistent with San Rafael's Climate Change Action Plan and other climate goals, including greenhouse gas reduction and adaptation.
- Policy C-5.3: Advocacy. Support and advocate for state and federal legislation and initiatives to reduce GHG emissions.
  - Program C-5.3A: Local Government Agency Involvement. Continue to provide a leadership role with other local governmental agencies to share best practices and successes.
  - Program C-5.3B: State and Federal Action. Recommend and support State and federal actions to update renewable energy portfolio standards, amend state building codes, and modify motor vehicle standards to reduce GHG emissions and achieve climate goals.
- Policy C-5.4: Municipal Programs. Implement and publicize municipal programs to demonstrate the City's commitment to sustainability efforts and reducing greenhouse gases.
  - Program C-5.4A: Low Carbon Municipal Vehicles. As finances allow, continue to shift the City's vehicle fleet to zero emission vehicles and use low carbon fuels as an interim measure until gasoline-powered vehicles are replaced.

  - Program C-5.4B: Advancing GHG and Sustainability Efforts. Monitor best practices in sustainability and the transition to GHG-free energy sources and evaluate the feasibility of applying such measures at the local level.
- Policy C-5.5: Carbon Sequestration. Enhance the ability of the City's natural and built environment to sequester (absorb and store) carbon emissions.
- Policy C-5.7: Climate Change Education. Continue community education and engagement in climate and sustainability efforts.
  - Program C-5.7A: Public Outreach Campaign. As recommended by the Climate Change Action Plan, implement a communitywide public outreach and behavior change campaign to engage residents, businesses, and consumers around the impacts of climate change and the ways individuals and organizations can reduce their GHG emissions and create a more sustainable, resilient, and healthier community.
  - Program C-5.7B: Resilient Neighborhoods. Continue participating in the Resilient Neighborhoods program and expand the program to include local businesses.
  - Program C-5.7D: Promote Sustainability Efforts. Promote sustainability and climate change awareness through education, publications, the City's website, community organizations, and special events such as Earth Day and an annual Green Festival.

Goal M-1: Regional Leadership in Mobility. Take a leadership role in developing regional transportation solutions.

- Policy M-2.3: Cost-Benefit Considerations. Consider the relative costs and benefits of transportation improvement projects, including the amount and source of funding, the potential number of people who will benefit, the expected impact on vehicle miles traveled and climate goals, the cost and time impacts on all travelers, the social and equity impacts, the effects on the environment and public safety, and similar factors.
  - Program M-2.3A: Cost-Benefit Analysis. Conduct cost-benefit analyses as part of the design process for proposed transportation projects, including the criteria listed above and other factors that may be relevant (see also Policy CSI-5.1 on cost-benefit analysis).
  - Program M-2.4B: Reducing Vehicle Idling. Support transportation network improvements to reduce vehicle idling, including synchronized signal timing.

Goal M-3: Cleaner Transportation. Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.

- Policy M-3.1: VMT Reduction. Achieve State-mandated reductions in Vehicle Miles Traveled by requiring development and transportation projects to meet specific VMT metrics. In the event a proposed project does not meet these metrics, require measures to reduce the additional VMT associated with the project, consistent with thresholds approved by the City Council.
  - Program M-3.1A: VMT Analysis Guidelines. Develop local guidelines for calculating the projected VMT associated with future development projects and transportation improvements. The guidelines also should cover administration, screening criteria, and appropriate Transportation

Demand Management measures and monitoring procedures. All VMT metrics should be reassessed at least once every four years, and revised as needed to reflect changing conditions.

- Policy M-3.2: Using VMT in Environmental Review. Require an analysis of projected Vehicle Miles Traveled (VMT) as part of the environmental review process for projects with the potential to significantly increase VMT. As appropriate, this shall include transportation projects and land use/ policy plans as well as proposed development projects.
  - Program M-3.2C: Mitigation Measures for VMT Impacts. Develop and implement mitigation measures that can be applied to projects with potentially significant VMT impacts in order to reduce those impacts to less than significant levels (see Policy M-3.3 and Program M-3.3A).
- Policy M-3.3: Transportation Demand Management. Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, work schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.
  - Program M-3.3A: Develop TDM Program Guidelines. Develop TDM Program Guidelines – or work in partnership with other local governments to develop Guidelines-- than can be used to mitigate potential VMT increases in new development and encourage reductions in existing development.
- Policy M-3.6: Low-Carbon Transportation. Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.
  - Program M-3.6A: ZEV Plan. Consistent with the San Rafael CCAP, develop a Zero Emission Vehicle (ZEV) Plan with a goal of 25 percent of the passenger vehicles in San Rafael being ZEVs by 2030. The Plan should provide for additional charging stations, preferential parking for ZEVs, other programs that incentivize ZEV use by San Rafael residents.
  - Program M-3.6B: Zero Emission Municipal Vehicles. As finances allow, shift the municipal vehicle fleet to ZEVs. Use low-carbon fuels as an interim measure until gasoline-powered City vehicles are replaced.
- Policy M-3.8: Land Use and VMT. Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.4: Sustainable Design. Plan, design, and operate infrastructure to minimize non-renewable energy and resource consumption, improve environmental quality, promote social equity, and reduce greenhouse gas emissions. An evaluation of costs and benefits must be a factor in all improvements. This includes the potential costs of inaction and potential for "avoided costs," particularly with respect to climate change.
- Policy CSI-4.17: Reducing Landfilled Waste Disposal. Reduce landfilled waste disposal and related greenhouse gas emissions by reducing material consumption; requiring curbside collection and

composting of organic materials; increasing recycling, re- use, and resource recovery; and encouraging the use of recyclable goods and materials.

- Program CSI-4.17A: Waste Reduction. Implement waste reduction programs consistent with the San Rafael Climate Change Action Plan and Zero Waste Goal. These include partnerships with Zero Waste Marin, Marin Sanitary Service, and other organizations; requirements for construction and demolition debris recycling; increased monitoring of waste diversion targets; waste audits; and additional infrastructure for removal of recoverable materials from the waste stream.
- Program CSI-4.17B: Recycling. Continue recycling programs and expand these programs to increase waste diversion rates for homes, apartments and workplaces.
- Program CSI-4.17C: Construction and Demolition Waste. Continue to implement programs requiring recycling of construction and demolition debris. Encourage the reuse of recycled building materials in future projects.
- Program CSI-4.17D: Waste Reduction Programs. Continue efforts to reduce electronic waste, refrigerants, and single use plastics; and ensure proper disposal of household hazardous waste. This should include enforcement of City bans on plastic bags and polystyrene foam and potential new programs to reduce microplastics from waterways.
- Program CSI-4.17E: Community Composting. Consider a mandatory community-scale program for curbside collection and composting of food and green waste, as well as vegetation cleared through fire prevention efforts.
- Program CSI-4.17F: Food to Energy. Support the Central Marin Sanitation/ Marin Sanitary Food to Energy Program.
- Program CSI-4.17G: Recyclable Waste Receptacles. Support efforts by Marin Sanitary to install waste receptacles for recyclables in areas of heavy pedestrian traffic.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.6: Neighborhood Greening. Encourage the greening of San Rafael's multi-family districts, including tree planting, landscaping, and other improvements that enhance aesthetics, reduce pollutants, and improve climate resilience.
  - Program EDI-2.6A: Greening Priorities. Prioritize City-sponsored urban greening and tree planting projects in residential areas that currently have lower rates of tree cover, higher residential densities, and limited access to open space (for example, the Canal area and Montecito).
- Policy EDI-2.9: Urban Agriculture. Promote and support small-scale, neighborhood-based, food production, urban agriculture, and reliable food supply lines from regional growers.
- Policy EDI-2.8: Food Access. Expand access to healthy food and nutritional choices in San Rafael through conveniently located grocery stores, small markets, farmers markets, and community gardens, particularly in lower income areas where existing fresh food options are limited.

Proposed goals that are supported by policies and programs that have co-benefits (indirectly) to reduce GHG emissions include proposed Goal C-1, which aims to reduce air pollution. Specifically, Policy C-2.3 recognizes the air quality benefits of reducing dependency on gasoline-powered vehicles and implements

land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, and support the shift to electric and cleaner-fuel vehicles.

Goal CDP-3 supports the creation of attractive streets and public spaces, which incentivizes walking and cycling and recognizes the role of street trees and landscaping in absorbing and sequestering carbon (see Policy CDP-3.5). Goal EV-1 supports a healthy and resilient economy. Specifically, Policy EV-1.8 supports more sustainable business practices and growth in "green" jobs and green business practices. Goal PROS-1 supports high-quality parks for residents and visitors to San Rafael. Specifically, Policy PROS-3.10 recognizes the importance of open space in sequestering carbon.

Because transportation is the leading source of GHG emissions in San Rafael, many of the climate-related measures in the proposed General Plan 2040 appear in the Mobility Element. Goal M-5 supports local streets that are safe, attractive, and provide easy access to homes and businesses. Policies aim to reduce VMT by encouraging carpooling, working from home, flextime, micromobility (e-bikes, e-scooters), and similar strategies. Policies also support a continued shift to cleaner fuel vehicles and more electric charging stations. Goal M-4 supports a more robust public transit system, to make it easier to travel without a car. Goal M-6 supports pedestrian and bicycle improvements, making it safer and easier to walk or cycle around the city. Goal M-7 supports parking to accommodate a more sustainable transportation system, including parking for transit users and charging stations for electric vehicles. Goal CSI-3 supports public safety services to maintain safe streets for all users. Collectively, these goals, policies, and programs will have the greatest measurable impacts on moving the City toward its GHG reduction targets.

Implementation of these goals, policies and programs of the proposed General Plan 2040 would result in additional GHG emissions reductions associated with the EIR Study Area to the extent feasible. As described and shown in Table 4.8-5, GHG emissions reduction are only 20 percent less than the CEQA baseline and not the 60 percent necessary to ensure the City is on a trajectory to achieve the long-term year 2050 reduction goal of Executive Order S-03-05.

Impact GHG-1: Implementation of the proposed project may not meet the long-term GHG reduction goal under Executive Order S-03-05.

Significance without Mitigation: Significant and unavoidable. Implementation of the General Plan 2040 goals, policies, and programs would ensure that the City's GHG emissions are reduced to the degree feasible. Policy C-5.1, Climate Change Action Plan, requires the City maintain and periodically update the CCAP. Policy C-5.1 is supported by Programs C-5.1A, C-5.1B, and C-5.1C, which require annual progress reports, quarterly forums, and identification of funding sources. Implementation of this Policy and its associated Programs would ensure the City is monitoring the CCAP's progress toward achieving the City's GHG reduction target and requires amendments if the CCAP is not achieving the specified level. The update would ensure the CCAP is on the trajectory consistent with the GHG emissions-reduction goal established under Executive Order S-03-05 for year 2050 and the latest applicable statewide legislative GHG emission reduction that may be in effect at the time of the CCAP update (e.g., Senate Bill 32 for year 2030). Routine updates of the CCAP typically include the following:

- GHG inventories of existing and forecast year GHG levels.
- Tools and strategies for reducing GHG emissions to ensure a trajectory with the long-term GHG reduction goal of Executive Order S-03-05.

- Plan implementation guidance that includes, at minimum, the following components consistent with the proposed CCAP:
  - Administration and Staffing
  - Finance and Budgeting
  - Timelines for Measure Implementation
  - Community Outreach and Education
  - Monitoring, Reporting, and Adaptive Management
  - Tracking Tools

Policy C-5.1 would specifically ensure the City is tracking and monitoring the City's GHG emissions in order to chart a trajectory to achieve the long-term year 2050 GHG reduction goal set by Executive Order S-03-05. However, at this time, there is no plan that extends beyond 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology.[37] Advancement in technology in the future could provide additional reductions to allow the state and City to meet the 2050 goal; however, no additional statewide measures are currently available. Therefore, Impact GHG-1 would be *significant and unavoidable*.

Downtown Precise Plan

The Downtown Precise Plan Area is an existing urban area in the City of San Rafael where roughly half of the anticipated development by 2040 is expected to occur. Potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. As described in Section 4.8.1.3, Regulatory Framework, approximately half of the Downtown Precise Plan Area is located in a *Plan Bay Area* PDA and TPA, which are designated in areas that are in close proximity to major transit stops or terminals. One primary goal of the *Plan Bay Area* PDA and TPA designations is to encourage transit-oriented development which would in turn reduce VMT and subsequent GHG emissions. Therefore, potential future development which occurs as a result of the Downtown Precise Plan would be inherently designed to reduce GHG emissions. However, as discussed above, GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, the impacts discussed above for the proposed General Plan 2040 include GHG emissions from potential future development in the Downtown Precise Plan Area and impacts would be the same.

Significance with Mitigation: Significant and Unavoidable.

[37] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

GHG-2 Implementation of the proposed project could conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

General Plan 2040

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan, ABAG's/MTC's Plan Bay Area, and the City's CCAP. A consistency analysis with these plans is presented herein.

CARB Scoping Plan

The CARB Scoping Plan is applicable to state agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the state agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS) and changes in the CAFE standards.

Project GHG emissions shown in Table 4.8-5 include reductions associated with statewide strategies that have been adopted since AB 32 and SB 32. Development projects accommodated under the proposed General Plan 2040 are required to adhere to the programs and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32 and SB 32. Future development projects would be required to comply with these state GHG emissions reduction measures as they are statewide strategies. For example, new buildings associated with land uses accommodated by implementing the proposed General Plan 2040 would be required to meet the CALGreen and Building Energy Efficiency Standards in effect at the time when applying for building permits. Furthermore, as discussed under impact discussion GHG-1, the proposed General Plan 2040 includes goals, policies, and programs that would help reduce GHG emissions and therefore, help achieve GHG reduction goals. Therefore, implementation of the proposed General Plan 2040 would not obstruct implementation of the CARB Scoping Plan.

Plan Bay Area

Plan Bay Area is the Bay Area's regional transportation plan to achieve the passenger vehicle emissions reductions identified under SB 375. *Plan Bay Area* 2040 is the current SCS for the Bay Area, which was

adopted July 26, 2017.[38] ABAG and MTC are currently in the process of updating *Plan Bay Area*. Adoption of *Plan Bay Area* 2050 by ABAG and MTC is scheduled for fall 2021.[39]

In addition to significant transit and roadway performance investments to encourage focused growth, *Plan Bay Area* 2040 directs funding to neighborhood active transportation and complete streets projects, climate initiatives, lifeline transportation and access initiatives, safety programs, and PDA planning. In San Rafael, a PDA and TPA has been designated around the Downtown San Rafael SMART Station. ABAG indicates that this area is expected to absorb about 40 percent of the City's household growth in the next 20 years, although General Plan 2040 is anticipating an even higher capture rate. [40] More recently, PDAs have been designated in North San Rafael and Southeast San Rafael.

As identified previously, the proposed General Plan 2040 places higher-density uses near transit stations and in areas that are less auto dependent. This is supported by Policy LU-1.3, which strives to reduce GHG emissions through the way the City designs and locates new housing, offices, public buildings, and other uses. The proposed General Plan 2040 also includes implementation of the Downtown Precise Plan, which is consistent with the Downtown San Rafael SMART Station PDA identified in *Plan Bay Area*. Thus, the project would be consistent with the overall goals of *Plan Bay Area* 2040 in concentrating new development in locations where there is existing infrastructure and transit. Therefore, the proposed project would not conflict with the land use concept plan in *Plan Bay Area* 2040 and impacts would be *less than significant*.

San Rafael Climate Action Plan

As identified in the CCAP, San Rafael has met the state GHG reduction target for 2020. The CCAP provides additional measures and strategies to achieve a GHG reduction target of 40 percent below 1990 levels by 2030, consistent with SB 32. The CCAP lays out measures that would exceed the 2030 target and put the City on a trajectory to meet the 2050 goal under Executive Order S-03-05.[41] The proposed project would further the goals of the CCAP by introducing policies and programs that align with the CCAP (see Table 4.8-6). Additionally, the General Plan Land Use Map places higher-density uses near transit stations and in areas that are less auto-dependent. Consequently, the proposed project is consistent with the City's CCAP and impacts are *less than significant*.

[38] ABAG/MTC. 2017, July 26. Plan Bay Area 2040. http://2040.planbayarea.org/sites/default/files/2020-02/Final_Plan_Bay_Area_2040.pdf

[39] ABAG/MTC. 2020, Accessed June 8. Key Phases of Plan Bay Area 2050. https://www.planbayarea.org/about/key-phases-plan-bay-area-2050.

[40] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, Plan Bay Area 2040 Plan.

[41] As noted previously, the methodology for calculating VMT for General Plan 2040 differs from the methodology used for the CCAP. As a result, the emissions inventory and forecast conducted for General Plan 2040 cannot be directly compared with the inventory and forecast conducted for the CCAP.

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
Low Carbon Transportation	
LCT-C1. Zero Emissions Vehicles. Develop a Zero Emission Vehicle Plan that will result in 25% of passenger vehicles in San Rafael to be zero emission vehicles (ZEVs), including plug-in electric vehicles (EVs) and hydrogen fuel cell electric vehicles, by 2030. Incorporate the following actions in the plan as feasible: a. Provide free parking for ZEVs at City parking lots and metered parking spaces. b. Provide wayfinding signage to public EV chargers. c. Work with PG&E and other entities to identify multi-family and workplace charging sites appropriate for available incentive programs, such as EV Charge Network. d. Participate in a countywide effort by MCE, PG&E and others to provide rebates for new or used electric vehicles and/or charging stations. e. Pursue opportunities to expand the City's EV charging network through innovative programs, such as installing chargers at existing streetlight locations. f. Require new and remodeled commercial and multi-family projects to install a minimum number of electric vehicle chargers for use by employees, customers, and residents. g. Require new and remodeled single-family and multi-family projects to install electrical service and conduits for potential electric vehicle use. h. Consider requiring new and remodeled gas stations to provide EV fast chargers and hydrogen fueling stations. i. Participate in regional efforts and grant programs to encourage widespread availability of EV charging stations. j. Target policies to support ZEV adoption, including used vehicles, in low income and disadvantaged communities. k. Participate in programs to promote EV adoption, including "Drive an EV" events and other media and outreach campaigns. l. Encourage or require, as practicable, ride hailing and delivery service companies to utilize zero emission vehicles. m. Promote adoption of electric bicycles, scooters and motorcycles.	**Consistent.** Transportation in California will result in used of mixed fuels (gasoline, diesel, natural gas, electric) through 2050. The State has adopted programs to accelerate use of alternative fuels, such as the Advanced Clean Car Program. In addition, the General Plan includes policies and programs that assist the State in this regard including: ▪ Program C-4.1B. PACE Financing ▪ Policy M-7.8. Parking for Alternative Modes of Transportation ▪ Policy M-3.6: Low-Carbon Transportation ▪ Program M-3-6A: ZEV Plan ▪ Program P-3.6B: Zero Emission Municipal Vehicles ▪ Policy M-4.7: Intermodal Transit Hubs ▪ Program M-7.8A: Charging Station ▪ Program M-7.8B. Parking Standards ▪ Program M-6.3D: Electric Bicycles
LCT-C2: Bicycling. Encourage bicycling as an alternative to vehicular travel through outreach channels and partner agencies. Establish and maintain a system of bicycle facilities that are consistent with the City's Bicycle and Master Pedestrian Plan and Complete Streets policies. a. Provide bicycle racks and lockers for public use. b. Participate in a bike share program.	**Consistent.** The Mobility Element provides for accessibility and mobility options for all users of the transportation network, including pedestrians and bicyclists. The General Plan includes policies and programs for expanding the pedestrian and bicycle network, consistent with the City's Bicycle and Pedestrian Master Plan, under Goal M-6: Safe Waling and Cycling: ▪ Policy M-6.1: Encouraging Walking and Cycling ▪ Program M-6.1A: Bicycle and Pedestrian Master Plan Implementation ▪ Program M-6.1B: Station Area Plans ▪ Program M-6.1C: Canal Community Based Transportation Plan (CBTP) ▪ Program M-6.1D: Funding ▪ Program M-6.2A Pedestrian and Bicycle Safety

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
	▪ Program M-6.2B: Vision Zero ▪ Program M-6.2C: Enforcement ▪ Program M-6.2D: Safe Routes Programs ▪ Policy M-6.3L Connectivity ▪ Program M-6.3A: Implementation of Pathway Improvements ▪ Program M-6.3B: Improvements in Unincorporated Areas ▪ Program M-6.3C: Bicycle Parking ▪ Program M-6.3D: Electric Bicycles ▪ Policy M-6.4: Urban Trails Network ▪ Program M-6.4A: Urban Trails Master Plan ▪ Policy M-6.5: Pilot Projects ▪ Policy M-6.6: Coordination ▪ Program M-6.6A: Bikeshare Program ▪ Program M-6.6B: Monitoring ▪ Policy M-6.7: Universal Design ▪ Program M-6.7A: ADA Compliance ▪ Program M-6.7A: Best Practices ▪ Policy M-6.8: Pedestrian and Bicycle Programming ▪ Program M-6.8A: Public Information ▪ Program M-6.8B: Bike to Work Day ▪ Program M-6.8C: Maintenance of Pedestrian Facilities In addition, the following policies and programs also support bicycle and pedestrian safety and improvements in the City. ▪ Policy M-1.1: Regional Transportation Planning ▪ Policy M-1.2: Regional Funding ▪ Policy M-2.2: Safety ▪ Policy M-3.3: Transportation Demand Management ▪ Program M-3.5C: Micro-Mobility ▪ Policy M-4.3L Smart Improvements ▪ Policy M-4.7: Intermodal Transit Hubs ▪ Program M-4.7A: Transit Center Relocation ▪ Program M-5.1B: Emergency Access Considerations ▪ Program M-5.4A: Interchange Improvements ▪ Policy M-5.6: Truck Impacts ▪ Policy M-7.B: Parking Standards ▪ Policy M-7.9: Parking for Transit Users ▪ Policy CSI-3.5: Traffic Safety ▪ Policy EV-3.7: Business Access ▪ Program EDI-2.1A: Pedestrian and Bicycle Improvements ▪ Program EDI-4.7B: Bicycle and Pedestrian Improvements ▪ Program PROS-3.8A: Trails Master Plan
LCT-C3: Walking. Encourage walking as an alternative to vehicular travel through outreach channels and partner agencies. Establish and maintain a system of pedestrian facilities that are consistent with the City's Bicycle and Pedestrian Master Plan and Complete Streets policies	**Consistent.** See above for LCT-C2. The General Plan includes policies and programs for expanding the pedestrian and bicycle network, consistent with the City's Bicycle and Pedestrian Master Plan, under Goal M-6: Safe Waling and Cycling:
LCT-C4: Safe Routes to School. Continue to support the Safe Routes to School Program and strive to increase bicycling, walking, carpooling, and taking public transit to school.	**Consistent.** See above for LCT-C2. The General Plan includes policies and programs for Safe Routes to Schools: ▪ Program M-6.2D: Safe Routes Programs

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
a. Promote school and student participation. b. Identify issues associated with unsafe bicycle and pedestrian facilities between neighborhoods and schools, apply for Safe Routes to School grants, and execute plans to improve pedestrian and bicycle facilities.	▪ Policy M-5.5: School-Related Traffic ▪ Program M-5.5A: School Transportation
LCT-C5: Public Transit. Support and promote public transit by taking the following actions: a. Work with Marin Transit and Golden Gate Transit to maximize ridership through expansion and/or improvement of transit routes and schedules. b. Work with SMART, TAM, employers and others to provide first and last mile programs to maximize utilization of the train, including shuttle buses. c. Support the development of an attractive and efficient multi-modal transit center and provide safe routes to the transit center that encourage bicycle and pedestrian connections. d. Support a "Yellow School Bus" program and student use of regular transit to reduce school traffic. e. Encourage transit providers, including school buses, to use renewable diesel as a transition fuel and to purchase electric buses whenever replacing existing buses.	**Consistent.** The Mobility Element provides for accessibility and mobility options for all users of the transportation network, including transit users. The General Plan includes policies and programs for encouraging use of transit and coordination with the transit agencies under Goal M-4: ▪ Policy M-4.1: Sustaining Public Transportation ▪ Program M-4.1A: Transit Advocacy ▪ Program M-4.1B: Evaluating Transit Needs ▪ Program M-4.1C: Partnerships ▪ Program M-4.1D: Transit for Tourism ▪ Program M-4.1E: Transit Information ▪ Program M-4.1: Public Health ▪ Policy M-4.2: Regional Transit Options ▪ Program M-4.2A: Regional Bus Service ▪ Program M-4.2B: Rail Service ▪ Program M-4.2C: Ferry and Water Taxi Service ▪ Policy M-4.3: Smart Improvements ▪ Program M-4.3A: Rail Safety ▪ Program M-4.3B: Passenger Pickup and Drop-off ▪ Program M-4.3C: Arrival Experience ▪ Program M-4.3D: Service Reliability ▪ Program M-4.3E: Downtown Crossings ▪ Policy M-4.4: Local Transit Options ▪ Program M-4.4A: Local Bus Service ▪ Program M-4.4B: Improved Bus Stops ▪ Program M-4.4C: Local Shuttle Programs ▪ Policy M-4.5: Transit and the Environment ▪ Policy M-4.6: Paratransit Options ▪ Program M-4.6A: Other Local Transit ▪ Program M-4.6-B: Paratransit Service ▪ Policy M-4.7: Intermodal Transit Hubs ▪ Program M-4.7A: Transit Center Relocation ▪ Program M-4.7B: First Mile/Last Mile Trips ▪ Program M-4.7C: Implementation of Other Plans In addition, the following policies and programs also support transit use and service in the City. ▪ Policy M-1.1: Regional Transportation Planning ▪ Policy M-1.1A: Participation in Countywide and Regional Transportation Planning. ▪ Policy M-1.1B. Public Information about Transportation ▪ Policy M-1.2: Regional Funding ▪ Policy M-3.3: Transportation Demand Management ▪ Program M-3-3B: Support for TDM ▪ Program M3-3C: City TDM Program ▪ Policy M-3.5: Alternative Transportation Modes ▪ Program M-3.5A: Carpooling and Vanpooling ▪ Program M-3.5B: Shared Mobility

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
	▪ Program M-3.5C: Micro-Mobility ▪ Program M-3.5D: Transportation Network Companies (TNCs) ▪ Policy M-3.7: Design Features that Support Transit ▪ Policy M-3.8: Land Use and VMT ▪ Program M-5.4A: Interchange Improvements ▪ M-6.6: Coordination ▪ Policy M-7.9: Parking for Transit Users ▪ Program M-7.8A: Commuter Parking
LCT-C6: Employee Trip Reduction. Reduce vehicle miles traveled commuting to work through the following actions: a. Work with the Transportation Authority of Marin, the Metropolitan Transportation Commission, and the Bay Area Air Quality Management District (BAAQMD) to promote transportation demand programs to local employers, including rideshare matching programs, vanpool incentive programs, emergency ride home programs, telecommuting, transit use discounts and subsidies, showers and changing facilities, bicycle racks and lockers, and other incentives to use transportation other than single occupant vehicles. b. Update the City's Trip Reduction Ordinance to reflect the most recent BAAQMD regulations and to increase the number of employers subject to the ordinance. c. Embark on a behavior change and educational campaign to encourage employees to reduce vehicle trips	**Consistent.** The BAAQMD's Commuter Benefit Program requires employers with 50 or more employees in the Bay Area to implement transportation demand management (TDM) program. The Mobility Element includes policies and programs TDM programs, including: ▪ Policy M-3.3: Transportation Demand Management ▪ Program M-3.3A: Develop TDM Program Guidelines ▪ Program M-3.3B: Support for TDM ▪ Program M-3.3C: City TDM Program ▪ Program M-3.3D: Shifting Peak Hour Trips ▪ Program C-2.3: Air Pollution Reduction Measures
LCT-C7: Parking Requirements. Promote a walkable city by reducing parking requirements wherever feasible. Allow new development in the Downtown area to reduce minimum parking requirements by 20 percent from current levels. Elsewhere, reduce parking requirements based on robust transportation demand programs and proximity and frequency of transit services. Encourage unbundling of parking costs.	**Consistent.** The General Plan allows for flexibility in meeting parking as a result of changing technologies and trends. The Mobility Element goal M-7 identifies the City's parking policies. Policies and programs on parking are include: ▪ Policy M-7.1: Optimizing Existing Supply ▪ Program M-7.1A: Shared Parking ▪ Policy M-7.2: Parking Districts ▪ Policy M-7.3 Parking Technology ▪ Program M-7.3A: Downtown Parking and Wayfinding Study Recommendations ▪ Policy M-7.4: Downtown Parking ▪ Program M-7.4A: Monitoring Demand ▪ Program M-7.4B: Assessment District Expansion ▪ Program M-7.4C: Private Garages ▪ Program M-7.4D: Wayfinding Signage ▪ Program M-7.4E: Design Standards for Parking Garages ▪ Policy M-7.5: Dynamic Pricing ▪ Program M-7.5A: Adjustments to Parking Rates ▪ Policy M-7.6: Off-Street Parking Standards ▪ Program M-7.6A: Adjustments to Parking Standards ▪ Program M-7.6B: Parking Reductions ▪ Policy M-7.7: Parking Management ▪ Program M-7.7A: Residential Permit Parking ▪ Program M-7.7B: Parking Studies ▪ Policy M-7.8: Parking for Alternative Modes of Transportation ▪ Program M-7.8A: Charging Stations

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
	▪ Program M-7.8B: Parking Standards ▪ Policy M-7.9: Parking for Transit Users ▪ Program M-7.9A: Commuter Parking ▪ Policy M-7.10: Curbside Management ▪ Program LU-3.7B: Parking Regulations
LCT-C8: Traffic System Management and Vehicle Idling. a. Implement signal synchronization to minimize wait times at traffic lights and to reduce congestion through increased traffic flow. b. Utilize intelligent traffic management systems to improve traffic flow and guide vehicles to available parking. c. Encourage drivers and autonomous vehicles to limit vehicle idling through implementing behavior change and engagement campaigns. d. Investigate adopting an ordinance to regulate idling beyond State requirements.	**Consistent.** The General Plan include policies and programs to improve the efficiency of the transportation network, to reduce vehicle idling time under Goal M-2, including: ▪ Policy M-1.4 Transportation Innovation ▪ Program M-1.4A: Transportation Technology ▪ Program M-1.4B: Delivery Services ▪ Program M-1.4C: Autonomous Vehicles ▪ Policy T-1.5: Travel Data and Modeling ▪ Policy M-2.1: Road Hierarchy ▪ Program M-2.1A: Complete Streets ▪ Policy M-2.4: Transportation Efficiency ▪ Program M-2.4A: Intelligent Transportation Systems ▪ Program M-2.4B: Reducing Vehicle Idling ▪ Program M-7.4D: Wayfinding Signage
LCT-C9: Smart Growth Development. Prioritize infill, higher density, transit-oriented, and mixed-use development.	**Consistent.** The General Plan Land Use Map places higher density uses near transit stations and in areas that are less auto- dependent. Additionally, Mobility Element. Goal M-3 includes a series of policies to reduce vehicle miles traveled (VMT) by encouraging carpooling, working from home, flextime, micro-mobility (e-bikes, e-scooters), and similar strategies: ▪ LU-1.3: Land Use and Climate Change ▪ LU-1.3 A: Benefits of Transit Oriented Development ▪ LU-2.2A: Mixed Use Development ▪ Policy M-3.1: VMT Reduction Standard ▪ Policy M-3.4: Reducing Commute Lengths ▪ Program M-3.4A: Telecommuting ▪ Program M-3.4B: Housing Services ▪ Policy M-3.: Design Features that Support Transit ▪ Policy M-3.8: Land Use and VMT
LCT-C10: Electric Landscape Equipment. Encourage the use of electric landscape equipment instead of gasoline-powered equipment through engagement campaigns.	**Consistent.** The Conservation and Climate Change Element includes policies and programs that support the transition to cleaner fuels including: ▪ Policy C-2.3: Improving Air Quality Through Land Use and Transportation choices ▪ Policy C-2.6: Education and Outreach ▪ Program C-2.6B: Equipment and Generators.
LCT-M2: Low Carbon Fuels. Use low-carbon fuel such as renewable diesel as a transition fuel in the City's fleet and encourage the City's service providers to do the same, until vehicles are replaced with zero-emissions vehicles.	**Consistent.** The Conservation and Climate Change Element includes policies and programs that support the transition of the City's fleet to low carbon fuels including: ▪ Program C-2.3A: Air Pollution Reduction Measures ▪ Policy C-5.4: Municipal Programs ▪ Program C-5.4A: Low Carbon Municipal Vehicles ▪ Program C-5.4B: Advancing GHG and Sustainability Efforts ▪ Policy M-3.6: Low Carbon Transportation

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
	▪ Program M-3.6A: ZEV Plan ▪ Program M-3.6B: Zero Emission Municipal Vehicles ▪ Policy M-4.5 Transit and the Environment ▪ Program EV-1.9C: CCAP Implementation
LCT-M3: City Employee Commute. Continue to provide City employees with incentives and/or reduce barriers to use alternatives to single occupant auto commuting, such as transit use discounts and subsidies, bicycle facilities, showers and changing facilities, ridesharing services, vanpools, emergency ride home service, flexible schedules, and telecommuting when practicable.	**Consistent.** The Mobility Element. Goal M-3 includes a series of policies to reduce vehicle miles traveled (VMT) by encouraging carpooling, working from home, flextime, micro-mobility (e-bikes, e-scooters), and similar strategies: ▪ Policy M-3.1: VMT Reduction Standard ▪ Policy M-3.4: Reducing Commute Lengths ▪ Program M-3.4A: Telecommuting ▪ Program M-3.4B: Housing Services ▪ Policy M-3.: Design Features that Support Transit ▪ Policy M-3.8: Land Use and VMT ▪ Policy M-6.8: Pedestrian and Bicycle Programming ▪ Program M-6.8B: Bike to Work Day
LCT-M4: Municipal Electric Landscape Equipment. Replace gas-powered leaf blowers and other landscape equipment with electric models.	**Consistent.** The Conservation and Climate Change Element includes policies and programs that support the transition to cleaner fuels including: ▪ Policy C-2.3: Improving Air Quality Through Land Use and Transportation choices ▪ Policy C-2.6: Education and Outreach ▪ Program C-2.6B: Equipment and Generators
Energy Efficiency	
EE-C1: Energy Efficiency Programs. Promote and expand participation in residential and commercial energy efficiency programs. a. Work with organizations and agencies such as the Marin Energy Watch Partnership, the Bay Area Regional Network, Resilient Neighborhoods, and the Marin Climate & Energy Partnership to promote and implement energy efficiency programs and actions. b. Continue and expand participation in energy efficiency programs such as Energy Upgrade California, California Energy Youth Services, and Smart Lights. c. Promote utility, state, and federal rebate and incentive programs. d. Participate and promote financing and loan programs for residential and non-residential projects such as Property Assessed Clean Energy (PACE) programs, PG&E on-bill repayment, and California Hub for Energy Efficiency Financing (CHEEF) programs.	**Consistent.** The Community Design and Preservation Element and the Conservation and Climate Change Element, Goal 4: Sustainable Energy Management, include policies and programs that encourage energy efficiency: ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1A: Marin Clean Energy Targets ▪ Program C-4.1B: PACE Financing ▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.2: Energy Conservation ▪ Program C-4.2A: Energy Efficiency Outreach ▪ Program C-4.2B: Green Building Standards ▪ Program C-4.2C: Energy Efficiency Incentives ▪ Program C-4.2D: Time-of-Sale Energy Audits ▪ Program C-4.2E: Cool Roofs and Pavements ▪ Policy C4.3 Managing Energy Demand ▪ Program C-4.3A: innovative Technologies ▪ Policy H-19: Energy Conservation and Sustainability ▪ Program H-19A: Sustainability Policies and Programs
EE-C2: Energy Audits. Investigate requiring energy audits for residential and commercial buildings prior to completion of sale, including identification of cost savings from energy efficiency measures and potential rebates and financing options.	**Consistent.** The Conservation and Climate Change Element includes policies and programs for time-of-sale energy audits: ▪ Program C-4.2D: Time-of-Sale Energy Audits

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
EE-C3: Cool Pavement and Roofs. Use high albedo material for roadways, parking lots, sidewalks and roofs to reduce the urban heat island effect and save energy. a. Evaluate the use of high albedo pavements when resurfacing City streets or re-roofing City facilities. b. Encourage new development to use high albedo material for driveways, parking lots, walkways, patios, and roofing through engagement and behavior change campaigns.	**Consistent.** The Community Design and Preservation Element and the Conservation and Climate Change Element include policies and programs for 'cool' building materials: ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Program C-4.2B: Green Building Standards ▪ Program C-4.2E: Cool Roofs and Pavements ▪ Policy C-4.4: Sustainable Building Materials ▪ Program C-4.4A: Use of Alternative Building Materials
EE-C4: Green Building Reach Code. Investigate adopting a green building ordinance for new and remodeled commercial and residential projects that requires green building methods and energy efficiency savings above the State building and energy codes. Consider utilizing the County's green building ordinance as a model and including the use of photovoltaic systems and all-electric building systems as options to achieve compliance.	**Consistent.** The Community Design and Preservation Element and the Conservation and Climate Change Element include policies and programs for energy efficiency and sustainability: ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1B: PACE Financing ▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.2: Energy Conservation ▪ Program C-4.2A: Energy Efficiency Outreach ▪ Program C-4.2B: Green Building Standards ▪ Program C-4.2C: Energy Efficiency Incentives ▪ Program C-4.2D: Time-of-Sale Energy Audits ▪ Program C-4.2E: Cool Roofs and Pavements ▪ Policy C4.3 Managing Energy Demand ▪ Program C-4.3A: innovative Technologies ▪ Policy C-4.4: Sustainable Building Materials ▪ Program C-4.4A: Use of Alternative Building Materials ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning
EE-C5: Streamline Permit Process and Provide Technical Assistance. Analyze current green building permit and inspection process to eliminate barriers and provide technical assistance to ensure successful implementation of green building requirements. Work county-wide to make it easier for contractors and building counter staff to simplify applications and identify incentives.	**Consistent.** The Conservation and Climate Change Element includes policies and programs for to remove barrier to successful implementation of green building requirements: ▪ Program C-4.1B: PACE Financing ▪ Program C-4.1C: Regulatory Barriers
EE-M1: Streetlights. Complete replacement of inefficient street, parking lot and other outdoor lighting with LED fixtures.	**Consistent.** The Community Services and Infrastructure Element Program CSI-4.7D: Street Lighting Program. Additionally, Program C-4:1E: Municipal Buildings directs the City to incorporate renewable energy for municipal facilities.
EE-M2: Energy Efficiency Audit and Retrofits. Work with the Marin Energy Management Team to identify and implement energy efficiency projects in municipal buildings and facilities and electrification of existing building systems and equipment that use natural gas.	**Consistent.** The Conservation and Climate Change Element includes policies and programs for energy efficiency upgrades/retrofits: ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1A: Marin Clean Energy Targets ▪ Program C-4.1B: PACE Financing

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
	▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.2: Energy Conservation ▪ Program C-4.2A: Energy Efficiency Outreach ▪ Program C-4.2B: Green Building Standards ▪ Program C-4.2C: Energy Efficiency Incentives ▪ Program C-4.2D: Time-of-Sale Energy Audits
EE-M3: Energy Conservation. Reduce energy consumption through behavioral and operational changes. a. Establish energy efficiency protocols for building custodial and cleaning services and other employees, including efficient use of facilities, such as turning off lights and computers, thermostat use, etc. b. Incorporate energy management software, electricity monitors, or other methods to monitor energy use in municipal buildings. c. Investigate 9/80 work schedule for City facilities where feasible and where facilities can be shut down entirely.	**Consistent.** See response for EE-C-1, regarding energy conservation. The General Plan includes the following additional policies for municipal buildings and services: ▪ Program C-4:1E: Municipal Buildings ▪ Program EV-2A: Responding to Workplace Trends ▪ Policy M-3.3: Transportation Demand Management ▪ Program M-3-3C: City TDM Program ▪ Program M-3.4A: Telecommuting ▪ CSI-4.5: Infrastructure Technology ▪ Program C-4.1E: Municipal Buildings ▪ Policy C4.3 Managing Energy Demand ▪ Program C-4.3A: innovative Technologies
Renewable Energy	
RE-C1: Renewable Energy Generation. Accelerate installation of residential and commercial solar and other renewable energy systems. a. Provide permit streamlining and reduce or eliminate fees, as feasible. b. Amend building codes, development codes, design guidelines, and zoning ordinances, as necessary, to facilitate small, medium, and large-scale installations. c. Encourage installation of solar panels on carports and over parking areas on commercial projects and large-scale residential developments through ordinance, engagement campaigns, or agency incentives. d. Participate and promote financing and loan programs for residential and non-residential projects such as Property Assessed Clean Energy (PACE) programs and California Hub for Energy Efficiency Financing (CHEEF) programs. e. Encourage installation of battery storage in conjunction with renewable energy generation projects through engagement campaigns and partner agency incentives.	**Consistent.** The Conservation and Climate Change Element includes policies and programs for encouraging use of renewable energy. ▪ Policy CDP-5.11: Sustainability ▪ Program CDP-5.11A: Energy Retrofits ▪ Policy C-4.1: Renewable Energy ▪ Program C-4.1B: PACE Financing ▪ Program C-4.1C: Regulatory Barriers ▪ Program C-4.1D: Reducing Natural Gas ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning ▪ Policy C-5.3: Advocacy ▪ Program C-5.3B: State and Federal Actions ▪ Program C-5.3C: Regional Collaboration
RE-C2: GHG-Free Electricity. Encourage residents and businesses to switch to 100 percent renewable electricity (MCE Deep Green, MCE Local Sol, and PG&E Solar Choice) through engagement campaigns and partner agency incentives and work with MCE Clean Energy to assure that it reaches its goal to provide electricity that is 100 percent GHG-free by 2025	**Consistent.** The Conservation and Climate Change Element includes policies and programs to align the City's goals with that of Marin Clean Energy (MCE). ▪ Policy C-4.1: Renewable Energy ▪ Policy C-4.1A: Marin Clean Energy Targets ▪ Program C-4.1E: Municipal Buildings ▪ Policy C-4.5: Resource Efficiency in Site Development ▪ Program C-4.5A: Solar Site Planning ▪ Policy C-5.3: Advocacy ▪ Program C-5.3B: State and Federal Actions ▪ Program C-5.3C: Regional Collaboration

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
RE-C3: Building and Appliance Electrification. Promote electrification of building systems and appliances that currently use natural gas, including heating systems, hot water heaters, stoves, and clothes dryers	**Consistent.** The Conservation and Climate Change Element includes Program C-4.1D: Reducing Natural Gas Use to transition to carbon free energy sources.
RE-C4: Innovative Technologies. Investigate and pursue innovative technologies such as micro-grids, battery storage, and demand-response programs that will improve the electric grid's resiliency and help to balance demand and renewable energy production.	**Consistent.** The Safety and Resilience Element Program C-4.1D: Reducing Natural Gas Use to transition to carbon free energy sources.S-4.9B: Energy Storage Plan and Community Services and Infrastructure Element Program CSI-4.13B: Microgrids, direct the City to develop a plan, including microgrid and expanded battery capacity, to improve reliability of the power system following a major disaster. Additionally, the Conservation and Climate Change Element includes the following policy and program for new technologies: ▪ Policy C-4.3: Managing Energy Demand ▪ Program C-4.3A: Innovative Technologies
RE-M1: Solar Energy Systems for Municipal Buildings. Install solar energy systems at municipal buildings and facilities where feasible and investigate and pursue innovative technologies such as battery storage and demand response programs.	**Consistent.** The Conservation and Climate Change Element includes Program C-4.1E: Municipal Buildings : directs the City to incorporate renewable energy into the construction or retrofit of municipal buildings, where feasible.
RE-M2: Municipal Deep Green Electricity. Continue to purchase MCE Deep Green electricity for all City facilities	**Consistent.** The Conservation and Climate Change Element includes Program C-4.1E: Municipal Buildings which identifies continued use of MCE Deep Green (100 percent renewable power).
Waste Reduction	
WR-C1: Commercial Organic Waste. Work with Zero Waste Marin, Marin Sanitary Service, and non-profits such as Extra Food to divert commercial organic waste from the landfill through recycling, composting, and participation in waste-to-energy and food recovery programs. a. Conduct outreach and education to businesses subject to State organic waste recycling mandates (AB 1826) and encourage or enforce compliance with the law. b. Refer new and major remodel commercial and multi-family residential project proposals to the City's waste hauler for review and comment and require projects to provide adequate waste and recycling facilities and access as feasible. c. Encourage and facilitate commercial and multi-family property owners to require responsible use of on-site recycling facilities in lease and rental agreements and to train and regularly evaluate janitorial, landscape, and other property management services.	**Consistent.** The Community Services and Infrastructure Element includes the following policies and programs to reduce landfilled waste: ▪ Policy CSI-4.17: Reducing Landfilled Waste Disposal ▪ Program CSI-4.17A: Waste Reduction ▪ Program CSI-4.17B: Recycling ▪ Program CSI-4.17C: Construction and Demolition Waste ▪ Program CSI-17D: Waste Reduction Programs ▪ Program CSI-4.17E: Community Composting ▪ Program CSI-4.17F: Food to Energy ▪ Program CSI-4.17G: Recyclable Waste Receptacles ▪ Policy CSD-4.18: Waste Reduction Advocacy and Education ▪ Program CSI-4.18A: Recycling Education
WR-C2: Residential Organic Waste. Work with Zero Waste Marin, Marin Sanitary Service, and other organizations to educate and motivate residents to utilize curbside collection services and home composting for food waste.	**Consistent.** See response to WR-C2. Program CSI-4.17A directs the city to implement waste reduction programs consistent with the Zero Waste Marin's reduction goals.
WR-C3: Construction & Demolition Debris and Self-Haul Waste. Require all loads of construction & demolition debris and self-haul waste to be processed for recovery of materials as feasible. Investigate creation of an ordinance requiring deconstruction of buildings proposed for demolition or remodeling when materials	**Consistent.** See response to WR-C2. Program CSI-4.17C identifies continued implementation of the City's Construction and Demolition Debris diversion goals. Consistent with the California Green Building Standards Code (CALGreen) waste diversion requirements.

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Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
of significant historical, cultural, aesthetic, functional or reuse value can be salvaged.	
WR-C4: Mandatory Waste Diversion. Adopt an ordinance requiring mandatory subscription to and participation in waste diversion activities, including recycling and organics collection provided by Marin Sanitary Service. Consider including phased implementation of the ordinance, penalties, and practical enforcement mechanisms.	**Consistent.** See response to WR-C2. Residents in the City have access to the City's existing recycling programs. Assembly Bill 341 requires commercial recycling. Program CSI-4.17B identifies continued implementation of the City's recycling programs for homes, apartments, and workplaces.
WR-C5: Waste Processing Infrastructure. Review and revise the City's franchise agreement with Marin Sanitary Service to ensure waste reduction and diversion targets are met. Conduct a feasibility study and consider investing in new solid waste processing infrastructure to remove recoverable materials (recycling and organics) from the waste stream and reduce contamination. Require regular residential and commercial waste audits and waste characterization studies to identify opportunities for increased diversion and to track progress in meeting targets.	**Consistent.** See response to WR-C2, which identifies policies and programs to support the City's waste diversion goals. Program CSI-4.17F identifies support for a waste-to-energy facility.
WR-C6: Extended Producer Responsibility. Encourage the State to regulate the production and packaging of consumer goods and take-back programs. Encourage on-demand delivery services like Amazon and Blue Apron to reduce packaging waste and investigate requirements and incentives for same through ordinance or engagement campaigns.	**Consistent.** See response to WR-C2, which identifies policies and programs to support the City's waste diversion goals.
WR-C7: Inorganic Waste. Promote reuse, repair, and recycling of inorganic materials, and encourage reduced use of packaging and single use items through engagement campaigns. Investigate supporting a local building material reuse center.	**Consistent.** See response to WR-C2. Program CSI-4.17E directs the City to consider mandatory community scale food and greenwaste composting.
WR-M1: Waste from Public Facilities. Increase opportunities for recycling, reuse, and composting at City facilities.	**Consistent.** See response to WR-C2. Residents in the City have access to the City's existing recycling programs. Assembly Bill 341 requires commercial recycling. Program CSI-4.17B identifies continued implementation of the City's recycling programs for homes, apartments, and workplaces.
WR-M2: Waste from City Operations. Embark on an educational and social marketing-based campaign to increase recycling, composting, reuse, and waste reduction within municipal operations. Conduct periodic waste audits of City facilities to understand where opportunities for increased diversion lie and to track progress.	**Consistent.** See response to WR-C2. The following goal and policy support education to support the City's waste diversion goals: ▪ Policy CSD-4.18: Waste Reduction Advocacy and Education ▪ Program CSI-4.18A: Recycling Education
Water Conservation	
WC-C1: Community Water Use. Reduce indoor and outdoor water use in residential and commercial buildings and landscaping. a. Work with Marin Municipal Water District (MMWD) and other organizations to promote water conservation programs and incentives. b. Educate residents and businesses about local and State laws requiring retrofit of non-compliant plumbing fixtures during remodeling and at resale. c. Ensure all projects requiring building permits, plan check, or design review comply with State and MMWD regulations.	**Consistent.** The Conservation and Climate Change Element includes the following policies and programs to increase plumbing water efficiency and reduce landscape water use: ▪ Policy C-3.8: Water Conservation ▪ Program C-3.8A: Water Conservation Programs ▪ Program C-3.8B: Public Education ▪ Program C-3.8C: Reclaimed Water Use ▪ Program C-3.8D: Greywater and Rainwater ▪ Program C-3.8E: Reducing Municipal Water Use ▪ Policy C-3.9: Water Efficient Landscaping ▪ Program C-3.9A: Demonstration Gardens ▪ Policy CSI-4.12: Recycled Water ▪ Program CSI-4.12A: CMSA Capacity Expansion

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Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
d. Encourage the installation of greywater and rainwater collection systems and the use of recycled water where available through ordinance or engagement campaigns.	▪ Program CSI-4.12B: Las Gallinas Expansion Project ▪ Program CSI-4.12C: Sewer Line Replacement
WC-M1: Municipal Water Use. Reduce indoor and outdoor water use in municipal facilities and operations. a. Replace high water use plants and inefficient irrigation systems with water-efficient landscaping. b. Investigate synthetic turf that uses organic infill for ball fields and parks to reduce water, herbicide use, and maintenance costs, while increasing field use throughout the year. c. Replace inefficient plumbing fixtures with high-efficiency fixtures. d. Use recycled water as available and practicable.	**Consistent.** See response to WC-C1. Program C-3.9E: Reducing Municipal Water Use directs the City to reduce water use for municipal operations through water efficient landscaping, maintenance, and using recycled water, where applicable.
Sequestration and Adaption	
SA-C1: Urban Forest. Increase carbon sequestration and improve air quality and natural cooling through increasing tree cover in San Rafael. a. Plant additional trees on City-owned land, including public parks, open space, medians, and rights of way, where feasible. b. Review parking lot landscape standards to maximize tree cover, size, growth, and sequestration potential. c. Regulate and minimize removal of large trees and require planting of replacement trees. d. Require that the site planning, construction and maintenance of new development preserve existing healthy trees and native vegetation on site to the maximum extent feasible. Replace trees and vegetation not able to be saved. e. Encourage community members to plant trees on private land. Consider creating a tree giveaway event or providing lower-cost trees to the public through a bulk purchasing program. f. Encourage the creation of community gardens on public and private lands by community groups. g. Provide information to the public, including landscape companies, gardeners and nurseries, on carbon sequestration rates, drought tolerance, and fire resistance of different tree species. h. Manage trees and invasive species in the open space for forest health and reduction of fuel load. i. Require new development, redevelopment, and infrastructure projects to implement best management practices as feasible, including low-impact development techniques, the minimal use of non-pervious surfaces in landscape design, and the integration of natural features into the project design, to naturally filter and biodegrade contaminants and to minimize surface runoff into drainage systems and creeks.	**Consistent.** The General Plan includes the following policies and programs on carbon sequestration: ▪ Policy CDP-3.5: Street Trees ▪ Program CDP-3.5A: Street Tree Planting and Maintenance ▪ Program CDP-3.5B: Street Tree Inventory ▪ Program CDP-3.5C: Street Trees for New Development ▪ Program CDP-3.5D: Street tree Maintenance ▪ Policy C-1.9: Enhancement of Creeks and Drainageways ▪ Policy C-3.3: Low Impact Development ▪ Program C-3.3B: Non-Traditional Gardens ▪ Policy C-3.4: Green Streets ▪ Program C-3.4A: Green Streets Planning ▪ Program C-3.4B: Funding ▪ Policy C-5.5: Carbon Sequestration ▪ Policy CD-3.5 ▪ Policy PROS-1.18: Sustainable Park Operations ▪ Program PROS-1.18A: Sustainable Design ▪ Policy PROS-3.3: Open Space Management Plan ▪ Program PROS-3.3A: Open Space Management Plan ▪ Policy PROS-3.10: Public Education ▪ Program S-4.1G: Open Space and Forestry Management
SA-C2: Carbon Sequestration. Increase carbon sequestration in the built environment, developed landscapes, and natural areas. a. Encourage use of building materials that store carbon, such as wood and carbon-intensive concrete through agency partnerships and engagement campaigns. b. Encourage and support composting to develop healthy, carbon-rich soils.	**Consistent.** See response to SA-C1. The General Plan includes policies and programs to increase carbon sequestration.

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
c. Manage parks and open spaces to steadily increase carbon in vegetation and soil. d. Increase the extent and carbon sequestration potential of bay wetlands, through improvements such as horizontal levees	
SA-C3: Carbon Offsets. Reduce the impact of greenhouse gas emissions through the purchase of carbon offsets. a. Encourage community members to purchase carbon offsets to reduce their carbon footprint through engagement campaigns. b. Consider partnering with a local non-profit organization to promote a carbon offset program. c. Focus on offsetting emissions that are difficult to mitigate otherwise, such as airplane travel.	**Consistent.** The General Plan Goal C-5 ensures that the City's General Plan is aligned with the State's GHG reduction targets. Program C-5.1C: Funding, directs the City to investigate creation of a local carbon fund.
SA-C4: Sea Level Rise. Prepare for and adapt to a rising sea level. a. Consider the potential for sea level rise when processing development applications that might be affected by such a rise. Use current Flood Insurance Rate Maps and National Oceanic and Atmospheric Administration (NOAA) recommendations associated with base flood elevation adjustments for sea level rise in the review of development proposals. Adopt requirements to assess sea level rise risks on new development, infrastructure, and transit corridors. b. Prepare a guidance document for incorporating sea level rise into the City's capital planning process. c. Work with local, County, state, regional, and federal agencies with Bay and shoreline oversight and with owners of critical infrastructure and facilities in the preparation of a plan for responding to rising sea levels. Make sure all local stakeholders are kept informed of such planning efforts. d. Investigate developing flood control projects and modifying the City's land use regulations for areas subject to increased flooding from sea level rise. e. Update GIS (Geographic Information System) maps to include new data as it becomes available; utilize GIS as a tool for tracking sea level rise and flooding and make available to the public. f. Study the creation of a Bayfront overlay zone or similar that would establish standards for developing in areas subject to flooding from SLR.	**Consistent.** Policy C-5.2: Consider Climate Change Impacts, ensures that future projects consider the City's GHG reduction targets and adaptation goals. Additionally, the goals and policies of the Land Use Element and the Safety and Resilience Element ensure that sea level rise and other climate hazards are considered. Goal S-3: Resilience to Flooding and Sea Level Rise, ensures the City considers City's vulnerabilities to this climate change impact. ▪ Policy LU-1.2: Development Timing ▪ Program LU-1.2A: Development Review ▪ Policy LU-1.4: Reasonable Interim Use of Property ▪ Program LU-1.4A: Reasonable Interim Uses ▪ Policy LU-1.8: Density of Residential Development ▪ Policy LU-1.10: Intensity of Non-Residential Development ▪ Policy LU-1.12: Transfer of Development Rights ▪ Program LU-1.12A: Transfer of Development Rights (TDR) Program ▪ Policy LU-1.17: Building Heights ▪ Program LU-2.1A: Zoning Amendments ▪ Program LU-2.4A: Industrial Zoning ▪ Policy C-1.2: Wetlands and Sea Level Rise ▪ Program C-1.3D: System Improvements ▪ Program PROS-1.3C: Adaptation Projects ▪ Program PROS-1.18A: Sustainable Design ▪ Program S-1.3B: Use of Hazard Maps in Development Review ▪ Policy S-3.1: Sea Level Rise Projection Map ▪ Program S-3.1A: Incorporate into City GIS ▪ Program S-3.1B: Periodic Update of Sea Level Rise Projection Map ▪ Program S-3.1C: Sea Level Rise Overlay Zone ▪ Policy S-3.2: Data Consistency ▪ Program S-3.2A: Coordination with County of Marin ▪ Policy S-3.3: Awareness and Disclosure ▪ Program S-3.3A: Residential Building Resale (RBR) Reports ▪ Policy S-3.4: Mitigating Flooding and Sea Level Rise Impacts ▪ Program S-3.4A: Development Projects

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
	▪ Program S-3.4B: Capital Projects ▪ Program S-3.4C: Coordination with Utilities and Services ▪ Policy S-3.5: Minimum Elevations ▪ Program S-3.5A: Code Amendments for Floor Elevation ▪ Program S-3.5B: Ground Elevation Surveys ▪ Program S-3.5C: National Flood Insurance Program (NFIP) ▪ Policy S-3.6: Resilience to Tidal Flooding ▪ Program S-3.6A: Sea Level Rise Adaptation Plan ▪ Program S-3.6B: Partnerships ▪ Program S-3.6C: Countywide Agency/Joint Powers Authority ▪ Policy S-3.7: Shoreline Levees ▪ Program S-3.7A: Levee Improvement Plans ▪ Program S-3.7B: Financing Levee Improvements ▪ Policy S-3.8 Storm Drainage Improvements ▪ Program S-3.8A: Storm Drainage Improvements ▪ Program S-3.8B: Green Infrastructure Guidelines ▪ Policy S-3.9: Flood Control Improvements Funding ▪ Program S-3.9A: Incremental Flood Control Improvements ▪ Program S-3.9B: Flood Hazard Mitigation Projects ▪ Program S-3.9C: Restoration and Dredging Projects ▪ Policy M-2.11: Sea Level Rise ▪ Policy CSI-4.6: Climate Change Impacts ▪ Program CSI-4.6A: Guidance Document ▪ Program CSI-4.6B: Coordination with Service Providers ▪ Policy CSI-4.9: Wastewater Facilities ▪ Policy CSI-4.11: Canal Dredging ▪ Program CSI-4.11A: Funding ▪ Program CSI-4.14B: Prioritizing of Undergrounding Projects ▪ Policy EDI-2.10 Resiliency Planning
SA-C5: Climate Change Adaptation. Prepare for and respond to the expected impacts of climate change. a. Continue to incorporate the likelihood of sea level rise and increased risk of wildfire and extreme heat and storm events in the City's Local Hazard Mitigation Plan. b. Incorporate the likelihood of climate change impacts into City emergency planning and training. c. Coordinate with water districts, wildlife agencies, flood control and fire districts, Marin County, and other relevant organizations to develop a comprehensive plan addressing climate change impacts and adaptation strategies. Address human health and the health and adaptability of natural systems, including the following: ▪ Water resources, including expanded rainwater harvesting, water storage and conservation techniques, water reuse, water-use and irrigation efficiency, and reduction of impervious surfaces.	**Consistent.** See response to SA-C4. Policy C-5.2: Consider Climate Change Impacts, ensures that future projects consider the City's GHG reduction targets and adaptation goals. Additionally, the goals and policies of the Land Use Element and the Safety and Resilience Element ensure that sea level rise and other climate hazards are considered. In addition to the policies and programs listed under SA-C4 for sea level rise, the Safety and Resilience Element includes the following policies on increased frequency and severity of fire impacts: ▪ Policy S-4.1: Wildfire Hazards ▪ Program S-4.1A: Wildfire Prevention and Action Plan ▪ Program S-4.1B: Wildfire Hazard Maps ▪ Program S-4.1C: Fire Protection Ordinance ▪ Program S-4.1D: Wildfire Fuel Breaks ▪ Program S-4.1E: Goat Grazing ▪ Program S-4.1F: Encampment Related Hazards ▪ Program S-4.1G: Open Space and Forestry Management ▪ Policy S-4.2: Fire Resilience in Developed Areas ▪ Program S-4.2A: Reduction of Structure Hazards

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
▪ Biological resources, including land acquisition, creation of marshlands/wetlands as a buffer against sea level rise and flooding, and protection of existing natural barriers. ▪ Public health, including heat-related health plans, vector control, air quality, safe water, and improved sanitation. ▪ Environmental hazard defenses, including seawalls, storm surge barriers, pumping stations, and fire prevention and suppression. d. Ensure fair and robust inclusion of lower-income households and our diverse communities in the planning and response to climate change impacts, including sea level rise, wildfire, public health, and emergency preparedness.	▪ Program S-4.2B: Tree Maintenance ▪ Program S-4.2C: Public Education on Fire Resilience and Response ▪ Policy S-4.3: New Development in Fire Hazard Areas ▪ Program S-4.3A: Fire Hazard Mitigation in New Development ▪ Program S-4.3B: Development Review for Emergency Response ▪ Program S-4.3C: Wildfire Prevention Funding ▪ Policy EDI-2.10 Resiliency Planning
Community Engagement	
CE-C1: Community Education. Work with community-based outreach organizations, such as Resilient Neighborhoods, to educate and motivate community members on ways to reduce greenhouse gas emissions in their homes, businesses, transportation modes, and other activities.	**Consistent.** The Conservation and Climate Change Element Policy C-5.7, Climate Change Education, outlines the City's Climate Change Education measures. ▪ Policy C-5.7: Climate Change Education ▪ Program C-5.7A: Public Outreach Campaign ▪ Program C-5.7B: Resilient Neighborhoods ▪ Program C-5.7C: Financial Incentives ▪ Program C-5.7D: Promote Sustainability Efforts
CE-C2: Community Engagement. Implement a communitywide public outreach and behavior change campaign to engage residents, businesses, and consumers around the impacts of climate change and the ways individuals and organizations can reduce their GHG emissions and create a more sustainable, resilient, and healthier community. Create an overarching theme to articulate a long-term goal, motivate community members, and brand a comprehensive suite of GHG-reduction programs. Prioritize promotion of programs that have the greatest greenhouse gas reduction potential while utilizing the latest social science on behavior change. Emphasize and encourage citizens' involvement in reaching the community's climate goals, including innovative means of tracking milestones and comparing San Rafael's performance with other communities and with state, national and global benchmarks. a. Conduct outreach to a wide variety of neighborhood, business, educational, faith, service, and social organizations. b. Conduct outreach and education to the Latino community by using media, organizations, and gathering places favored by Latinos and translating materials into Spanish. c. Inform the public about the benefits of installing energy and water efficient appliances and fixtures, electrifying homes and commercial buildings, installing solar energy systems, and purchasing 100% renewable electricity. d. Inform the public about the benefits of using carbon-free and low-carbon transportation modes, such as driving electric vehicles, walking, bicycling, taking public transportation, and ridesharing. e. Utilize and tailor existing marketing materials when available.	**Consistent.** See response to CE-C-1. The Conservation and Climate Change Element Policy C-5.7, Climate Change Education, outlines the City's Climate Change Education measures. In addition, the following measure inform the public about benefits of efficiency programs and awareness of climate change impacts: ▪ Program C-4.1A: Marin Clean Energy Targets ▪ Program C-4.1B: PACE Financing ▪ Program C-4.2A: Energy Efficiency Outreach ▪ Policy S-3.3: Awareness and Disclosure ▪ Program S-6.1C: Emergency Preparedness Plan ▪ Policy S-6.2: Neighborhood Disaster Preparedness Programs ▪ Program S-6.2A: Educational and Training Programs ▪ Program S-6.2B: Neighborhood Disaster Plans ▪ Program S-6.2C: Website Improvements ▪ Program S-6.2D: Outreach to Vulnerable Populations ▪ Program S-6.2E: Disaster Management Drills ▪

TABLE 4.8-6 SAN RAFAEL CLIMATE CHANGE ACTION PLAN 2030 / GENERAL PLAN 2040 CONSISTENCY ANALYSIS

Measure (San Rafael CCAP 2030)	General Plan 2040 Policy/Program Direction
f. Inform the public about the environmental benefits of eating less meat and dairy products, growing food at home, and purchasing locally-produced food. g. Partner with MCE, PG&E, MMWD, Marin Sanitary Service, Transportation Authority of Marin, Marin Transit, Golden Gate Transit, SMART, and other entities to promote available financing, audits, rebates, incentives, and services to the San Rafael community. h. Utilize the City's website, newsletters, social media, bill inserts, public service announcements and advertisements, recognition programs, and other forms of public outreach. i. Create stories and "shareable content" that can be used by bloggers, businesses, non-profits, social media, and traditional media. j. Use creative methods to engage the public, such as games, giveaways, prizes, contests, simple surveys, digital tools, and "pop-up" events. k. Develop pilot programs using community-based social marketing and other social science-based techniques to effect behavior change. l. Participate in countywide outreach and education efforts, such as Drawdown Marin.	
CE-C3: Advocacy. Advocate at the state and federal levels for policies and actions that support the rapid transition to GHG-free energy sources, electrification of buildings and the transportation fleet, and other impactful measures to sharply reduce greenhouse gas emissions.	**Consistent.** The Conservation and Climate Change Element includes goals and policies that support the transition to carbon free energy under Goal 4: Sustainable Energy Management.
CE-C4: Innovation and Economic Development. Convene an economic development and innovation working group to explore public-private partnerships and develop ways to decarbonize our local economy while spurring sustainable enterprise	**Consistent.** The Conservation and Climate Change Element includes goals and policies that support the transition to carbon free energy under Goal 4: Sustainable Energy Management. The Mobility Element also includes goals and policies to decarbonize the transportation sector. The Economic Vitality Element includes Policy EV-1.11: Innovation, to support best practices for innovation, diversification, and pathways to a low-carbon economy. ▪ Policy EV-1.9: Sustainable Business Practices ▪ Program EV-1.9A: Green Economy ▪ Program EV-1.9B: Green Business Practices ▪ Program EV-1.9C: CCAP Implementation ▪ Policy EV-1.11: Innovation ▪ Program EV-1.1A: Innovative Working Group
CE-C5: Green Businesses. Encourage local businesses to participate in the Marin County Green Business Program through partnerships with the County, Chamber, and other business groups.	**Consistent.** See response to CE-C4. The Economic Vitality Element includes Policy EV-1.9: Sustainable Business Practices, to encourage green business practices in the City.

Source: San Rafael. 2019, April 23. Climate Change Action Plan.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Impact Discussion GHG-1, approximately half of the Downtown Precise Plan Area is located in a *Plan Bay Area* PDA and TPA and potential future development in this portion of the Downtown Precise Plan Area and potential future development would be inherently designed to reduce GHG emissions and would be in compliance with *Plan Bay Area*. Therefore, implementation of the Downtown Precise Plan would further the overall goals of the General Plan 2040 with respect to reducing GHG emissions and the impacts from the Downtown Precise Plan would be *less-than-significant,* the same as General Plan 2040 discussed previously.

Significance without Mitigation: Less than significant.

GHG-3 Implementation of the proposed project could cumulatively contribute to GHG emissions and global climate change.

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact GHG-1 are not project-specific impacts to global warming, but are the proposed project's contribution to this cumulative impact. As discussed under Impact GHG-1, implementation of the proposed project would result in a decrease in GHG emissions in horizon year 2040 from existing baseline but may not meet the long-term GHG reduction goal under Executive Order S-03-05. Implementation of General Plan Policy C-5.1 would ensure that the City is tracking and monitoring the City's GHG emissions to chart a trajectory to achieve the long-term year 2050 GHG reduction goal set by Executive Order S-03-05. However, at this time, there is no plan that extends beyond 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. Therefore, project-related GHG emissions and their contribution to global climate change would be cumulatively considerable, and GHG emissions impacts would be *significant and unavoidable*.

Significance without Mitigation: Significant and unavoidable. As described in Impact Discussion GHG-1, the City currently tracks and monitors the City's GHG emissions in order to chart a trajectory to achieve the long-term year 2050 GHG reduction goal set by Executive Order S-03-05. However, at this time, there is no plan that extends beyond 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology.[42] Advancement in technology in the future could provide additional reductions to allow the state and City to meet the 2050 goal; however, no additional statewide measures are currently available. Therefore, impacts would be *significant and unavoidable*.

[42] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

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4.9 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to hazardous materials, airport safety hazards, and the impairment of an adopted emergency response plan or emergency evacuation plan. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project. A discussion of wildland fire hazards is provided in Chapter 4.18, Wildfire, of this Draft Environmental Impact Report (EIR).

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 REGULATORY FRAMEWORK

Federal Regulations

United States Environmental Protection Agency

The United States Environmental Protection Agency (USEPA) is the primary federal agency that regulates hazardous materials and waste. In general, the USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs, delegating the responsibility for issuing permits, and monitoring and enforcing compliance to states and Native American tribes. USEPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing waste volumes through such strategies as recycling. California falls under the jurisdiction of USEPA Region 9. Under the authority of the Resource Conservation and Recovery Act (RCRA) and in cooperation with State and tribal partners, the USEPA Region 9 Waste Management and Superfund Divisions manage programs for site environmental assessment and cleanup, hazardous and solid waste management, and underground storage tanks.

United States Department of Transportation

The United States Department of Transportation (DOT) has the regulatory responsibility for the safe transportation of hazardous materials between states and internationally. The DOT regulations govern all means of transportation, except for those packages shipped by mail, which are covered by United States Postal Service regulations. The federal RCRA of 1976 (described herein) imposes additional standards for the transport of hazardous wastes.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) requires specific training for hazardous materials handlers, provision of information to employees who may be exposed to hazardous materials, and acquisition of material safety data sheets from materials manufacturers. The material safety data sheets describe the risks, as well as proper handling and procedures, related to specific hazardous materials. Employee training must include response and remediation procedures for hazardous materials releases and exposures.

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to the Marin County Department of Public Works, Waste Management Division, for State law regulating hazardous waste producers or generators in San Rafael.[1]

Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act of 1986

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. The Superfund Amendments and Reauthorization Act (SARA) amended the CERCLA on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other State and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased State involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund to $8.5 billion.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), also known as SARA Title III, was enacted in October 1986. This law requires State and local governments to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301 through 312 are administered by USEPA's Office of Emergency Management. USEPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through California Accidental Release Prevention (CalARP) program. Under the CUPA program, the CalEPA has in turn delegated enforcement authority to the San Rafael Fire Department (SRFD) for CalARP.[2]

[1] City of San Rafael, 2004, *San Rafael General Plan 2020 Draft Environmental Impact Report*.

[2] PlaceWorks, 2016, Phase I Environmental Site Assessment for City of San Rafael Fire Station 57.

Hazardous Materials Transportation Act

The DOT regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations. State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). The California State Fire Marshal's Office has oversight authority for hazardous materials liquid pipelines. The California Public Utilities Commission has oversight authority for natural gas pipelines in California. These agencies also govern permitting for hazardous materials transportation.

Federal Response Plan

The Federal Response Plan of 1992 is a signed agreement among 27 federal departments and agencies and other resource providers, including the American Red Cross, that: (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency. The Federal Response Plan is part of the National Response Framework, which was most recently updated in October 2019.

The Stafford Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) of 1988, as amended, authorizes federal government assistance for emergencies and disasters when State and local capabilities are exceeded. The Stafford Act forms the statutory authority for most federal disaster response activities, especially as they relate to the Federal Emergency Management Agency (FEMA) and FEMA programs.

National Response Framework

The National Response Framework, published by the United States Department of Homeland Security (updated October 28, 2019), is a guide for the nation to respond to all types of disasters and emergencies. This framework describes specific authorities and best practices for managing incidents that range from serious local or large-scale terrorist attacks to catastrophic natural disasters. In addition, the National Response Framework describes the principles, roles, and responsibilities, and coordinating structures for responding to an incident, and further describes how response efforts integrate with those of the other mission areas.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorizes the DOT to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration (PHMSA) within the DOT develops and enforces regulations for the safe, reliable, and environmentally sound operation of the

nation's 2.6-million-mile pipeline transportation system. DOT's and PHMSA's regulations governing natural gas transmission pipelines, facility operations, employee activities, and safety are found at Code of Federal Regulations Title 49, Transportation, Parts 190 through 192, Part 195, and Part 199.

Pipeline Safety Improvement Act of 2002

The Pipeline Safety Improvement Act mandates that the DOT, the Department of Energy, and the National Institute of Standards and Technology in the Department of Commerce carry out a program of research, development, demonstration, and standardization to ensure the integrity of pipeline facilities.[3] The purpose of the Research and Design Program is to identify safety and integrity issues and develop methodologies and technologies to characterize, detect, and manage risks associated with natural gas and hazardous liquid pipelines.

Pipeline Inspection, Enforcement, and Protection Act of 2006

The Pipeline Inspection, Enforcement, and Protection Act confirms the commitment to the Integrity Management Program and other programs enacted in the Pipeline Safety Improvement Act of 2002. The 2006 legislation includes provisions on:

- Preventing excavation damage to pipelines through the enhanced use and improved enforcement of State "One-Call" laws that preclude excavators from digging until they contact the State One-Call system to locate the underground pipelines;
- Minimum standards for Integrity Management Programs for distribution pipelines (including installation of excess flow valves on single-family residential service lines based on feasibility and risk);
- Standards for managing gas and hazardous liquid pipelines to reduce risks associated with human factors (e.g., fatigue);
- Authority for the Secretary to waive safety standards in emergencies;
- Authority for the Secretary to assist in restoration of disrupted pipeline operations;
- Review and update incident reporting requirements;
- Requirements for senior executive officers to certify operator integrity management performance reports; and
- Clarification of jurisdiction between states and PHMSA for short laterals that feed industrial and electric generator consumers from interstate natural gas pipelines.[4]

Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011

The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 was designed to examine and improve the state of pipeline safety regulation. This act accomplishes the following:

- Reauthorizes PHMSA's federal pipeline safety programs through fiscal year 2015.
- Provides the regulatory certainty necessary for pipeline owners and operators to plan infrastructure investments and create jobs.

[3] Pipeline and Hazardous Materials Safety Administration, October, 2017. Pipeline Safety Improvement Act of 2002. https://www.phmsa.dot.gov/pipeline/congressional-mandates/pipeline-safety-improvement-act-2002.

[4] Interstate Natural Gas Association of America, 2019, *The Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006*. https://www.ingaa.org/Pipelines101/143/861/851.aspx.

- Improves pipeline transportation by strengthening enforcement of current laws and improving existing laws where necessary.
- Ensures a balanced regulatory approach to improving safety that applies cost-benefit principles.
- Protects and preserves Congressional authority by ensuring certain key rulemakings are not finalized until Congress has an opportunity to act.[5]

State Regulations

California Environmental Protection Agency

One of the primary State agencies that regulate hazardous materials is the CalEPA. CalEPA is authorized by the USEPA to enforce and implement certain federal hazardous materials laws and regulations. The California DTSC, a department of the CalEPA, protects California and Californians from exposure to hazardous waste, primarily under the authority of the RCRA and the California Health and Safety Code.[6] The DTSC requirements include the need for written programs and response plans, such as Hazardous Materials Management Plans. The DTSC programs include dealing with aftermath clean-ups of improper hazardous waste management, evaluation of samples taken from sites, enforcement of regulations regarding use, storage, and disposal of hazardous materials, and encouragement of pollution prevention.

California Division of Occupational Safety and Health

Like OSHA at the federal level, the California Division of Occupational Safety and Health (CalOSHA) is the responsible State-level agency for ensuring workplace safety. CalOSHA assumes primary responsibility for the adoption and enforcement of standards regarding workplace safety and safety practices. In the event that a work site is contaminated, a Site Safety Plan must be crafted and implemented to protect the safety of workers. Site Safety Plans establish policies, practices, and procedures to prevent the exposure of workers and members of the public to hazardous materials originating from the contaminated site or building.

California Office of Emergency Services

The California Office of Emergency Services (Cal OES) was established as part of the Governor's Office on January 1, 2009. It was created pursuant to Assembly Bill 38, which merged the duties, powers, purposes, and responsibilities of the former Governor's Emergency Management Agency with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall State agency response to major disasters in support of local government. The agency is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, humanmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

[5] Pipeline and Hazardous Materials Safety Administration, March 2019, *Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011*. https://www.phmsa.dot.gov/legislative-mandates/pipeline-safety-act/pipeline-safety-regulatory-certainty-and-job-creation-act

[6] Hazardous Substance Account, Chapter 6.5 (Section 25100 et seq.) and the Hazardous Waste Control Law, Chapter 6.8 (Section 25300 et seq.) of the Health and Safety Code.

California Department of Transportation and California Highway Patrol

Caltrans and the CHP are the two State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies. Caltrans manages more than 50,000 miles of California's highways and freeways, provides intercity rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on highways, freeways, and intercity rail lines.

The CHP enforces hazardous materials and hazardous waste labeling and packing regulations designed to prevent leakage and spills of materials in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. In addition, the State of California regulates the transportation of hazardous waste originating or passing through the State.

Common carriers are licensed by the CHP, pursuant to Section 32000 of the California Vehicle Code. This section requires licensing every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards. Common carriers conduct a large portion of the business in the delivery of hazardous materials.

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is found in Title 24, Part 2 of the California Code of Regulations. The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis and may be subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the typical fire safety requirements of the CBC, including the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors and building materials; and the clearance of debris and vegetation near occupied structures in wildfire hazard areas. The City regularly adopts updates to the CBC under the San Rafael Municipal Code (SRMC) Chapter 12.100, Adopted Codes.

California Health and Safety Code

California Health and Safety Code Chapter 6.95 and California Code of Regulations Title 19, Section 2729, set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on site. A business that uses hazardous materials or a mixture containing hazardous materials must establish and implement a management plan if the hazardous material is handled in certain quantities.

Senate Bill 379

Senate Bill 379, approved October 8, 2015, requires all cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans upon the next revision beginning January 1, 2017. The bill requires the climate adaptation update to include a set of goals, policies, and objectives for their communities based on the vulnerability assessment, as well as implementation measures, including the conservation and implementation of natural infrastructure that may be used in adaptation projects. Specifically, the bill requires that upon the next revision of a general plan or local hazard mitigation plan (LHMP), the safety element is to be updated as necessary to address climate adaptation and resiliency strategies applicable to the city or county.

Regional Regulations

San Francisco Bay Regional Water Quality Control Board

The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board (SWRCB) and divided the State into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB). The San Francisco Bay RWQCB, Region 2, regulates water quality in the EIR Study Area. The San Francisco Bay RWQCB has the authority to require groundwater investigations and/or remedial action if the quality of groundwater or surface waters of the State are threatened.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products. The latter are typically the responsibility of the CalEPA and the California Air Resources Board. The BAAQMD is responsible for preparation of attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and issuance of permits for activities, including demolition and renovation activities affecting asbestos-containing materials (District Regulation 11, Rule 2) and lead (District Regulation 11, Rule 1).

Zero Waste Marin

Marin County Hazardous and Solid Waste, now known as Zero Waste Marin, is a joint powers authority agreement between Belvedere, Larkspur, Mill Valley, Novato, San Rafael, San Anselmo, Corte Madera, Fairfax, Ross, Tiburon, and Marin County established in 1996 to help Marin County residents and businesses meet the County's zero waste goal by 2025. This agency is responsible for coordinating recycling of solid waste and disposing of hazardous materials, in addition to providing information on household hazardous waste disposal.

Marin Household Hazardous Waste Facility

The City of San Rafael and Zero Waste Marin sponsor the Marin Household Hazard Waste Facility (MHHWF). Jointly operated with the SRFD, MHHWF provides residents and business owners with a method of disposing of hazardous waste.

Marin County Operational Area Emergency Recovery Plan

The *Marin County Operational Area Emergency Recovery Plan* (ERP), adopted in November 2012, establishes procedures and assigns responsibility to ensure the effective management of emergency recovery operations within the Marin County Operational Area, which includes the City of San Rafael. The ERP describes operational concepts relating to recovery, identifies components of recovery organization, and describes general responsibilities of the Marin County Office of Emergency Services (Marin OES). Recovery operations in a multi-jurisdictional incident are coordinated and managed by the Operational Area in accordance with the California Emergency Services Act.

Marin Operational Area Emergency Operations Plan

The *Marin Operational Area Emergency Operations Plan* (EOP), adopted in October 2014, establishes policies and procedures, in addition to assigning responsibilities to ensure the effective management of emergency operations within the Marin Operational Area. Cities and towns within the county participate in the Marin Operational Area coordination of emergency management activities. Emergency operations are split into four phases: Preparedness Phase, Response Phase, Recovery Phase, and Prevention/Mitigation Phase. The City of San Rafael coordinates with Marin OES to ensure emergency management functions meet the expectation of the City.

Marin County Multi-Jurisdictional Local Hazard Mitigation Plan

The Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP) was completed in November 2018 to assess risks posed by natural hazards and to develop a mitigation strategy for reducing the County's risks. Several jurisdictions and special districts participated in the creation of the MCM LHMP, including the City of San Rafael. The risks and mitigations in the MCM LHMP are broad and encompassing of the entirety of Marin County. The MCM LHMP incorporates each local jurisdictions individual LHMP as appendices to ensure jurisdiction-specific information supplements the vulnerability mitigation included in the MCM LHMP. The City of San Rafael LHMP is incorporated into the MCM LHMP as Appendix P. Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to hazards and hazardous materials are primarily in the Safety and Resilience Element. As part of the proposed project, some existing General Plan policies would be amended, substantially changed, or new policies would be added. Many of these changes are intended to incorporate LHMP initiatives adopted in November 2017 into the General Plan. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.9.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives pertaining to hazards and hazardous materials. The SRMC is organized by title, chapter, and section. Most provisions related to impacts from hazards and hazardous materials are in Title 4, Fire, Title 12, Building Regulations, and Title 14, Zoning, as follows:

- Title 4, Fire: This title adopts the 2018 California Fire Code and 2019 International Fire Code, which includes several provisions regarding the storage and disposal of hazardous materials. Such provisions include storage of flammable and combustible liquids in aboveground tanks and the storing and dispensing of liquified petroleum gas and other flammable liquids and gases.
- Chapter 12.100, Adopted Codes: The City of San Rafael has adopted the CBC with certain modifications as Section 12.12.101 et seq.
- Chapter 14, Site and Use Regulations. Section 14.16.180, Hazardous Soils Conditions, requires new development on lots filled prior to 1974 used for auto service uses, industrial uses, or other land uses which may have involved hazardous materials to be evaluated for the presence of toxic or hazardous materials prior to development approvals. The SRMC also requires the submittal of a Phase 1 Environmental Site Assessment on non-residential sites that are proposed for residential use.

San Rafael Local Hazard Mitigation Plan

The San Rafael LHMP, adopted in November 2017, is a guide to hazard mitigation within San Rafael and serves as a tool to help decision makers direct hazard mitigation activities and resources. In the context of an LHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including fire and other natural hazards. A more detailed description of the LHMP, relating to wildland fires, is provided in Chapter 4.18, Wildfire, of this Draft EIR.

San Rafael Wildfire Prevention and Protection Action Plan

The *San Rafael Wildfire Prevention and Protection Action Plan* (WPPAP), conditionally approved in March 2019 and formally adopted in August 2020 following review by a Steering Committee, provides a series of prescriptions, programs, and ordinance updates needed to make the city more fire and disaster resistant. The WPPAP is designed to serve as a master plan and framework to address all phases of disaster response: mitigation, preparedness, response, and recovery. The WPPAP considers and incorporates local, county, regional, and national findings and best practices. More information on the WPPAP can be found in Chapter 4.18, Wildfire, of this Draft EIR.

4.9.1.2 EXISTING CONDITIONS

EIR Study Area

Schools

As previously described in Chapter 4.3, Air Quality, of this Draft EIR, some land uses are considered more sensitive to airborne hazardous materials than others due to the types of population groups or activities involved. Because sensitive population groups include children, the California Environmental Quality Act (CEQA) requires an evaluation of hazardous emissions or handling hazardous materials, substances, or

waste within 0.25 miles of an existing or proposed school, private or public. The San Rafael City Schools District operates 13 schools in the city, including eight elementary schools, one K–8 school, one middle school, and three high schools. There are also approximately 64 private schools within the city of which four are in the Downtown Precise Plan Area. These schools are made up of Head Start programs and daycares, as well as elementary schools, middle schools, and high schools.[7] There are currently no known proposals for new schools in the EIR Study Area.

Hazardous Materials Sites

California Government Code Section 65962.5 requires the CalEPA to compile, maintain, and update specified lists of hazardous material release sites. CEQA (California Public Resources Code Section 21092.6) requires the lead agency to consult the lists compiled pursuant to Government Code Section 65962.5 to determine whether the project and any alternatives are identified on any of the following lists:

- USEPA NPL. The USEPA's National Priorities List (NPL) includes all sites under the USEPA's Superfund program, which was established to fund cleanup of contaminated sites that pose risks to human health and the environment.
- USEPA CERCLIS and Archived Sites. The USEPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) includes a list of 15,000 sites nationally identified as hazardous sites. This would also involve a review for archived sites that have been removed from CERCLIS due to No Further Remedial Action Planned status.
- USEPA RCRIS (RCRA Info). The Resource Conservation and Recovery Act Information System (RCRIS or RCRA Info) is a national inventory system about hazardous waste handlers. Generators, transporters, handlers, and disposers of hazardous waste are required to provide information for this database.
- DTSC Cortese List. The DTSC maintains the Hazardous Waste and Substances Sites (Cortese) list as a planning document for use by the State and local agencies to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. This list includes the Site Mitigation and Brownfields Reuse Program Database.
- DTSC HazNet. The DTSC uses this database to track hazardous waste shipments.
- SWRCB LUSTIS. Through the Leaking Underground Storage Tank Information System, the SWRCB maintains an inventory of Underground Storage Tanks (USTs) and leaking USTs (LUST), which tracks unauthorized releases.

The required lists of hazardous material release sites are commonly referred to as the "Cortese List," named after the legislator who authored the legislation. Because the statute was enacted more than 20 years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented and, in some cases, the information required in the Cortese List does not exist. Those requesting a copy of the Cortese Lists are now referred directly to the appropriate information resources contained on websites hosted by the boards or departments referenced in the statute, including DTSC's online EnviroStor database and the SWRCB's online GeoTracker database. These two databases include hazardous material release sites, along with other categories of sites or facilities specific to each agency's jurisdiction.

[7] GreatSchools.org, 2019. California > San Rafael. https://www.greatschools.org/california/san-rafael/schools/?sort=name&st%5B%5D=private, accessed on September 3, 2019.

A search of the online EnviroStor and GeoTracker databases on May 20, 2019, identified 173 hazardous materials sites within the EIR Study Area excluding the hazardous materials sites in the Downtown Precise Plan Area, which are discussed in detail under the subheading "Downtown Precise Plan" later in this chapter). Of the 173 sites, 31 are designated as active and the remaining 142 sites are designated as "closed" or "completed – case closed."[8] The 31 active hazardous materials sites are shown in Table 4.9-1 and on Figure 4.9-1, while the remaining 142 sites are listed in Appendix G, Hazardous Materials Data, of this Draft EIR. The majority of the 31 listed sites are classified as LUST sites, which are primarily associated with gasoline and diesel fuels.

Airport Hazards

The EIR Study Area is not located within an airport land use plan area. The San Rafael Airport is a private airport in the northeastern EIR Study Area. The nearest public airport is the Marin County Airport, located approximately 8 miles to the north of the EIR Study Area.[9]

Emergency Response and Evacuation Planning Areas

As described in Section 4.9.1.1, Regulatory Framework, the EIR Study Area is within the planning areas of the Marin Operational Area EOP, the Marin County Operational Area ERP, and the San Rafael LHMP.

Wildfire Hazards

A more robust discussion of wildland fire hazards is provided in Chapter 4.18, Wildfire, of this Draft EIR. As described in Chapter 4.18, the EIR Study Area contains land within a State Responsibility Area and Local Responsibility Area (see Figure 4.18-1). The portion of the EIR Study Area within the State Responsibility Area is designated as a Moderate Fire Hazard Severity Zone. The land within the Local Responsibility Area is designated as Moderate or High Fire Hazard Severity Zones. There are no lands in the EIR Study Area classified by the State of California as being a Very High Fire Hazard Severity Zone. As shown on Figure 4.18-2, approximately 6,000 acres are within the wildland-urban interface (WUI), which is defined as any area where structures and other human development meet or intermingle within wildland vegetation.[10]

Downtown Precise Plan Area

Schools

Four schools and daycares are located within the Downtown Precise Plan Area and 13 schools and daycares are within 0.25 miles of the Downtown Precise Plan Area border. There are currently no known proposals for new schools in the Downtown Precise Plan Area.

[8] Eleven of the 31 sites listed are located at the same address or are associated with a former military installation at the end of Smith Ranch Road.

[9] Caltrans, Division of Aeronautics Maps and Data, Caltrans Aviation GIS Data, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=32c3cbe24491427d872e2fec173a4b22, accessed on April 23, 2019.

[10] Cal OES. 2018. California State Hazard Mitigation Plan.

HAZARDS AND HAZARDOUS MATERIALS

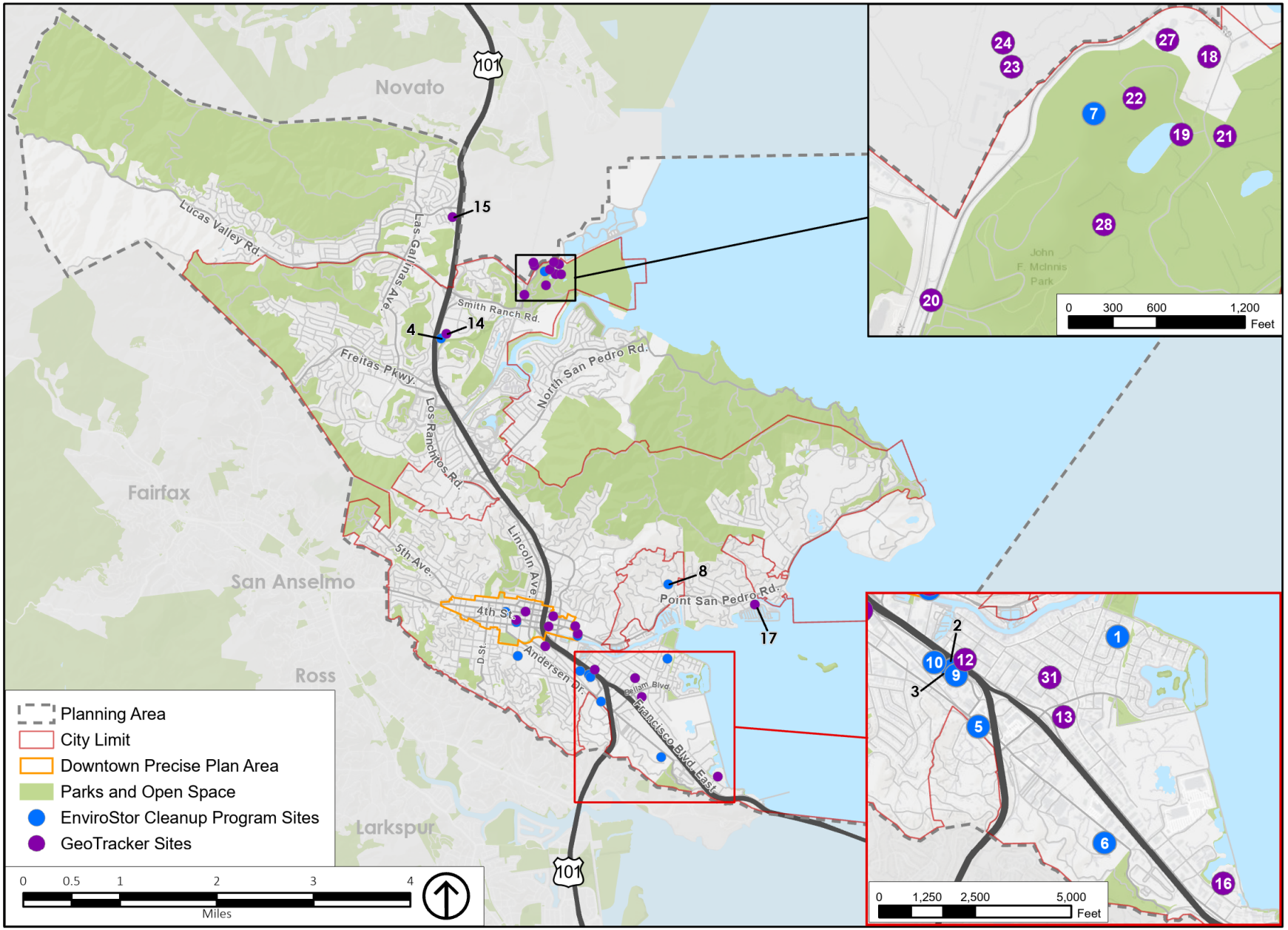
TABLE 4.9-1 ACTIVE HAZARDOUS MATERIAL SITES IN THE EIR STUDY AREA (EXCLUDING THE DOWNTOWN PRECISE PLAN AREA)

Map ID	Site Name	Address	Site Type	Potential Contaminants	Cleanup Status
Envirostor Cleanup Program Sites					
1.	Bahia Vista Elementary School	125 Bahia Way	School Investigation	No contaminants found	No Action Required
2.	Baxter Court Property	714 A Francisco Boulevard West	Tiered Permit	Chromium, PCE, TCE	Certified O&M - Land Use Restrictions Only
3.	Baxters Court Area	Baxters Court	State Response	None specified	Refer: RCRA
4.	Fairchild Semiconductor Corp	4300 Redwood Highway	Corrective Action	VOCs	Refer: RWQCB
5.	Marin Radiator & Auto Air Conditioning	786 Andersen Drive	Evaluation	Contaminated soil	Inactive - Needs Evaluation
6.	PG&E Utility Corporation Yard	1220 Andersen Drive	Evaluation	PCBS	Inactive - Needs Evaluation
7.	San Francisco Nike Battery 93 (J09CA0944)	—	Military Evaluation	None specified	Refer: RWQCB
8.	San Rafael BIV Area	—	Military Evaluation	None specified	No Further Action
9.	Specification Chromium Corporation	712 Francisco Boulevard	Tiered Permit	None specified	No Further Action
10.	Specification Chromium Corporation	14 Baxters Court	Evaluation	Cyanide, Metals, Uncategorized	Inactive - Needs Evaluation
11.	The Car Shop	616 Lindaro Street	Evaluation	Lead	No Further Action
GeoTracker Sites					
12.	7 Hoag Street	7 Hoag Street	Cleanup Program Site	None specified	Open
13.	City Of San Rafael Fire Station No.4	46 Castro Avenue	Cleanup Program Site	None specified	Open - Inactive
14.	Former Fairchild Semiconductor	4300 Redwood Highway	Cleanup Program Site	VOCs	Open - Verification Monitoring - Land Use Restrictions
15.	Former Prosperity Cleaners	187 Marinwood Avenue	Cleanup Program Site	DCE, PCE, TCE, Vinyl chloride	Open - Assessment & Interim Remedial Action
16.	Ghilotti; Barbara Fasken Trust	200 Morphew Street	Cleanup Program Site	Gasoline	Open - Inactive
17.	Loch Lomond Marina [a]	261 Loch Lomond Drive	Cleanup Program Site	Benzene, DCE, Ethylbenzene, Gasoline, Other petroleum, PCE, Toluene, TPH, Vinyl chloride, Xylene	Open - Assessment & Interim Remedial Action
18.	Los Gallinas Sanitary District	300 Smith Ranch Road	Cleanup Program Site	TPH, Waste oil	Open - Inactive
19.	Nike Battery 93, Sf (J09ca094400) - Aoi 1 S-112 Electrical Power Plant Ust	290 Smith Ranch Road	Military UST Site	None specified	Open - Eligible For Closure
20.	Nike Battery 93, Sf (J09ca094400) - Aoi 10 S-411 Electrical Power Plant Ast	290 Smith Ranch Road	Military Cleanup Site	None specified	Open - Eligible For Closure

TABLE 4.9-1 ACTIVE HAZARDOUS MATERIAL SITES IN THE EIR STUDY AREA (EXCLUDING THE DOWNTOWN PRECISE PLAN AREA)

Map ID	Site Name	Address	Site Type	Potential Contaminants	Cleanup Status
21.	Nike Battery 93, Sf (J09ca094400) - Aoi 2 - S-131 Missile Assembly And Test Building	290 Smith Ranch Road	Military UST Site	Diesel, Xylene	Open - Eligible For Closure
22.	Nike Battery 93, Sf (J09ca094400) - Aoi 3 S-158 Ready Room Ust	291 Smith Ranch Road	Military UST Site	None specified	Open - Eligible For Closure
23.	Nike Battery 93, Sf (J09ca094400) - Aoi 4 S-216 Administrative Area	290 Smith Ranch Road	Military UST Site	TPH, Xylene	Open - Eligible For Closure
24.	Nike Battery 93, Sf (J09ca094400) - Aoi 5 S-217 Ust, Administrative Area	290 Smith Ranch Road	Military UST Site	Diesel	Open - Eligible For Closure
25.	Nike Battery 93, Sf (J09ca094400) - Aoi 6 S-218 Ust (And Fuel Line), Administrative Area	290 Smith Ranch Road	Military UST Site	None specified	Open - Eligible For Closure
26.	Nike Battery 93, Sf (J09ca094400) - Aoi 7 S-219 Ust Administrative Area	290 Smith Ranch Road	Military UST Site	Diesel	Open - Eligible For Closure
27.	Nike Battery 93, Sf (J09ca094400) - Aoi 8 Radar Tower Ust S-418	290 Smith Ranch Road	Military UST Site	None specified	Open - Eligible For Closure
28.	Nike Battery 93, Sf (J09ca094400) - Aoi 9 S-213 Enlisted Men's Barracks	290 Smith Ranch Road	Military Cleanup Site	None specified	Open - Eligible For Closure
29.	Proshop Inc.	658 Irwin Street	Cleanup Program Site	Diesel, Waste oil	Open - Site Assessment
30.	San Rafael City Schools Maintenance Facility	38 Union Street	LUST Cleanup Site	Benzene, Gasoline, Toluene	Open - Assessment & Interim Remedial Action
31.	Warnecke Property	62-68 Belvedere Street	Cleanup Program Site	TPH	Informational Item

Notes: Sites with a cleanup status of "closed" or "completed – case closed" and are included in Appendix G, Hazardous Materials Data, of this Draft EIR.
[a] Loch Lomond Marina has one open site (former dry cleaners) and one closed site (former gas station which has been remediated).
Source: Department of Toxic Substance Control (DTSC) EnviroStor 2019 and State Water Resources Control Board (SWRCB) GeoTracker 2019.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.9-1
Active Hazardous Materials Sites

Hazardous Materials Sites

The search of the online EnviroStor and GeoTracker databases conducted on May 20, 2019, identified 39 hazardous materials sites within the Downtown Precise Plan Area. Of the 39 hazardous materials sites, there are eight active sites that are listed in Table 4.9-2 and shown on Figure 4.9-2. The remaining 31 sites have a designated cleanup status as "closed" or "completed – case closed" and are listed in Appendix G, Hazardous Materials Data, of this Draft EIR. The majority of listed sites are classified as cleanup sites, and most are associated with gasoline and diesel.

Airport Hazards

The Downtown Precise Plan Area, is not located within an airport land use plan area.

Emergency Response and Evacuation Planning Areas

As described in Section 4.9.1.1, Regulatory Framework, the EIR Study Area, including the Downtown Precise Plan Area is within the planning areas of the Marin Operational Area EOP, the Marin County Operational Area ERP, and the San Rafael LHMP.

Wildfire Hazards

A more robust discussion of wildland fire hazards is provided in Chapter 4.18, Wildfire, of this Draft EIR. The Downtown Precise Plan Area contains both high and moderate fire hazard severity zones in the northern portion of the area (see Figure 4.18-3). The northern, western, and southwestern areas of the Downtown Precise Plan Area are within the WUI (see Figure 4.18-4).

4.9.2 STANDARDS OF SIGNIFICANCE

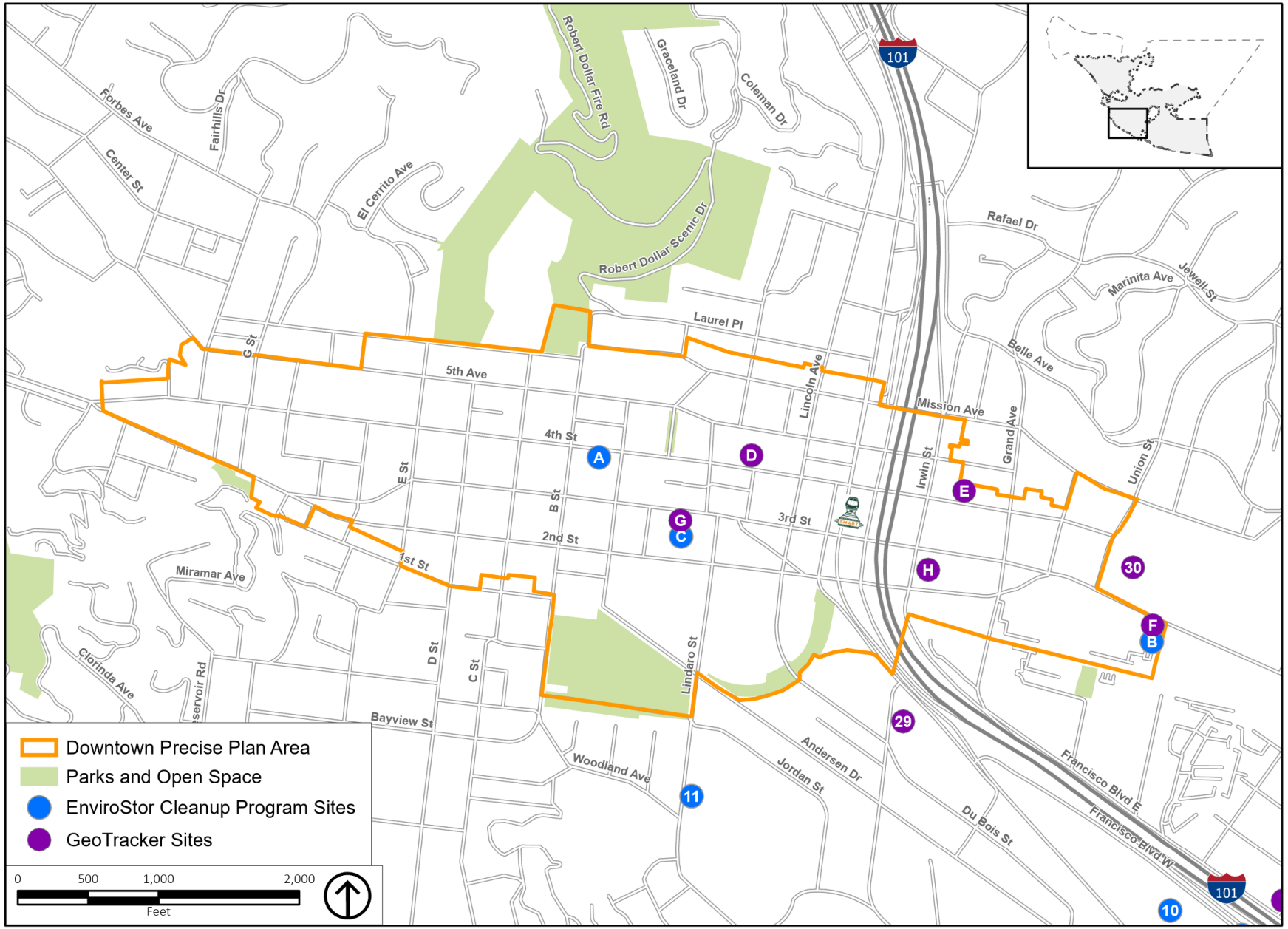
Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in a significant impact related to hazards and hazardous materials if it would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
3. Emit hazardous emissions or handle hazardous materials, substances or waste within 0.25 miles of an existing or proposed school.
4. Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.
8. Result in significant cumulative impacts related to hazards and hazardous materials

TABLE 4.9-2 RELEVANT HAZARDOUS MATERIAL SITES IN THE DOWNTOWN PRECISE PLAN AREA

Map ID	Site Name	Address	Site Type	Potential Contaminants	Cleanup Status
Envirostor Cleanup Program Sites					
A.	Former Maxim Gas Plant Office	4th Street Between A & B Streets	State Response	No contaminants found	No Further Action
B.	Marin-Sonoma Mosquito Abatement District	201 3rd Street	Voluntary Cleanup	Benzene, DDT, Diesel, Xylenes	Certified / Operation & Maintenance
C.	PG&E, San Rafael MGP (San Rafael Corporate Center)	2nd Street and Anderson Drive on both sides of Avenue and Lindaro Street	Voluntary Cleanup	Contaminated soil, Lead, PAHS, VOCs	Active
GeoTracker Sites					
D.	Former Grand Auto Store #9	850 4th Street	Cleanup Program Site	None specified	Open - Inactive
E.	Marin Cleaners	520 4th Street	Cleanup Program Site	Other chlorinated hydrocarbons, PCE, TCE	Open - Remediation
F.	Marin/Sonoma Mosquito (Former)	201 3rd St	Cleanup Program Site	Diesel	Open - Verification Monitoring
G.	PG&E - MGP - San Rafael	Listed as Third St And Brooks Ave, but known as the 999 3rd St site	Cleanup Program Site	Petroleum, Fuels, Soils, Polynuclear aromatic hydrocarbons	Open - Remediation - Land Use Restrictions
H.	Shell	834 Irwin St	LUST Cleanup Site	Diesel, Gasoline, Waste oil	Open - Verification Monitoring

Notes: Sites with a cleanup status of "closed" or "completed – case closed" and are included in Appendix G, Hazardous Materials Data, of this Draft EIR.
Source: Department of Toxic Substance Control (DTSC) EnviroStor 2019 and State Water Resources Control Board (SWRCB) GeoTracker 2019.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.9-2
Downtown Active Hazardous Materials Sites

4.9.3 IMPACT DISCUSSION

HAZ-1	**Implementation of the proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

General Plan 2040

Implementation of the proposed General Plan 2040 would facilitate potential new development, including residential, mixed-use, commercial, industrial, and recreational uses, within San Rafael. However, there are no changes to the amount of land that is designated for industrial or light industrial uses that generate substantial quantities of hazardous materials and therefore the routine transport of hazardous materials. While potential future development under the proposed General Plan 2040 could result in the use and storage of hazardous materials, including common cleaning products, building maintenance products, paints and solvents, fertilizers and pesticides used in landscaping and yard care, along with other similar items. In general, these potentially hazardous materials would not be of the type to occur in sufficient quantities to pose a significant hazard to public health and safety or to the environment. As described in Section 4.9.1.1, Regulatory Framework, future development involving the routine transport or use of hazardous materials during construction, are subject to a variety of federal, State, regional, and local regulations. All hazardous materials to be transported must remain in compliance with DOT regulations. Potential future development would be subject to regulatory programs such as those overseen by the RWQCB and the DTSC. Non-residential development that would require the use of hazardous materials regulated by federal, State, regional, and local agencies would issue permits for the use of the hazardous materials, which would be monitored and routinely updated by the responsible agency depending on the type of material. These agencies also require applicants for development of potentially contaminated properties to perform investigation and cleanup if the site is found to be contaminated with hazardous substances. Additionally, Marin County Waste Management Division (WMD) has substantial regulations concerning hazardous materials in the EIR Study Area. For example, Marin County WMD requires the development and approval of Hazardous Materials Management Plans demonstrating safe storage and handling of hazardous materials and requires inspections of such handling and storage.

Potential future development that would introduce hazardous materials to a site, or that would generate hazardous waste, would be regulated pursuant to federal, State, regional, and local laws. Compliance with these regulations would minimize the potential for a significant adverse effect on the environment due to the routine use, transport, and disposal of hazardous materials.

The proposed Conservation and Climate Change (C) and Safety and Resilience (S) Elements contain goals, policies, and programs that require local planning and development decisions to require best hazardous materials practices as part of development. The following goals, policies, and programs would serve to minimize exposure to hazardous materials from routine transport, use, or disposal in the EIR Study Area.

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

- Policy C-3.5: Groundwater Protection. Protect San Rafael's groundwater from the adverse effects of urban uses. Encourage opportunities for groundwater recharge to reduce subsidence and water loss, and support water-dependent ecosystems.
  - Program C-3.5A: Underground Tank Remediation. Continue efforts to remediate underground storage tanks and related groundwater hazards. Avoid siting new tanks in areas where they may pose hazards, including areas prone to sea level rise.

Goal S-5: Protection from Hazardous Materials. Protect those who live, work, and visit San Rafael from risks associated with hazardous materials.

- Policy S-5.1: Hazardous Waste Management. Support State, regional, countywide and local programs to responsibly manage hazardous waste consistent with protection of public health, welfare, safety and the environment.
- Policy S-5.2: Hazardous Materials Storage, Use and Disposal. Enforce regulations regarding proper storage, labeling, use and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.
  - Program S-5.2A: CUPA Program. Continue to participate in the Certified Unified Program Agency (CUPA) program. The CUPA's responsibilities shall include overseeing the investigation and closure of contaminated underground storage tank sites.
- Policy S-5.4: Development on Formerly Contaminated Sites. Ensure that the necessary steps are taken to clean up residual hazardous materials on any contaminated sites proposed for redevelopment or reuse. Properties that were previously used for auto service, industrial operations, agriculture, or other land uses that may have involved hazardous materials should be evaluated for the presence of toxic or hazardous materials in the event they are proposed for redevelopment with a sensitive land use.
  - Program S-5.4A: Use of Environmental Databases in Development Review. When development is proposed, use environmental and hazardous materials data bases (such as the State GeoTracker data base) to determine whether the site is contaminated as a result of past activity. As appropriate, require studies and measures to identify and mitigate identified hazards.
  - Program S-5.4B: Hazardous Soils Clean-Up. Work with appropriate agencies to require remediation and clean-up prior to development of sites where hazardous materials have impacted soil or groundwater. The required level of remediation and clean-up shall be determined by the Certified Unified Program Agency based on the intended use of the site and health risk to the public.
- Policy S-5.5: Transportation of Hazardous Materials. Enforce Federal, State and Local requirements and standards regarding the transportation of hazardous materials. As appropriate, support legislation that strengthens these requirements.
  - Program S-5.5A: Safe Transport of Hazardous Materials. Support California Highway Patrol's efforts to ensure the safe transport of hazardous materials.
  - Program S-5.5B: Pipeline Safety. Coordinate with regulatory agencies and utilities to ensure the safety of all fuel pipelines and ensure that maintenance and operating conditions are fully compliant with all state and federal safety regulations

- Policy S-5.6: Hazardous Building Materials. Reduce the presence of hazardous building materials by implementing programs to mitigate lead, friable asbestos, and other hazardous materials where they exist today and by limiting the use of hazardous building materials in new construction. If such materials are disturbed during building renovation or demolition, they must be handled and disposed in a manner that protects human health and the environment.
- Policy S-5.7: Household Hazardous Waste. Promote education about the safe disposal of household hazardous waste, such as motor oil and batteries, including the location of designated household hazardous waste disposal sites.

As part of the City's project approval process, potential future development and redevelopment would be required to comply with existing federal, State, regional, and local regulations, including the proposed General Plan goals, policies, and programs that have been prepared to minimize impacts related to hazardous materials. Compliance with these regulations would minimize the risk of an adverse effect on the environment, through the routine use, transport, and disposal of hazardous materials, and therefore impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Similar to potential development in the remainder of the EIR Study Area, potential future development in the Downtown Precise Plan Area could occur on sites with known hazardous materials and/or potentially hazardous building materials that would require cleanup prior to any development; thus, the transport of hazardous materials could occur during future remediation and/or construction activities. Any remediation or construction activities that result in the transport and/or disposal of hazardous materials would be required to comply with all regulations applicable to potential future development under the proposed General Plan 2040. Therefore, it is anticipated that there would be no exposure of hazardous materials during routine transport and/or disposal of such materials.

The proposed types of uses that could occur in the Downtown Precise Plan Area are office, commercial, civic, and residential land uses and, therefore, would generally not include manufacturing or research processes that generate substantial quantities of hazardous materials. As with the proposed General Plan 2040, any potential future development that would introduce hazardous materials to a site, or that would generate hazardous waste, would be regulated pursuant to federal, State, regional, and local laws. Compliance with these regulations would minimize the potential for a significant adverse effect on the environment due to upset and accident involving the use of hazardous materials.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts from hazardous materials; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not result in impacts related to the routine transport, use, and disposal of hazardous materials and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-2	**Implementation of the proposed project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.**

General Plan 2040

The proposed General Plan 2040 would facilitate potential new development, including residential, mixed-use, commercial, industrial, and recreational uses, within San Rafael. Some potential future development could occur on sites that are contaminated with hazardous materials, which includes sites that are active, undergoing verification monitoring, and/or undergoing remediation action, as indicated in Table 4.9-1. Construction of new buildings could result in the release of hazardous soil-based materials into the environment during site grading and excavation. Likewise, demolition of existing structures could potentially result in release of hazardous building materials (e.g., asbestos, lead paint, etc.) into the environment. Potential future development could also result in the use of hazardous materials during project operation, such as cleaning solvents, fertilizers, pesticides, and other materials used in the regular maintenance and operation of certain developments.

Potential future development under the proposed project would be required to comply with existing regulations as part of the City's project approval process, as described in Section 4.9.1.1, Regulatory Framework, of this chapter. The City actively monitors compliance with federal, State, regional, and local regulations, including SRMC Chapter 14.16.180, Hazardous Soil Conditions, which requires new development on lots filled prior to 1974, that may have involved hazardous materials, be evaluated for the presence of toxic or hazardous materials prior to development approvals. Compliance with the required Stormwater Pollution Prevention Plan and best management practices (see Chapter 4.10, Hydrology and Water Quality, for additional detail), as well as the implementation of the General Plan goals, policies, and programs that have been prepared to minimize impacts related to accidents and spills of hazardous materials listed in Impact Discussion HAZ-1, would also ensure future development under the proposed General Plan 2040 would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. In addition, as described under Impact Discussion HAZ-4, implementation of Mitigation Measure HAZ-4 would reduce the accidental release of hazardous materials to the public and the environment from sites with known hazardous material contamination. Therefore, the impact is *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Potential new development, including residential, mixed-use, and commercial uses would occur in the Downtown Precise Plan Area. Same as the proposed General Plan 2040 discussed previously, potential future development in the Downtown Precise Plan Area could occur on sites that are contaminated with hazardous materials, which includes sites that are active, undergoing verification monitoring, and/or undergoing remediation action, as indicated in Table 4.9-2. Due to the age of the existing buildings in the

Downtown Precise Plan Area, these buildings may contain asbestos-containing materials or lead-based paint, which were not regulated in construction until the early 1970s. Any remediation, construction and demolition activities, or routine use of, hazardous materials, would be required to comply with all federal, State, regional, and local regulations also applicable to potential future development in the remainder of the city. Furthermore, the mitigation measures identified in Impact Discussion HAZ-4 would also reduce impacts from airborne hazardous materials.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts from hazardous materials; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not result in a hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of these materials into the environment and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-3	**Implementation of the proposed project could emit hazardous emissions or handle hazardous materials, substances or waste within 0.25 miles of an existing or proposed school.**

General Plan 2040

It is possible that implementation of the proposed General Plan 2040 could result in potential future development that would involve hazardous materials, either through construction or operation of new development, within 0.25 miles of an existing or proposed school. As described under Impact Discussions HAZ-1 and HAZ-2, while some potential future development under the proposed General Plan 2040 could be reasonably expected to handle hazardous materials or generate hazardous emissions, the storage, use, and handling of these materials would be subject to existing federal, State, and local regulations. Potential future development would be required to comply with existing regulations as described in Section 4.9.1.1, Regulatory Framework, and reiterated in Impact Discussions HAZ-1 and HAZ-2, including General Plan goals, policies, and programs that have been prepared to minimize impacts as a result of hazardous materials. These regulations would ensure requirements regarding use or transport of hazardous materials are met prior to construction, which includes buffer zones between schools and hazardous materials sites.

The proposed Safety and Resilience (S) Element contains additional provisions that require local planning and development decisions to ensure hazardous materials sites do not impact adjacent sites that contain sensitive land uses or populations in the EIR Study Area.

Goal S-5: Protection from Hazardous Materials. Protect those who live, work, and visit San Rafael from risks associated with hazardous materials.

- Policy S-5.3: Protection of Sensitive Uses. Provide safe distances between areas where hazardous materials are handled or stored and sensitive land uses such as schools, public facilities, and

residences. When the location of public improvements in such areas cannot feasibly be avoided, effective mitigation measures will be implemented.

- Program S-5.3A: Inventory of Existing Hazards. Work with State and County GIS data to identify existing hazardous materials permit holders near schools, evaluate relative risk levels, and determine actions in the event of an accidental release. This data should be used to evaluate risk levels and develop measures to ensure the safety of students and school staff where necessary.
- Program S-5.3B: Reducing Hazards Near Schools. Consistent with CEQA and the California Public Resource Code 21151.4, limit activities with the potential to release hazardous materials within one-quarter mile of schools.

Compliance with federal, State, regional, and local requirements regarding ongoing environmental review and management of hazardous materials would ensure that potential future development under the proposed General Plan 2040 would not result in a significant impact to adjacent land uses that may contain sensitive receptors. Furthermore, implementation of Mitigation Measures HAZ-4 below would reduce impacts from sites with known hazardous material contamination, and Mitigation Measure AIR-3.1b, in Chapter 4.3, Air Quality, of this Draft EIR, would reduce impacts from airborne hazardous materials during construction activities near sensitive land use projects (e.g., hospitals, nursing homes, daycare centers) in San Rafael. Compliance with existing requirements and the recommended mitigation measures, would therefore reduce the potential for emission of hazardous materials within 0.25 miles of a school during construction and operation of future development, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As with the proposed General Plan 2040, potential future development in the Downtown Precise Plan Area could occur on sites that require the removal of hazardous materials during construction, or the use of hazardous materials during project operation that are within 0.25 miles of existing schools. However, as discussed above, any remediation, construction activities, or routine use of, hazardous materials, would be required to comply with all federal, State, regional, and local regulations, including the proposed General Plan 2040 goals, policies, and programs listed in Impact Discussion HAZ-1, as well as Mitigation Measures HAZ-4 and AIR-3.1b, which reduce the risk of potential release of hazardous materials within 0.25 miles of an existing or proposed school.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts from hazardous materials; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not result in a hazardous materials impact within 0.25 miles of an existing or proposed school and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-4	**Implementation of the proposed project could be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.**

General Plan 2040

As shown in Table 4.9-1, a number of hazardous materials sites are listed on databases compiled pursuant to Government Code Section 65962.5. These include 31 sites located in the greater EIR Study Area, outside of the Downtown Precise Plan Area, designated as active. Although implementation of the proposed General Plan 2040 anticipates that potential future development and redevelopment could occur on existing vacant or infill sites in urban areas, the location of potential future development is unknown and may occur on sites included in the database in Table 4.9-1. As discussed in Impact Discussions HAZ-1 through HAZ-3, construction on a site listed in the database could result in the release of potentially hazardous soil-based materials into the environment during site grading and excavation operations. Further, demolition of existing structures could potentially result in the release of hazardous building materials (e.g., asbestos, lead-based paint) into the environment. Use of hazardous materials on newly developed properties after construction could potentially include cleaning solvents, fertilizers, pesticides, and other materials used in the regular maintenance and operation of future development.

As described in Impact Discussions HAZ-1 through HAZ-3, potential future development that would occur under implementation of the proposed General Plan 2040 would be required to comply with all federal, State, regional, and local regulations regarding the safe handling, transport, disposal, and use of hazardous materials. Further, the proposed General Plan 2040 includes specific goals, policies, and programs that would further require land planning and development decisions to reduce the impacts that potential future development with known hazardous materials, or the use of such materials, could have on the environment and the public. However, because hazardous materials sites exist in the EIR Study Area, as indicated in Table 4.9-1, it is possible that future development could occur on a designated hazardous materials site, which could result in the direct contact, inhalation, or ingestion of hazardous materials that could potentially cause adverse health impacts to construction workers, future site inhabitants, and nearby sensitive receptors. The preparation of project-specific management plans and studies would require mitigation that would protect construction workers, future site inhabitants, and nearby sensitive receptors.

The severity of health effects would depend on the contaminant(s), concentration, use of personal protective equipment during construction, and duration of exposure. Site specific Environmental Site Management Plan for sites with known contamination would summarize soil and groundwater analytical data collected on the project site during past investigations; identify management options for excavated soil and groundwater, if contaminated media are encountered during deep excavations; and identify monitoring, irrigation, or other wells requiring proper abandonment in compliance with local, State, and federal laws, policies, and regulations. The ESMP would include measures for identifying, testing, and managing soil and groundwater suspected of or known to contain hazardous materials. The ESMP would:

- Provide procedures for evaluating, handling, storing, testing, and disposing of soil and groundwater during project excavation and dewatering activities, respectively;

- Describe required worker health and safety provisions for all workers potentially exposed to hazardous materials in accordance with State and federal worker safety regulations;
- and Designate personnel responsible for implementation of the ESMP.

For sites with potential residual contamination in soil or groundwater that are planned for redevelopment with an overlying occupied building, a soil vapor intrusion assessment would indicate the potential for significant vapor intrusion into an occupied building, project design shall include vapor controls or source removal, as appropriate, in accordance with regulatory agency requirements. Soil vapor mitigations or controls could include vapor barriers, passive venting, and/or active venting.

Without site-specific evaluation for sites with known contamination, the disturbance and release of hazardous materials during earthwork activities, if present, could pose a hazard to construction workers, nearby receptors, and the environment, and impacts could be potentially *significant*.

Impact HAZ-4: Potential future development could result in construction and operation activities on sites with known hazardous materials and, as a result, create a significant hazard to the public or the environment.

Mitigation Measure HAZ-4: To ensure that construction on sites with known contamination pursuant to the lists compiled pursuant to Government Code Section 65962.5, which include, but are not limited to, the Department of Toxic Substance Control's online EnviroStor database and the State Water Resource Control Board's online GeoTracker database, do not result in or create a significant hazard to the public or the environment, the City shall adopt the following General Plan programs to support Policy S-5.4 (Development on Formerly Contaminated Sites) to be implemented as part of the project approval process:

- New Program: Environmental Site Management Plan. Require the preparation of an Environmental Site Management Plan (ESMP) in consultation with the San Francisco Bay Regional Water Quality Control Board and/or the Department of Toxic Substance Control, for development on sites with known contamination of hazardous materials pursuant to Government Code Section 65962.5, which include, but are not limited to, the Department of Toxic Substance Control's online EnviroStor database and the State Water Resource Control Board's online GeoTracker database.
- New Program: Soil Vapor Intrusion Assessment. For sites with potential residual contamination in soil or groundwater that are planned for redevelopment with an overlying occupied building, a soil vapor intrusion assessment shall be performed by a licensed environmental professional. If the results of the vapor intrusion assessment indicate the potential for significant vapor intrusion into an occupied building, project design shall include vapor controls or source removal, as appropriate, in accordance with regulatory agency requirements.

Significance with Mitigation: Less than significant.

Downtown Precise Plan

As shown in Table 4.9-2, a number of hazardous materials sites in the Downtown Precise Plan Area are listed on databases compiled pursuant to Government Code Section 65962.5. There are eight sites

specifically within the Downtown Precise Plan Area, which are currently active. The Downtown Precise Plan Area is considered urban and largely built out and all potential future development and redevelopment would therefore occur on existing vacant or infill sites. As with the proposed General Plan 2040, the specific location of future development is unknown and may occur on sites included in the database in Table 4.9-2. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts from hazardous materials; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area and impacts could be potentially *significant* without mitigation.

Significance with Mitigation: Less than significant.

HAZ-5	**Implementation of the proposed project could, for a project located within an airport land use plan, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.**

The EIR Study Area is not located within an airport land use plan area. A small private airport, the San Rafael Airport, is located in the northeastern corner of the EIR Study Area, and the nearest public airport, the Marin County Airport, is located approximately 8 miles north of the EIR Study Area. Given the distances from the nearest public or public use airports, the EIR Study Area would not be subject to any airport safety hazards. The proposed project would also not have an adverse effect on aviation safety or flight patterns. Therefore, there would be *no impact* related to public airport hazards.

Significance without Mitigation: Less than significant.

HAZ-6	**Implementation of the proposed project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

General Plan 2040

Potential future development in the city is projected to occur primarily on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Implementation of the proposed General Plan 2040 would not include land use changes that impair or physically interfere with the Marin Operational Area EOP, the Marin County Operational Area ERP, or the San Rafael LHMP.

The proposed Safety and Resilience (S) Element contains goals, policies, and programs that require local planning and development decisions to comply with existing emergency response and evacuation plans. The following goals, policies, and programs would serve to ensure potential future development in the EIR Study Area does not physically interfere with any such adopted plan.

Goal S-1: A Safer, More Resilient City. Minimize San Rafael's vulnerability to the impacts of environmental hazards and public health emergencies.

- Policy S-1.1: Local Hazard Mitigation Plan (LHMP). The San Rafael LHMP is adopted by reference into the General Plan.1 Policies and actions throughout the General Plan shall be consistent with the LHMP and support its goals and objectives.
- Policy S-1.4: Public Health Emergencies. Minimize the impact of public health emergencies, including pandemics, through effective planning, response, and recovery. The City will work with the County of Marin and other public and private partners to contain and control disease outbreaks, limit the number of illnesses and deaths, preserve the continuity of critical government functions, minimize social disruption, and reduce economic loss.
  - Program S-1.4A: LHMP Amendments. Amend local emergency preparedness documents as needed to address public health emergencies, including communication protocol, emergency operating procedures, and provisions for sheltering-in-place.

Goal S-6: Emergency Preparedness. Improve disaster preparedness, resiliency, response, and recovery. The City should enhance public outreach, awareness, education, and preparedness for all hazards to minimize losses.

- Policy S-6.1: Disaster Preparedness Planning. Conduct disaster prevention and preparedness planning in cooperation with other public agencies and public interest organizations.
  - Program S-6.1A: Mutual Aid Agreements. Continue, and where feasible expand, mutual aid agreements that augment public safety personnel in times of emergency.
  - Program S-6.1B: Standardized Emergency Management System (SEMS). Maintain a SEMS-based emergency plan that provides direction and identifies responsibilities after a disaster. Continue to train all City employees and officials in SEMS procedures.
  - Program S-6.1.C: Emergency Preparedness Plan. Update and publicize the City's emergency preparedness plan in conformance with State guidelines, including information on evacuation routes and shelter locations. The City's Emergency Operations Center Handbook also should be updated.

Potential future development under implementation of the proposed General Plan 2040 would be required to comply with existing regulations and adopted plans related to emergency response and evacuation as part of the City's project approval process. Compliance with applicable federal, State, and local regulations would ensure future development under the proposed General Plan 2040 would not interfere with existing adopted plans, such as the Marin Operational Area EOP, the Marin County Operational Area ERP, and the San Rafael LHMP, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As with the proposed General Plan 2040, potential future development under the Downtown Precise Plan would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized. Implementation of the Downtown Precise Plan would require

compliance with all federal, State, regional, and local regulations, including the proposed General Plan 2040 goals, policies, and programs listed above, which ensure compliance with existing emergency response and evacuation plans.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts from hazardous materials; therefore, the impact described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not interfere with existing adopted plans such as the Marin Operational Area EOP, the Marin County Operational Area ERP, and the San Rafael LHMP, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-7 Implementation of the proposed project could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

General Plan 2040

Chapter 4.18, Wildfire, of this Draft EIR provides a discussion of the relevant regulatory framework and existing conditions pertaining to wildland fire hazards in the EIR Study Area. The EIR Study Area contains land within the State Responsibility Area and Local Responsibility Area, shown on Figure 4.18-1. The portion of the EIR Study Area within the State Responsibility Area is designated as a moderate fire hazard severity zone. The land within the Local Responsibility Area is designated as moderate or high fire hazard severity zones. There are no lands in the EIR Study Area classified by the State of California as being a "Very High Fire Hazard Severity Zone." As shown on Figure 4.18-2, the EIR Study Area also includes lands within the WUI, which is defined as any area where structures and other human development meet or intermingle within wildland vegetation.[11] However, there are no proposed land use changes as part of the proposed General Plan 2040 that would modify the types of land uses or exacerbate any risks beyond what is currently allowed in the General Plan 2020.

Potential future development under the proposed General Plan 2040 would result in increased opportunities for development to occur on infill sites in existing urban areas of the EIR Study Area. Therefore, while not prohibiting potential future development from occurring in the State or Local Responsibility Area or within the WUI, by increasing infill opportunities, the City is reducing the need for development in higher-risk areas. As shown on Figure 4.18-3, some infill sites are located within the WUI areas. All potential future development under the proposed General Plan 2040 would be required to comply with State and local regulations as well as the proposed goals, policies, and programs described in Chapter 4.18, Wildfire, of this Draft EIR, and the City's WPPAP, all which reduce the likelihood of significant risk of loss, injury, or death involving wildland fires. Therefore, implementation of the proposed General

[11] California Office of Emergency Services. 2018. *California State Hazard Mitigation Plan*.

Plan 2040 would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area contains minimal areas of both high and moderate fire hazard severity zones, and as with the remainder of the city, there are no very high fire severity zones (see Figure 4.18-3). Areas in the north, northwest, and southwest of the Downtown Precise Plan Area are within the WUI (see Figure 4.18-4). As with the proposed General Plan 2040, the majority of potential future development under the Downtown Precise Plan would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, some of which would occur within the WUI area.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce impacts from wildland fire hazards; therefore, the impact described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-8 Implementation of the proposed project could result in a cumulatively considerable impact to hazards and hazardous material.

As discussed previously, potential future development allowed by the proposed project would not result in significant impacts from hazardous materials and would not increase exposure to potential hazards associated with wildland fires. Where the EIR Study Area contains sites included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5, compliance with federal, State, and local regulations, as well as implementation of Mitigation Measure HAZ-4 would reduce these impacts to less than significant. Implementation of the proposed project would not interfere with implementation of emergency response plans or result in significant impacts regarding airport hazards.

Cumulative development in adjacent jurisdictions would be subject to the same federal, State, and regional regulations, as well as regional safety plans, such as the Marin County Operational Area ERP and the Marin County Operational Area EOP. Since impacts associated with hazardous materials and wildland fires are by their nature focused on specific sites or areas, the less-than-significant impacts within the EIR Study Area from the proposed project would not contribute to a cumulative increase in hazards in the immediate vicinity of the Downtown Precise Plan Area, EIR Study Area, or greater Marin County region. Therefore, cumulative impacts associated with hazards and hazardous materials would be *less than significant*

Significance with Mitigation: Less than significant.

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4.10 HYDROLOGY AND WATER QUALITY

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to hydrology and water quality. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of project and cumulative impacts.

4.10.1 ENVIRONMENTAL SETTING

4.10.1.1 REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

The United States Environmental Protection Agency (USEPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) (codified at 33 United States Code Sections 1251 to 1376) of 1972 is the primary federal law that governs and authorizes water quality control activities by the EPA, as well as the states. Various elements of the CWA, which address water quality, are discussed below.

Permits to dredge or fill waters of the United States are administered by the United States Army Corps of Engineers (USACE) under Section 404 of the CWA. "Waters of the United States" are defined as territorial seas and traditional navigable waters, perennial and intermittent tributaries to those waters, lakes and ponds and impoundments of jurisdictional waters, and wetlands adjacent to jurisdictional waters. The regulatory branch of the USACE is responsible for implementing and enforcing Section 404 of the CWA and issuing permits. Any activity that discharges fill material and/or requires excavation in waters of the United States must obtain a Section 404 permit. Before issuing the permit, the USACE requires that an analysis be conducted to demonstrate that the proposed project is the least environmentally damaging practicable alternative. Also, the USACE is required to comply with the National Environmental Policy Act before it may issue an individual Section 404 permit.

Under Section 401 of the CWA, every applicant for a Section 404 permit that may result in a discharge to a water body must first obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. Certifications are issued in conjunction with USACE Section 404 permits for dredge and fill discharges. In addition, an application for Individual Water Quality Certification and/or Waste Discharge Requirements must be submitted for any activity that would result in the placement of dredged or fill material in waters of the State that are not jurisdictional to the USACE, such as isolated wetlands, to ensure that the proposed activity complies with State water quality standards. In California, the authority to either grant water quality certification or waive the requirement is delegated by the State Water Resources Control Board (SWRCB) to its nine Regional Water Quality Control Boards (RWQCB).

Under federal law, the USEPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the

designated uses. Section 304(a) requires the USEPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, the USEPA has delegated authority to the SWRCB and its RWQCBs to identify beneficial uses and adopt applicable water quality objectives.

When water quality does not meet CWA standards and compromises designated beneficial uses of a receiving water body, Section 303(d) of the CWA requires that water body be identified and listed as "impaired". Once a water body has been designated as impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards, with a factor of safety included. Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Under the NPDES Program, all facilities that discharge pollutants into waters of the United States are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under this program. In California, the NPDES permit program is administered by the SWRCB through the nine RWQCBs. The City of San Rafael lies within the jurisdiction of San Francisco Bay RWQCB (Region 2) and is subject to the waste discharge requirements for the Phase II Small MS4 Permit (Order No. 2013-0001-DWQ) and NPDES Permit No. CAS000004, with the last amendment, Order No. WQ 2018-0007-EXEC, issued in March 2018 and the latest amendments taking effect on January 1, 2019.

Under Provision E.12 of the NPDES Permit, the co-permittees use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is accomplished primarily through the implementation of low impact development techniques. In addition, projects that create and/or replace one acre or more of impervious surfaces must comply with the hydromodification requirements specified in the E.12 provisions of the Phase II Small MS4 permit. These requirements include implementing site design measures to achieve infiltration, evapotranspiration, and/or harvesting/reuse of the 85th percentile 24-hour storm runoff event to the extent feasible and treatment of the remaining runoff with bioretention facilities. The hydromodification provisions also require that post-project runoff does not exceed pre-project runoff for the 2-year, 24-hour storm event.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. The locations within the 100-year floodplain are provided on Figure 4.10-3.

Additionally, FEMA has developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events, and the results of this evaluation are documented in the FEMA Levee Inventory System. Levee systems must meet minimum freeboard standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

As required by the FEMA regulations, all development constructed within the Special Flood Hazard Zone (as delineated on the FIRM) must be elevated so that the lowest floor is at or above the base flood elevation level. The term "development" is defined by FEMA as any human-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials. Per these regulations, if development in these areas occurs, a hydrologic and hydraulic analysis must be performed prior to the start of development and must demonstrate that the development does not cause any rise in base flood elevation levels, because no rise is permitted within regulatory floodways. Upon completion of any development that changes existing Special Flood Hazard Area boundaries, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision, as soon as practicable, but not later than six months after such data become available.

Rivers and Harbors Act of 1899

Under the Rivers and Harbors Act of 1899, the USACE requires permits for activities involving the obstruction of the navigable capacity of any waters of the United States or the construction of any structures in or over navigable waters of the United States, including ports, canals, navigable rivers, or other waters. "Navigable waters" under Section 10 of the Rivers and Harbors Act are defined as "those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce." Pursuant to Section 10 of the Rivers and Harbors Act, the USACE administers this regulatory program separate from the Section 404 program. A Section 10 permit may be required for structures or work outside the limits of navigable waters if the structure or work affects the course, location, condition, or capacity of the water body.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act provides the basic authority for the United States Fish and Wildlife Service (USFWS) to evaluate impacts to fish and wildlife from proposed water resource development projects. This act requires that all federal agencies consult with the USFWS, the National Marine Fisheries Service, and State wildlife agencies (i.e., the California Department of Fish and Wildlife or CDFW) for activities that affect, control, or modify waters of any stream or bodies of water. Under this act, the USFWS has responsibility for reviewing and commenting on all water resources projects. For example, it would provide consultation to the USACE prior to issuance of a Section 404 permit.

If a project may result in the "incidental take" of a listed species, an incidental take permit is required. An incidental take permit allows a developer to proceed with an activity that is legal in all other respects but that results in the "incidental taking" of a listed species. A habitat conservation plan must also accompany an application for an incidental take permit. The purpose of a habitat conservation plan is to ensure that the effects of the permitted action or listed species are adequately minimized and mitigated.

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. This act established the SWRCB and divided the state into nine regional basins, each under the jurisdiction of an RWQCB. The SWRCB is the primary State agency responsible for the protection of California's water quality and groundwater supplies. The RWQCBs carry out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. As stated previously, San Rafael is within the jurisdiction of the San Francisco Bay RWQCB (Region 2).

The Porter-Cologne Act also authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services for drinking water regulations, the CDFW, and the Office of Environmental Health and Hazard Assessment.

State Water Resources Control Board

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The project is within the jurisdiction of the San Francisco Bay RWQCB (Region 2), which regulates surface water and groundwater quality in San Francisco

Bay. The RWQCB's jurisdiction includes all the San Francisco Bay's segments extending to the mouth of the Sacramento-San Joaquin Delta.

State Water Resources Control Board Construction General Permit

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA.

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the SWRCB Construction General Permit (2009-0009-DWQ) as amended by 2010-0014-DWQ and 2012-0006-DWQ. Under the terms of the permit, applicants must file Permit Registration Documents (PRD) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent, risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

Applicants must also demonstrate conformance with applicable best management practices (BMPs) and prepare a SWPPP containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the best management practices, and a sediment-monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Some sites (Risk Level 2 and 3) also require implementation of a Rain Event Action Plan 48 hours prior to a 50 percent or greater chance of a precipitation event.

In addition, the SWRCB requires all projects subject to a grading permit or a building permit that has the potential for erosion or significant discharges of sediment and/or construction waste, to submit an Erosion and Sediment Control Plan (ESCP) for approval by the City. The ESCP must describe erosion and sediment control measures that will be implemented during the construction phase as well as final stabilization control measures. The BMPs specified in the ESCP must be implemented year-round and the ESCP format should follow the most recent version of the MCSTOPPP Construction Erosion and Sediment Control Plan Applicant Package. This requirement applies to projects that are less than one acre in size if they require grading permits or building permits that could result in non-stormwater discharges to a storm drain. Projects subject to the SWRCB Construction General Permit may include the ESCP provisions within the SWPPP.

State Water Resources Control Board Trash Amendments

On April 7, 2015, the SWRCB adopted an amendment to the *Water Quality Control Plan for Ocean Waters of California* to control trash and Part 1, Trash Provisions, of the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. They are collectively referred to as "the Trash Amendments". The Trash Amendments apply to all surface waters of California and include a land-use-

based compliance approach to focus trash controls on areas with high trash-generation rates. Areas such as high density residential, industrial, commercial, mixed urban, and public transportation stations are considered priority land uses. There are two compliance tracks for Phase I and Phase II MS4 permittees:

- Track 1: Permittees must install, operate, and maintain a network of certified full capture systems in storm drains that capture runoff from priority land uses.
- Track 2: Permittees must implement a plan with a combination of full capture systems, multibenefit projects, institutional controls, and/or other treatment methods that have the same effectiveness as Track 1 methods.

The Trash Amendments provide a framework for permittees to implement their provisions. Full compliance must occur within 10 years of the permit, and permittees must also meet interim milestones such as average load reductions of 10 percent per year. The amendment mandates that the City needs to install catch basin filters on all City catch basins by December 2, 2030.[1] However, the City is concerned about the effect that these filters may have on the performance of the storm drain system.[2] There currently are some trash devices installed at commercial properties, such as the Northgate Mall, but the City does not maintain these devices.

State Water Resources Control Board General Industrial Permit

The Statewide General permit for Storm Water Discharges Associated with Industrial Activities, Order No. 2014-0057-DWQ and amended by 2015-0122-DWQ (2018) implements the federally required storm water regulations in California for storm water associated with industrial activities that discharge to waters of the United States. This regulation covers facilities that are required by federal regulations or by the RWQCBs to obtain an NPDES permit. Dischargers are required to eliminate nonstorm water discharges, develop SWPPPs that include BMPs, conduct monitoring of stormwater runoff, and submit all compliance documents via the SWRCB's SMARTS program.

California Water Code Section 13751: Water Wells

Section 13751 of the Water Code requires a Well Completion Report (WCR) to be completed by each person who digs, bores, or drills a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well or abandons or modifies an existing well. The WCR should be filed with the California Department of Water Resources (DWR) within 60 days of the date that construction, alteration, abandonment, or destruction of a well is completed.[3] Completed WCRs are sent to and maintained at the DWR regional office that serves the area where the well is located.

[1] State Water Resources Quality Control Board. January 7, 2019. Storm Water Program - Trash Implementation Program. https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html

[2] City of San Rafael Public Work Department. May 8, 2019. Interview with Kevin McGowan, Assistant Public Works Director/City Engineer.

[3] California Department of Water Resources, 2020. Well Completion Reports, accessed on July 7, 2020, https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Completion-Reports.

California Coastal Act of 1976

The California Coastal Act of 1976 established three designated coastal management agencies to plan and regulate the use of land and water in the coastal zone: the California Coastal Commission, the San Francisco Bay Conservation and Development Commission (BCDC), and the California Coastal Conservancy. Under California's federally approved Coastal Management Program, the California Coastal Commission manages development along the California coast except for San Francisco Bay, which is overseen by the BCDC. The City of San Rafael is under the jurisdiction of the BCDC for all land within 100 feet of the shoreline. The mission of the California Coastal Conservancy is to purchase, protect, restore, and enhance coastal resources and provide shoreline access. Additional information on the BCDC is discussed in Regional Regulations, below.

California Department of Fish and Wildlife

The CDFW protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Sections 1601 to 1606 of the California Fish and Game Code. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the CDFW, incorporating necessary mitigation, and obtaining a streambed alteration agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation.

Water Conservation in Landscaping Act of 2006

The Water Conservation in Landscaping Act includes the State of California's Model Water Efficient Landscape Ordinance (MWELO), which requires cities and counties to adopt landscape water conservation ordinances. The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and build resiliency for future droughts. State law requires all land use agencies, which includes cities and counties, to adopt a WELO that is at least as efficient as the MWELO prepared by the DWR. The 2015 revisions to the MWELO improve water conservation in the landscaping sector by promoting efficient landscapes in new developments and retrofitted landscapes. The revisions increase water efficiency by requiring more efficient irrigation systems, incentives for grey water usage, improvements in on-site stormwater capture, and limiting the portion of landscapes that can be covered in high-water-use plants and turf. New development projects that include landscape areas of 500 square feet or more are subject to the MWELO. This applies to residential, commercial, industrial, and institutional projects that require a permit, plan check, or design review. The previous landscape size threshold for new development projects ranged from 2,500 square feet to 5,000 square feet.[4] The size threshold for rehabilitated landscapes has not changed and remains at 2,500 square feet.

Chapter 13.02 of the Marin Municipal Water District (MMWD) Code adopts an ordinance that incorporates updates consistent with the 2015 update. The City of San Rafael has adopted the MMWD

[4] California Department of Water Resources, 2015. Updated Model Water Efficient Landscape Ordinance, Guidance for California Local Agencies, https://water.ca.gov/LegacyFiles/wateruseefficiency/landscapeordinance/docs/2015%20MWELO%20Guidance%20for%20Local%20Agencies.pdf, accessed on March 20, 2019.

Ordinance, as codified in the San Rafael Municipal Code (SRMC) Section 14.16.370, Water-Efficient Landscape.

Regional Regulations

San Francisco Bay Regional Water Quality Control Board

The City of San Rafael is within the jurisdiction of the San Francisco Bay RWQCB (Region 2). The San Francisco Bay RWQCB addresses regionwide water quality issues through the creation and triennial update of the *San Francisco Bay Basin Water Quality Control Plan* (Basin Plan). The Basin Plan was adopted in 1995 and most recently amended May 4, 2017. This Basin Plan designates beneficial uses of the State waters within Region 2, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan.[5] The *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*, as adopted by the SWRCB in 1995 and last amended in 2018, also provides water quality principles and guidelines to prevent water quality degradation and protect the beneficial uses of waters of enclosed bays and estuaries.[6] The San Francisco Bay RWQCB also administers the Phase II Small MS4 permit for Marin County and the municipalities within Marin County, including the City of San Rafael. Additional information regarding this permit is provided in the NPDES section on page 4.10-2.

Bay Protection and Toxic Cleanup Program

In 1989, the California legislature established the Bay Protection and Toxic Cleanup Program with the goal of protecting present and future beneficial uses of the Bay and estuarine waters of California. In addition, the program was tasked with identifying toxic hot spots (i.e., localized areas with elevated concentrations of pollutants) and developing prevention and control strategies to remediate the toxic hot spots. As part of this program, in 1993 the San Francisco Bay RWQCB initiated the Regional Monitoring Program. The purpose of the program is to assess regional water quality conditions, characterize patterns and trends of contaminant concentrations and distribution in the water column, and identify general sources of contamination to San Francisco Bay. The program has established a database of water quality and sediment quality in the Bay, particularly with respect to trace elements and organic contaminants.

San Francisco Bay Conservation and Development Commission

The California Coastal Act carries out its mandate locally through the BCDC. BCDC's jurisdiction for San Francisco Bay includes all sloughs, marshlands between mean high tide and five feet above mean sea level, tidelands, submerged lands, and land within 100 feet of the shoreline. This includes the San Pablo Bay and San Rafael Bay shorelines within the Environmental Impact Report (EIR) Study Area, but BCDC's

[5] San Francisco Bay RWQCB, 2017 *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*, https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf, accessed on June 22, 2020.

[6] State Water Resources Control Board, 1995. *Water Quality Control Policy for the Enclosed Bays and Estuaries of California, as Adopted by Resolution No. 95-84 on November 16, 1995*. Latest revision on June 5, 2018.

jurisdiction ends at the mouth of San Rafael Creek/Canal. The precise boundaries are clarified by BCDC upon request.

The current BCDC policy allows for the protection of existing and planned development from flooding by the placement of fill, encourages innovative means of dealing with flood danger, and states that local governments will determine how best to deal with development projects inland of BCDC's jurisdiction, which extends 100 feet inland from the shoreline. The provisions of BCDC's *San Francisco Bay Plan* do not apply outside BCDC's jurisdiction for purposes of implementing the California Environmental Quality Act (CEQA).[7]

The new BCDC policies require sea level rise risk assessments to be conducted when planning shoreline areas or designing large shoreline projects within BCDC's jurisdiction. Risk assessments are not required for repairs of existing facilities, interim projects, small projects that do not increase risks to public safety, and infill projects within existing urbanized areas. Projects within the shoreline band, the area within 100 feet of the shoreline, need only address risks to public access.

As a permitting authority along the San Francisco Bay shoreline, BCDC is responsible for granting or denying permits for any proposed fill, extraction of materials, or change in the use of any water, land, or structure within BCDC's jurisdiction. Permits may be granted or denied only after public hearings and after the process for review and comment has been completed by the City (or by the County for projects within unincorporated areas). BCDC will approve the permit if it is determined that the project is in accordance with defined standards for use of the shoreline, provisions for public access, and advisory review of appearance.

Projects within BCDC jurisdiction that involve bay fill must be consistent with the policies of the BCDC's *San Francisco Bay Plan* on the safety of fills and shoreline protection. Land elevation changes caused by tectonic activity or consolidation/compaction of soft soils, such as bay muds, is variable around the San Francisco Bay. Consequently, some parts of the San Francisco Bay may experience a greater relative rise in sea level than other areas. According to BCDC policies, new projects built on fill or near the shoreline should be set back from the edge of the shore so that the project will not be subject to dynamic wave energy; be built so the bottom floor of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project; be specifically designed to tolerate periodic flooding; or employ other effective means of addressing the impacts of future sea level rise and storm activity.

Marin County Stormwater Pollution Prevention Program

Marin County's 11 cities and towns, including the City of San Rafael and the County of Marin began addressing stormwater pollution in the early 90s. In 1993 they created the Marin County Stormwater Pollution Prevention Program (MCSTOPPP). The following goals are key to implementing the MCSTOPPP:

[7] San Francisco Bay Conservation and Development Commission, 2011. *Resolution No. 11-08: Adoption of Bay Plan Amendment Adding New Climate Change Findings and Policies to the Bay Plan.*

- Prevent stormwater pollution.
- Protect and enhance water quality in creeks and wetlands.
- Preserve beneficial uses of local waterways.
- Comply with State and federal regulations.

Each MCSTOPPP member agency implements a local stormwater pollution prevention program and funds the countywide MCSTOPPP, which provides for the coordination and consistency of approaches between the local stormwater programs.[8] MCSTOPPP also provides technical assistance to member agencies and the public and implements an outreach and education program. Resources are also provided for construction projects, including the MCSTOPPP Erosion and Sediment Control Plan Applicant Package, which must be submitted to the applicable municipality for review and approval prior to the start of construction. Minimum control measures for small (<1 acre) construction projects are provided. If dewatering will occur, the project applicant must follow the MCSTOPPP trench dewatering BMPs. Post-construction stormwater requirements are also provided at MCSTOPPP's website, which includes projects that create and/or replace more than 2,500 square feet of impervious area.[9]

Bay Area Stormwater Management Agencies Association

The Bay Area Stormwater Management Agencies Association (BASMAA) is a consortium of the following nine San Francisco Bay Area municipal stormwater programs:

- Alameda Countywide Clean Water Program
- Contra Costa Clean Water Program
- Fairfield-Suisun Urban Runoff Management Program
- Marin County Stormwater Pollution Prevention Program
- Napa Countywide Stormwater Pollution Prevention Program
- San Mateo Countywide Water Pollution Prevention Program
- Santa Clara Valley Urban Runoff Pollution Prevention Program
- Sonoma County Water Agency
- Vallejo Sanitation and Flood Control District

BASMAA was initiated by local governments in response to the NPDES permitting program for stormwater to promote regional consistency and to facilitate efficient use of public resources. BASMAA encourages information sharing and cooperation and develops products and programs that are more cost-effective when produced regionally than could be accomplished locally.[10] The BASMAA Post-construction Manual includes standards and requirements applicable to development projects within the city of San Rafael and the EIR Study Area. The Manual provides a low impact development approach to implementing Provision E.12 of the Phase II Small MS4 permit, which requires postconstruction stormwater BMPs. Provision E.12

[8] County of Marin, 2019, About MCSTOPPP https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/mcstoppp/about-mcstoppp, accessed on March 20, 2019.

[9] County of Marin, 2020. Development Projects/Post Construction Stormwater Management. Accessed at https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/mcstoppp/development/new-and-redevelopment-projects?panelnum=2 on October 5, 2020.

[10] Bay Area Stormwater Management Agencies Association, The Mission of BASMAA http://basmaa.org/About-BASMAA, accessed on March 20, 2019.

requires single-family homes that create and/or replace 2,500 square feet of impervious surface or small projects that create and/or replace between 2,500 and 5,000 square feet of impervious surface to implement at least one BMP to reduce runoff. Regulated projects that create and/or replace 5,000 square feet or more of impervious surface must implement site design and runoff reduction BMPs and prepare a Stormwater Control Plan (SCP).

Marin County Flood Control and Water Conservation District

The mission of the Marin County Flood Control and Water Conservation District (MCFCWCD) is to reduce the risk of flooding for the protection of life and property within Marin County. The MCFCWCD is responsible for the planning, design, construction, operation, and maintenance of facilities such as stormwater pump stations, detention basins, bypass drains, creeks, ditches, and levees.

Multiple flood control district zones have been established within the MCFCWCD to address specific flooding problems across Marin County. These zones do not cover the entire county and are, for the most part, concentrated in the county's eastern urbanized corridor. Zone 6 is in the city limits and encompasses the residential area known as the San Rafael Meadows. Zone 6 was created in the 1960s to address frequent flooding in the low-lying area just west of US-101 across from the Marin County Civic Center. Zone 6 is overseen by a five-member advisory board. In the early 2000s, construction of a new subdivision rerouted stormwater around the community, eliminating a significant source of flooding in the zone. Work within Zone 6 includes an annual vegetation maintenance program along 0.75 mile of Gallinas Creek.

Zone 7 is located outside the city limits and encompasses the area known as Santa Venetia that is in the EIR Study Area. Zone 7 was created in 1962 to address creek and tidal flooding within the low-lying neighborhood of Santa Venetia. Santa Venetia was one of the first developments in Marin County to be constructed on fill over Bay mud and, due to the low initial elevation of the fill and compression of the underlying Bay mud, the area has subsided and is now below the high tide level. Work in Zone 7 includes regular servicing of 14 pumps at five pump stations, maintenance of five portable pumps, maintenance of 1.9 miles of flood protection levees, maintenance of tide gates and trash racks, and an annual vegetation maintenance program along 0.85 mile of Gallinas Creek.[11]

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to hydrology and water quality are primarily in the Sustainability, Safety, and Air and Water Quality Elements. As part of the proposed General Plan 2040, some existing General Plan goals, policies, and programs would be amended or substantially changed and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.10.3, Impact Discussion.

[11] Marin County Flood Control and Water Conservation District, 2020. About the Flood Control Zones. Accessed at https://www.marinwatersheds.org/flood-protection/flood-control-zones#undefined6 on June 23, 2020.

San Rafael Municipal Code

The SRMC includes various directives to minimize adverse impacts to water quality and prevent flooding in San Rafael. The SRMC is organized by title, chapter, and section. Sections of the SRMC related to hydrology and water quality impacts include Title 3, Finance and Taxation, Title 9, Health and Sanitation, Title 11, Public Works, Title 17, Waters and Waterways, and Title 18, Protection of Flood Hazard Areas, as follows:

- Chapter 3.32, Public Facilities Development Fees. This chapter establishes fees for new construction in the City to pay for needed public facilities and improvements. The fees are used to:
  - Pay for the planning, design, and construction of designated public facilities.
  - Reimburse the City for public facilities constructed by the City with local funds from other sources.
  - Reimburse developers who have constructed designated public facilities that exceed the capacity needed to mitigate impacts of the individual development project.
  - Pay for and/or reimburse costs of development and ongoing administration of the fee program.
- Chapter 9.12, Offensive Wastes and Growths. Section 9.12.020 of this chapter prohibits the dumping of garbage or sewage into the San Rafael Canal within the limits of the city or into any tidewater tributary to the canal or any slough, creek, inlet, ditch, or body of water fed by the San Rafael Canal.
- Chapter 9.24, Well Standards. This chapter protects groundwater and surface water by establishing standards regulating the construction, placement, reconstruction, and destruction of water wells, water supply sources, test holes, cathodic protection wells, and monitoring wells in the city. Section 9.24.070, Prohibition, prohibits the use of well water for more than one residential lot if the well is located within the MMWD's service area.
- Chapter 9.30, Urban Runoff Pollution Prevention. This chapter sets forth stormwater controls to be implemented to protect and enhance watercourses and fish and wildlife habitat by:
  - Minimizing discharges other than stormwater runoff to storm drains or watercourses.
  - Responding to the discharge of spills, preventing and controlling the discharge of spills to storm drains or watercourses, and prohibiting dumping or disposal of materials other than stormwater.
  - Reducing pollutants in stormwater discharges to the maximum extent practicable.
  - Requiring operators of construction sites, new or redeveloped land, and industrial and commercial facilities to install, implement, or maintain appropriate BMPs.
  - Maintaining predevelopment stormwater runoff rates and preventing nonpoint-source pollution whenever possible, through stormwater management controls and ensuring that these management controls are properly maintained.

  Section 9.30.140, Construction-Phase BMPs, specifies construction-phase BMPs to prevent the discharge of contaminants to stormwater during construction, and Section 9.39.150 requires an ESCP to be prepared for review and approval by the City. Section 9.30.151, Land Development Standards for Permanent Stormwater Controls for New and Redevelopments, requires submittal and implementation of an SCP, subject to approval by the City and in accordance with the BASMAA Post-construction Manual and the Phase II Small MS4 Permit.
- Chapter 9.40, Regulatory Fee for Clean Stormwater Activities. This chapter ensures the future health, safety, and general welfare of the citizens of the city by establishing a funding source to provide enforcement of the City's Urban Runoff Pollution Prevention Ordinance, to provide maintenance and

repair of the city's stormwater drainage facilities, to provide capital improvements to the city's storm drainage system, and to provide other clean stormwater activities.

- Chapter 11.30, Watercourses. This chapter prohibits any person from diverting, obstructing, or altering any watercourse, drainage channel, or drainage basin in the city, except in cases approved by the Department of Public Works and/or the City Engineer.
- Chapter 14.18, Parking Standards. This chapter provides landscaping requirements for new or renovated parking lots with more than five spaces. Included in the chapter is Section 14.18.160 (j), Biofiltration. These are measures to minimize the discharge of pollutants to the storm drain system, including the use of permeable pavers, bioswales, at-grade curbs, and opening in curbs to allow the filtration of runoff through landscaped areas.
- Chapter 17.10, Dumping, Dredging, and Construction Within Tidal Waterways. This chapter prohibits any dumping, dredging, uncontrolled filling, excavation, or construction in all portions of San Pablo Bay and San Rafael Bay, tidelands, shorelines, waterways, canals, beaches, or salt marshes within the city unless a Tidelands Permit is filed and approved.
- Title 18, Protection of Flood Hazard Areas. Regulations within Title 18to minimize public and private losses due to flood conditions and is consistent with FEMA's National Flood Insurance Program. To accomplish its purposes, this title includes methods and provisions to:
  - Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities.
  - Require that uses vulnerable to floods be protected against flood damage at the time of initial construction.
  - Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters.
  - Control filling, grading, dredging, and other development that may increase flood damage.
  - Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or may increase flood hazards in other areas.

Local Hazard Mitigation Plan

The San Rafael Local Hazard Mitigation Plan (LHMP), adopted in November 2017, is a guide to hazard mitigation within the city and serves as a tool to help decision-makers direct hazard mitigation activities and resources. In the context of an LHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including flooding and sea level rise. Table 4.10-1 lists the LHMP actions to help reduce the risk of these hazards.

TABLE 4.10-1 LOCAL HAZARD MITIGATION PLAN MITIGATION ACTIONS RELEVANT TO WATER QUALITY

Number	Mitigation Action
Action 15	Elevate/Raise Low Lying Roadways.
Action 16	Elevate Critical Infrastructure.
Action 17	Improvements to Existing Berms, Levees and Flood Control Systems.
Action 18	Continued involvement in the BayWAVE county-wide vulnerability assessment (Phase 1 and 2); Implement resulting strategies from Phase 2 of the program.
Action 19	Develop a Climate Adaptation Plan and Implement Resulting Strategies.

TABLE 4.10-1 LOCAL HAZARD MITIGATION PLAN MITIGATION ACTIONS RELEVANT TO WATER QUALITY

Number	Mitigation Action
Action 20	Freitas Ditch Riparian and Flood Improvement Project.
Action 21	Spinnaker Point Levee Assessment Study.
Action 31	Develop and Maintain a Community Rating System (CRS).
Action 32	Beach Drive Structural Flood Protection.
Action 33	Adopt a Drain Program.
Action 34	City Pump Station Analysis and Improvements.
Action 35	City Storm Drain System Analysis and Improvements.
Action 36	City Flood Alert System.
Action 37	Gallinas Creek Dredging.
Action 38	San Rafael Canal Dredging.

Source: City of San Rafael San Rafael Local Hazard Mitigation Plan, adopted in June 2017.

4.10.1.2 EXISTING CONDITIONS

Topography

The EIR Study Area extends from 1,800 feet above sea level in the coastal mountains to sea level at the tidal marshes and baylands on the eastern edge of the city. The higher, hilly portions of the EIR Study Area include the Terra Linda and Sleepy Hollow Open Space Areas in the northwest corner, Southern Heights Ridge on the southwestern edge, and Black Canyon and San Pedro Mountain in the eastern portion. The lower, flatter portions of the EIR Study Area include the Downtown Precise Plan Area and the Canal neighborhood. Santa Venetia, in the unincorporated area along Gallinas Creek, also is at a low elevation and subject to flooding.

Regional Hydrology

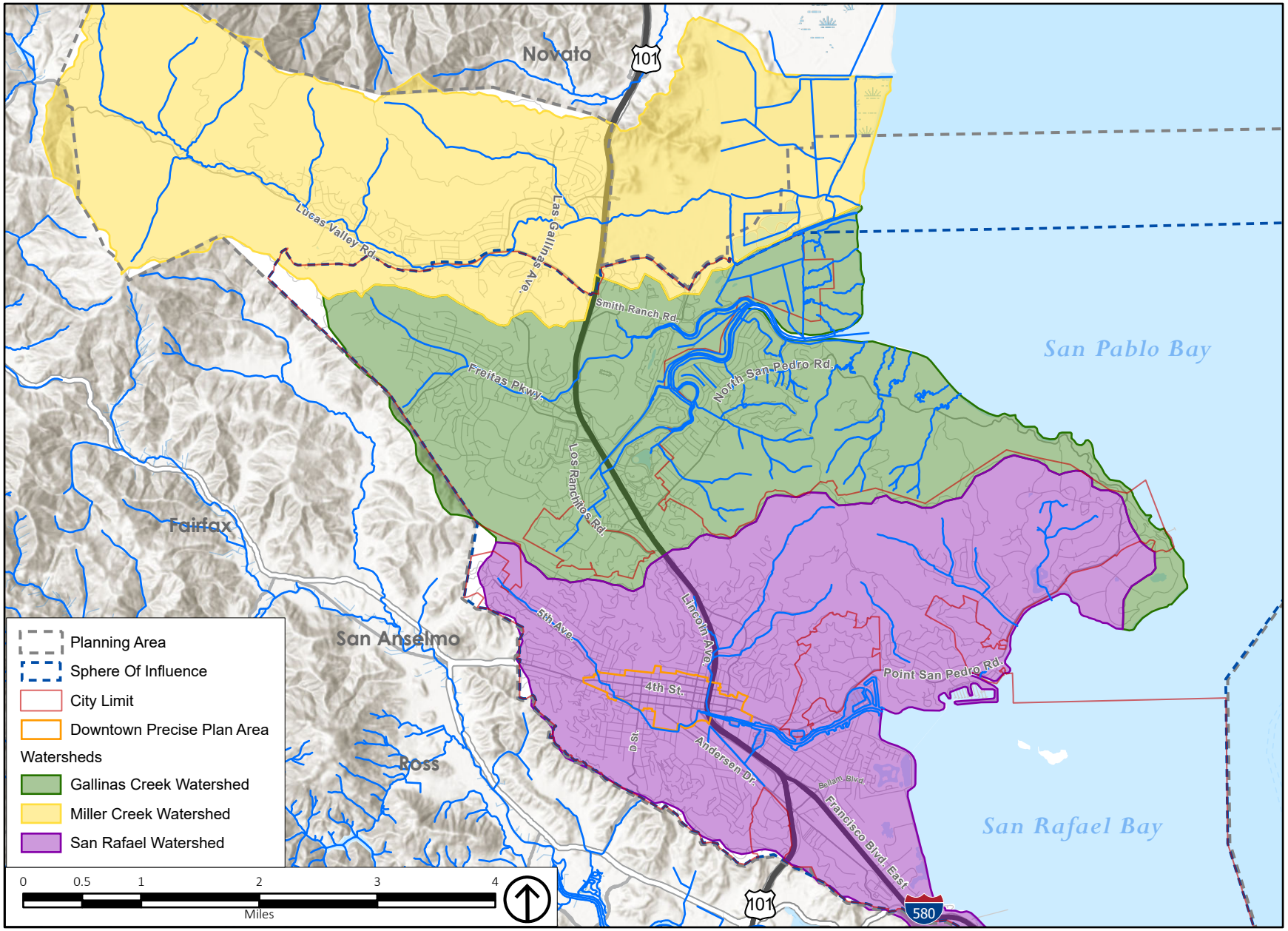
The EIR Study Area is located within three watersheds, as shown on Figure 4.10-1 and described below. Water typically flows from the northwest to the southeast through natural and urbanized creeks.

- **Miller Creek Watershed.** The Miller Creek Watershed is in the northern portion of the EIR Study Area, immediately north of the Gallinas Creek Watershed. The watershed encompasses 12 square miles and flows eastward from the western end of the Lucas Valley, through Miller Creek Estates and Marinwood, to the Baylands at the Northwest Pacific Railroad Bridge.[12] Elevations range from 1,880 feet at Big Rock Ridge to sea level at San Pablo Bay.[13] The upper watershed is located in Marin County Open Space, and the riparian habitat is somewhat degraded. The lower watershed flows through narrow, leveed channels into San Pablo Bay.[14]

[12] Marin Watershed Program, 2019 *Miller Creek*, https://www.marinwatersheds.org/creeks-watersheds/miller-creek, accessed on April 29, 2019.

[13] City of San Rafael, 2004, *San Rafael General Plan 2020, Draft EIR*, Chapter 10, Hydrology, Water Quality, and Flood Hazards.

[14] Marin Watershed Program, 2019, *Miller Creek Watershed, History and Habitat*, https://www.marinwatersheds.org/miller-creek-watershed-history-and-habitat, accessed on April 29, 2019.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.10-1
Watersheds

- Gallinas Creek Watershed. The Gallinas Creek Watershed is located between the Miller Creek and San Rafael Creek watersheds. The watershed encompasses 5.6 square miles that is split into two drainage areas, the North Fork and the South Fork of Gallinas Creek.[15] The North Fork is the larger of the two and flows from the ridgeline through Santa Margarita Valley and the Terra Linda neighborhood to the South Gallinas slough near McInnis Park. Because of tidal influences on the North Fork of Gallinas Creek, the low-lying communities of Santa Venetia, Marin Lagoon, and Contempo Marin are protected by flood control levees. The South Fork originates in the San Rafael Hills and San Pedro Ridge and flows through San Rafael Meadows and Santa Venetia into the Gallinas Slough. Elevations of the Gallinas Creek Watershed range from 1,100 feet in the western portion to sea level in the eastern portion of the drainage area.[16] The upper slopes of the watershed are County-owned open space, and the creek is tidally influenced and channelized east of US-101.[17] A significant portion of the watershed consists of tidal marshes, and the marshes adjacent to San Pablo Bay contain man-made levees.
- San Rafael Creek Watershed. The San Rafael Creek Watershed is the southernmost of the three watersheds and is located south of the Gallinas Creek Watershed. The watershed encompasses 11 square miles, including the Downtown Precise Plan Area, and is densely developed from the hills to the filled wetlands.[18] San Rafael Creek originates in the hills above Tamalpais Cemetery and flows through highly urbanized areas before forming the San Rafael Canal in the vicinity of Second Street at US-101. The upper stream corridor consists of short stretches of open stream channels, underground culverts, and trapezoidal open channels. San Rafael Creek eventually enters San Rafael Bay at Pickleweed Park.[19] Elevations of the San Rafael Creek Watershed range from 1,100 feet in the hills above Tamalpais Cemetery to sea level at the San Rafael Bay.[20] The San Rafael Creek Watershed encompasses several tributary watersheds, including Irwin Creek, Black Canyon Creek, Sister's Creek, and Mahon Creek. In the eastern portion of the watershed, Glenwood Creek and Peacock Gap Creek drain directly to San Rafael Bay. San Rafael Bay lies between Point San Quentin to the south and Point San Pedro to the north and is a wide, shallow mudflat that is an embayment of San Pablo Bay.

Local Hydrology

Stormwater runoff within the EIR Study Area is conveyed to the San Pablo Bay and the San Rafael Bay via natural drainage channels and the City's and County's storm drain system. The storm drain system within the City of San Rafael consists of 20 miles of corrugated metal pipes, 84 miles of concrete pipe, and 12 miles of plastic pipe. The storm drain system has 3,800 drain inlets, 20 major headwalls, and 745 smaller

[15] Marin Watershed Program, 2019, *Gallinas Creek, Zone 6: San Rafael Meadows & Zone 7: Santa Venetia & CSA 6: Gallinas Creek, 2019* at https://www.marinwatersheds.org/creeks-watersheds/gallinas-creek#undefined1, accessed on April 29, 2019..

[16] City of San Rafael, 2004, San Rafael General Plan 2020, Draft EIR, Chapter 10, Hydrology, Water Quality, and Flood Hazards.

[17] Marin Watershed Program, 2019, *Gallinas Creek Watershed, History and Habitat*, https://www.marinwatersheds.org/gallinas-creek-watershed-history-and-habitat, accessed on April 29, 2019.

[18] Marin Watershed Program, 2019, *San Rafael Creek*, https://www.marinwatersheds.org/creeks-watersheds/san-rafael-creek#undefined1, accessed on April 29, 2019.

[19] Marin Watershed Program, 2019, *San Rafael Creek*, https://www.marinwatersheds.org/creeks-watersheds/san-rafael-creek#undefined1, accessed on April 29, 2019.

[20] City of San Rafael, 2004, *San Rafael General Plan 2020, Draft EIR*, Chapter 10, Hydrology, Water Quality, and Flood Hazards.

headwalls.[21] The City also maintains approximately 35 miles of open ditches and culverts and 12 stormwater pump stations.[22] Stormwater pipelines in San Rafael range from 4 to 60 inches in diameter. Reinforced box culverts are also part of the storm drain system. A more detailed discussion of the storm drain system is provided in Chapter 4.17, Utilities and Service Systems, of this Draft EIR.

The City is responsible for maintaining the storm drains and certain waterways within City easements. Property owners are responsible for storm drains that are located on their properties.[23] The MCFCWCD operates and maintains stormwater pump stations, detention basins, bypass drains, creeks, ditches, and levees that are outside of the city limits but within the EIR Study Area. A more detailed discussion of these zones and the maintenance programs is provided in the section on Flood Zones, below. San Rafael Canal from Grand Avenue Bridge to San Rafael Bay is maintained by the USACE because it is classified a navigable waterway. The USACE conducts periodic dredging in the canal to remove accumulated sediment and keep the waterway accessible for commercial and recreational traffic.[24]

Groundwater

Two groundwater basins identified in the DWR Bulletin 118 are within the EIR Study Area, specifically the San Rafael Valley and Novato Valley Basins. The locations of these groundwater basins are shown on Figure 4.10-2. However, existing groundwater resources within the EIR Study Area are very limited due to a lack of substantial underlying groundwater aquifers and poor groundwater quality. In addition, SRMC Section 9.24.070, Prohibition, prohibits the use of well water for more than one residential lot if the well is located within the MMWD's service area. Groundwater use within the MMWD's service area is limited to small, domestic use through private groundwater wells. The MMWD has studied the potential for municipal groundwater use since the 1970s, and the results of these studies have shown that the potential for municipal groundwater use within the boundaries of the MMWD service area is very limited due to limited production capabilities, water quality constraints, and potential water rights issues. As a result of these studies, groundwater is not currently used or planned to be used as a municipal water supply source by the MMWD, though private groundwater wells are used in the study area.[25]

Regional groundwater quality data is very limited for the EIR Study Area. Groundwater quality is generally considered adequate for domestic and irrigation uses; however, localized areas experience poor groundwater quality. Saline intrusion continues to be an issue in areas bordering San Pablo Bay.

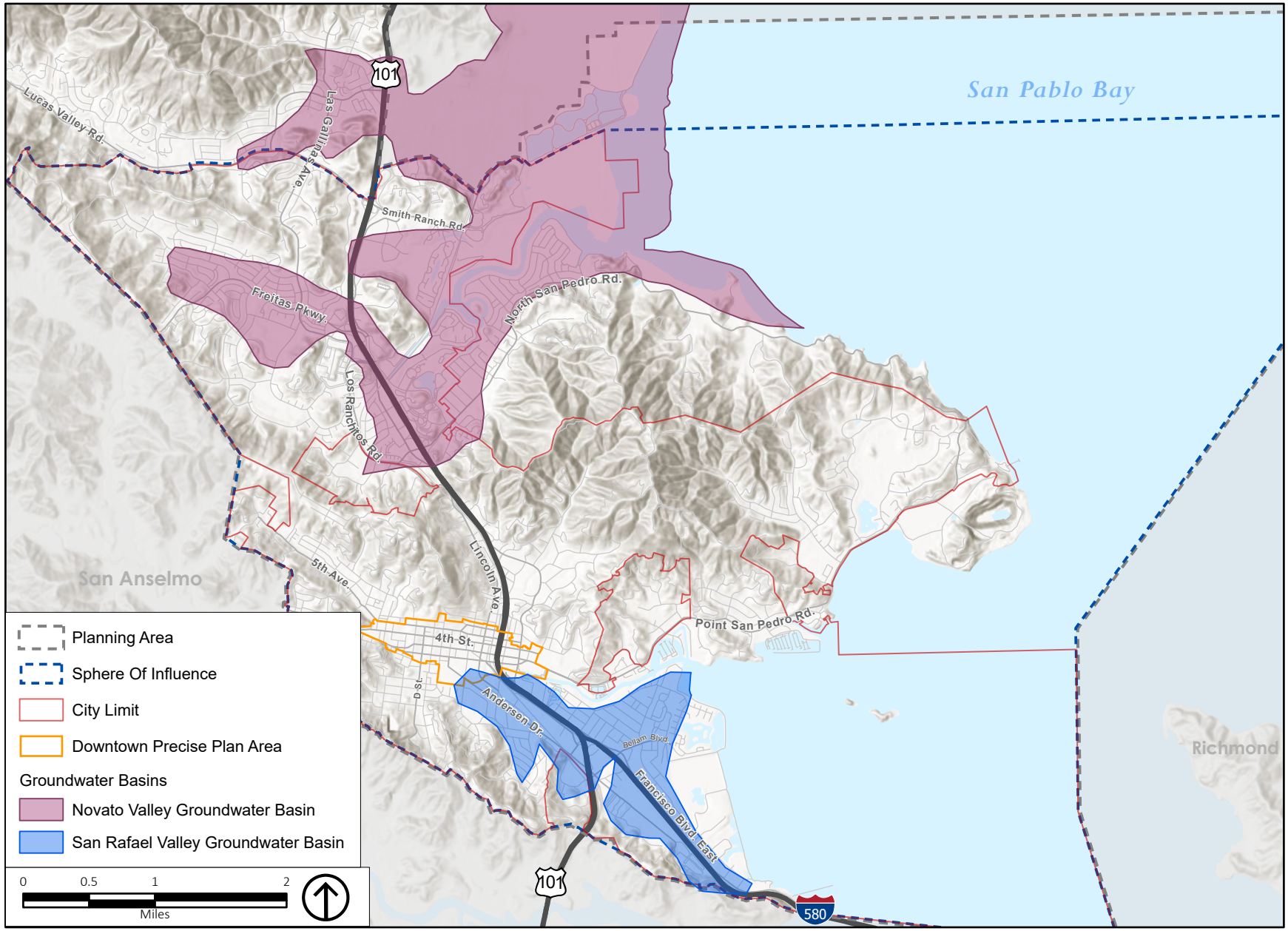
[21] City of San Rafael Public Work Department, May 8, 2019, Email correspondence with Mark Wright, Operations and Maintenance Manager.

[22] City of San Rafael Public Work Department, May 8, 2019, Interview with Kevin McGowan, Assistant Public Works Director/City Engineer.

[23] City of San Rafael Public Work Department, May 8, 2019, Interview with Kevin McGowan, Assistant Public Works Director/City Engineer.

[24] US Army Corps of Engineers - San Francisco District, *San Rafael Creek*, https://www.spn.usace.army.mil/Missions/Projects-and-Programs/Projects-by-Category/Projects-for-Navigable-Waterways/San-Rafael-Creek----/, accessed on May 10, 2019.

[25] Marin Municipal Water District, June 2016, *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.



Source: CA Department of Water Resources, 2020; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.10-2
Groundwater Basins

Although use of groundwater for domestic purposes is limited within the EIR Study Area, shallow groundwater is present beneath a large portion of the city, ranging in depths from 3 to 10 feet below ground surface.[26,27] Shallow groundwater depths vary with large rainfall events, periods of drought, and tidal influences near shorelines. In addition, groundwater levels are at the highest levels (i.e., closest to the ground surface) during the rainy season and decreasing during the drier months. As sea levels rise, the intrusion of salt water along the coastline will push the fresh groundwater layer up, creating a rise in groundwater levels. If the groundwater rises to the surface, it can create emergent flooding and ponds. Because a large portion of the development within San Rafael in built on artificial, unconsolidated fill, shallow groundwater could contribute to a higher liquefaction risk during a seismic event. Rising groundwater can also cause inflow and infiltration into wastewater pipes.

If construction dewatering is required with future development within the EIR Study Area, the City must be contacted. Staff will determine whether groundwater can be discharged to the storm drain system and what measures must be taken to reduce sediment in the discharge. Some dewatering discharges may require a NPDES permit for the San Francisco Bay RWQCB. More information regarding construction dewatering is available from MCSTOPPP: BMPs for Trench Dewatering.[28]

Climate

The EIR Study Area experiences a semiarid, Mediterranean climate, which consists of hot, dry summers with low humidity and very mild winters. The area receives about 35.6 inches of rain annually, which is primarily recorded during the five-month stretch between October and April. The winter average low temperature is about 41 degrees Fahrenheit and the average summer high temperature is about 82 degrees Fahrenheit.[29]

Water Quality

Surface water quality is affected by point-source and nonpoint-source pollutants. Point source pollutants are emitted at a specific point, such as a pipe, and nonpoint-source pollutants are typically generated by surface runoff from diffuse sources, such as streets, paved areas, and landscaped areas. Point-source pollutants are controlled with pollutant discharge regulations or water discharge requirements. Nonpoint-source pollutants are more difficult to monitor and control, although they are important contributors to surface water quality in urban areas.

Stormwater runoff pollutants vary based on land use, topography, the amount of impervious surface, the amount and frequency of rainfall, and irrigation practices. Runoff in developed areas typically contains oil,

[26] Gregg Drilling, 2020. Northern California Groundwater Depth Chart. Accessed at http://www.greggdrilling.com/resources/ on October 6, 2020.

[27] State Water Resources Control Board, 2020. GeoTracker – site locations with groundwater wells within San Rafael undergoing remediation. Accessed at https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=San+Rafael%2C+CA on October 6, 2020.

[28] MCSTOPPP, 2020. Marin County Stormwater Pollution Prevention Program – Best Management Practices for Trench Dewatering. Accessed at https://www.marincounty.org/-/media/files/departments/pw/mcstoppp/development/trenchingswreqmcstopppfinal6_09.pdf?la=en on October 6, 2020.

[29] Foster Morrison, 2017, *City of San Rafael Local Hazard Mitigation Plan*, Page 2-3.

grease, and metals accumulated in streets, driveways, parking lots, and rooftops, as well as pesticides, herbicides, particulate matter, nutrients, animal waste, and other oxygen-demanding substances from landscaped areas. The highest pollutant concentrations usually occur at the beginning of the wet season during the "first flush," when early rainfall flushes out pollutants that have accumulated on hardscape surfaces during the preceding dry months.

The San Francisco Bay RWQCB monitors surface water quality through implementation of the Basin Plan and designates beneficial uses for surface water bodies and groundwater within Marin County and San Rafael. The beneficial uses for surface water bodies and groundwater within the EIR Study Area are listed in Table 4.10-2.

TABLE 4.10-2 DESIGNATED BENEFICIAL USES OF WATER BODIES IN THE EIR STUDY AREA

WATER BODY	DESIGNATED BENEFICIAL USE
Surface Water	
Gallinas Creek	COLD, RARE, WARM, WILD, REC-1, REC-2
Miller Creek	COLD, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2
San Rafael Creek	COLD, WARM, WILD, REC-1, REC-2, NAV
San Pablo Bay	IND, COMM, SHELL, EST, MIGR, RARE, SPWN, WILD, REC-1, REC-2, NAV
Groundwater	
San Rafael Valley	MUN, PRO, IND, AGR – Potential Uses
Novato Valley	MUN, PRO, IND, AGR – Potential Uses

Notes: Municipal and Domestic Water Supply (MUN), Industrial Process Water Supply (PRO), Industrial Service Water Supply (IND), Agricultural Supply (AGR), Freshwater Replenishment (FRSH), Groundwater Recharge (GWR), Cold Freshwater Habitat (COLD), Fish Migration (MIGR), Preservation of Rare and Endangered Species (RARE), Fish Spawning (SPWN), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), Noncontact Water Recreation (REC-2).
Source: San Francisco Bay RWQCB, 2017. *Water Quality Control Plan (Basin Plan).*

In addition to the establishment of beneficial uses and water quality objectives, another approach to improve water quality is a watershed-based methodology that focuses on all potential pollution sources and not just those associated with point sources. If a body of water does not meet established water quality standards under traditional point source controls, it is listed as an impaired water body under Section 303(d) of the Clean Water Act. For 303(d) listed water bodies, a limit is established that defines the maximum amount of pollutants that can be received by that water body. Listed impaired water bodies in the EIR Study Area and their associated pollutants of concern are presented in Table 4.10-3.

Once a water body has been placed on the 303(d) list of impaired waters, states are required to develop a TMDL threshold to address each pollutant causing impairment. A TMDL defines how much of a pollutant a water body can tolerate and still meet water quality standards. A TMDL has been approved by the EPA for mercury in Central San Francisco Bay and diazinon in San Rafael Creek, Miller Creek, and Gallinas Creek.

TABLE 4.10-3 LISTED IMPAIRED WATER BODIES IN SAN RAFAEL

Name	Pollutants of Concern		
San Rafael Creek	▪ Diazinon[a]		
Miller Creek	▪ Diazinon		
Gallinas Creek	▪ Diazinon		
Central San Francisco Bay	▪ Chlordane[b] ▪ DDT[a] ▪ Dieldrin[a] ▪ Dioxin Compounds[c]	▪ Furan Compounds[d] ▪ Invasive Species ▪ Mercury ▪ PCBs[e]	▪ PBDEs[f] ▪ Selenium[g] ▪ Trash
San Pablo Bay	▪ Chlordane ▪ DDT ▪ Dieldrin	▪ Dioxin Compounds ▪ Furan Compounds ▪ Invasive Species	▪ Mercury ▪ PCBs Selenium ▪ Trash

Notes:
[a] Used as an insecticide.
[b] Used as a pesticide.
[c] Burning processes, such as commercial or municipal waste incineration, backyard burning, and the use of fuels, such as wood, coal, or oil, produce dioxins. The compounds collect in high concentrations in soils and sediments.
[d] Furan is used in the formation of lacquers and as a solvent for resins.
[e] PCBs were used widely in electrical equipment like capacitors and transformers. They were banned in the US in 1979.
[f] PBDEs are fire retardant chemicals.
[g] The greatest use of selenium compounds is in electronic and photocopier components, but they are widely used in other products as well. Selenium releases to the environment have been primarily from copper smelting industries.
Source: State Water Resource Control Board, 2019, Impaired Waters.

Flood Zones

FEMA determines floodplain zones to assist cities in mitigating flooding hazards through land use planning. FEMA also outlines specific regulations for any construction within a 100-year floodplain. The 100-year floodplain is defined as an area that has a 1 percent chance of being inundated during a 12-month period. FEMA also prepares maps for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent.

In some locations, FEMA also provides measurements of base flood elevations for the 100-year flood, which is the minimum height of the flood waters during a 100-year event. Base flood elevation (BFE) is reported in feet above sea level. Depth of flooding is determined by subtracting the land's height above sea level from the base flood elevation. Areas within the 100-year flood hazard area that are financed by federally backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage.

There are two main types of flooding that occur in the EIR Study Area: (1) tidal flooding and (2) watershed flooding. Tidal and watershed flooding can also occur simultaneously.

- Tidal flooding can occur due to extreme high tides, storm surge, and/or heavy rains in combination with high tides. The result is water that overflows the top bank elevation of tidal sloughs or channels, or the crest of levees. The filling of former baylands along the coastline allowed for urban development, and the higher land elevations initially protected the areas from flooding. However, subsequent subsidence of the bayland fill reduced the level of flood protection. Levees were constructed to protect the subsided areas from tidal flooding. The two major areas susceptible to tidal flooding in the EIR Study Area are along the lower portions of Gallinas Creek and San Rafael Creek,

including the Canal neighborhood.[30] Levee overtopping and subsequent tidal flooding has occurred in the communities of Santa Venetia and low-lying areas of eastern San Rafael.[31] Tidal flooding has also occurred along Point San Pedro Road.

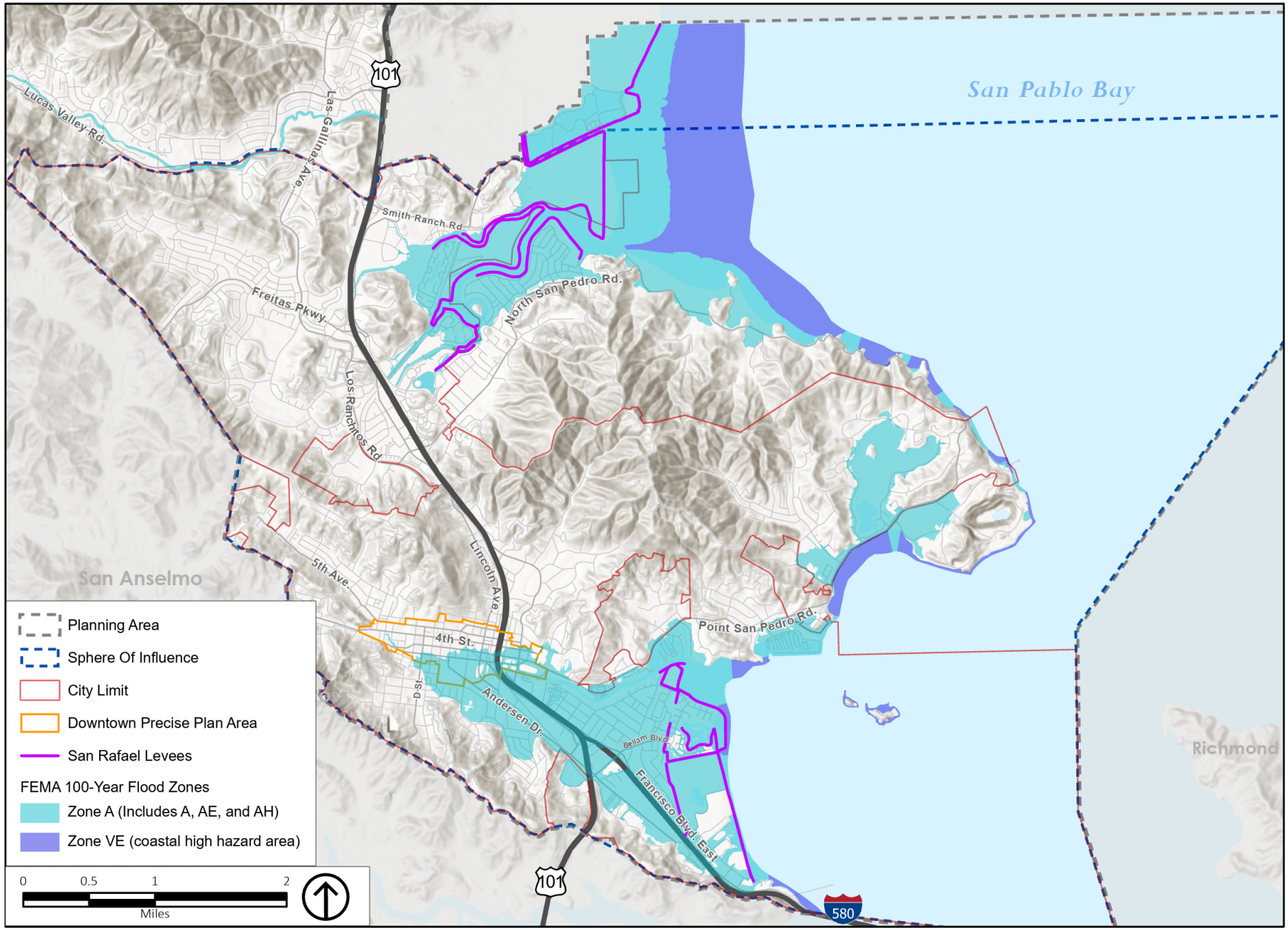
- Watershed flooding occurs with the development of former floodplains, and an increase in stormwater flow rates with an increase in impervious surfaces. Excessive rainfall amounts over a short period of time can also result in flash flooding. Mud and debris slides may occur in the hillside areas. The primary causes of watershed flooding are the local streams and rivers overtopping their banks during extreme rainfall events, coupled by the inability of the topography and City's storm drain system to handle the stormwater runoff from these events.[32]

In north San Rafael, Gallinas Creek is a major source of flooding. Other problem areas include Oleander Road, Los Gamos Road, and other roads in low-lying areas. The following areas may become isolated during heavy flooding: Point San Pedro Road near North Marin Yacht Club, Peacock Gap, and China Camp areas. Flooding has also occurred in the past on the southern tributaries to San Rafael Creek, in the Bret Harte/Picnic Valley and Irwin Street neighborhoods, and Lucas Valley Road near the intersection with Highway 101. Flooding also poses a serious threat to East San Rafael due to subsidence and consolidation of the bay muds. Much of the development in this area was constructed at or has subsided below the FEMA 100-year flood elevation.[33] The community of Santa Venetia, which is segregated from Las Gallinas Creek by levees, has experienced flooding, which has been exacerbated by hillslope debris obstructing inlet channels and pump station inlets. According to the City, numerous parcels and roads within the EIR Study Area that are not included in the FEMA 100- and 500-year floodplain maps may be subject to flooding during heavy rains.[34]

A map of the EIR Study Area locations that are within the 100-year floodplains is shown on Figure 4.10-3. The 100-year flood zone is also known as a Special Flood Hazard Area; homeowners with mortgages within the Special Flood Hazard Area are required to be protected by flood insurance. Zone A on the 100-year floodplain map includes Zones AE and AH. Zone AE is defined as an area subject to inundation by the 100-year flood event where BFEs have been calculated. Zone AH is defined as an area subject to inundation by the 100-year flood with shallow flooding (usually areas of ponding)—average depths between one and three feet—and with BFEs derived from hydraulic analyses. Also included on the map are Zones VE, defined as coastal high hazard areas, which extend offshore to the inland limit that is subject to high-velocity wave action. The boundary of Zone VE is generally based on wave heights (3 feet or greater) or wave run-up depths (3 feet or greater).

As shown on Figure 4.10-3, most of the land south of Point San Rafael Road is within the 100-year floodplain and is subject to overflow from San Rafael Creek and/or tidal flooding.[35]

[30] Foster Morrison Consulting, 2017. *San Rafael Local Hazard Mitigation Plan.* Dated June 2017.
[31] County of Marin, 2005. Flooding, Technical Background Report. Marin Countywide Plan. Dated November 2005.
[32] City of San Rafael, 2017. San Rafael Local Hazard Mitigation Plan. Dated June 2017.
[33] City of San Rafael, 2017. San Rafael Local Hazard Mitigation Plan. Dated June 2017.
[34] City of San Rafael, 2017. San Rafael Local Hazard Mitigation Plan. Dated June 2017.
[35] Federal Emergency Management Agency, Various *FIRM Maps Including 06081C0306E to 06081C309E*, http://msc.fema.gov/portal, accessed on April 29, 2019.



Source: City of San Rafael, 2019; County of Marin, 2009; ESRI, 2017; FEMA, 2017; National Levee Database, 2020; PlaceWorks, 2019.

Figure 4.10-3
FEMA 100-Year Flood Zones

The area north of North San Pedro Road is also within the 100-year floodplain and subject to overflows from Las Gallinas Creek and/or tidal flooding. The eastern portion of San Rafael in the Peacock Gap neighborhood is within the 100-year floodplain, and the southern portion of the Downtown Precise Plan Area is also within the 100-year floodplain.

The DWR is in the process of developing "best available maps" (BAM) that display 100-year, 200-year, and 500-year floodplains for all counties in the state. Different than the FEMA maps, which are used to support the National Flood Insurance Program, the BAMs are provided for informational purposes, and the 100-year floodplains are a composite of multiple mapping sources from FEMA, USACE, and DWR. This provides the community and residents with an additional tool for understanding potential flood hazards that are not currently mapped as a regulated floodplain. The BAMs for the EIR Study Area are still in the process of development, and only the 100-year floodplains are currently mapped. The maps can be found at https://gis.bam.water.ca.gov/bam/.

In the downstream reaches of Miller Creek, Gallinas Creek, and San Rafael Creek, the tidal influence of San Pablo Bay reduces the floodwater conveyance potential of the channels. As a result, flood control measures, including levees and stormwater pumping stations, have been implemented to reduce the potential for flooding and facilitate the removal of stormwater during flood events. Levees are located along the creek outlets and many of the bayfront areas. Levees reduce but do not eliminate the risk to individuals or structures behind them. Overtopping failure occurs when the flood water level rises above the crest of the levee.

The locations of levees in San Rafael are also shown on Figure 4.10-3. The levee system in the northern portions of the city extends from Miller Creek outlet to Gallinas Creek outlet and includes levees along the north side of McInnis County Park. In the southern portion of the city, the levee system extends from Pickleweed Park eastward along San Rafael Canal to I-580 along the shoreline.[36]

Although various locations within the EIR Study Area are protected from flooding by levees, FEMA's policy is to disregard any flood protection benefit provided by a levee if that levee is not certified as meeting NFIP standards for freeboard and geotechnical stability.[37] There are no levees in the City of San Rafael that are currently certified. However, the City, in conjunction with MCFCWCD and the USACE, is in the process of improving some of the levees, such as the Gallinas Creek Levee.

The MCFCWCD has designated two of the areas in the 100-year floodplain as flood control zones; these include Zone 6: San Rafael Meadows and Zone 7: Santa Venetia.[38] In Zone 6, there are no pump stations, levees, floodwall, or critical infrastructure except for creeks and drainage ditches, which typically do not flood as long as the channels are maintained and kept clear of growth and debris. This area is not within the 100-year floodplain. In 2004, Redwood Village was developed within the southern portion of this zone. The stormwater infrastructure was rerouted around the Corrillo Drive neighborhood, eliminating a

[36] FEMA,2018, *FEMA Flood Zones (Map Service)*.

[37] FEMA, 2015. *Levee Certification vs. Levee Accreditation.* Accessed at https://www.fema.gov/media-library/assets/documents/22957 on February 25, 2016.

[38] Marin County Flood Control & Water Conservation District, 2019, *Flood Control Zones*, http://www.marinwatersheds.org/flood-protection/flood-control-zones#undefined5, accessed on April 29, 2019.

significant cause of flooding in Zone 6.[39] Zone 7, Santa Venetia, has subsided due to the compression of Bay mud and is now below the high tide level. Work in Zone 7 includes regular servicing of 14 pumps at 5 pump stations, maintenance of 1.9 miles of flood protection levees, maintenance of tide gates and trash racks, and an annual vegetation maintenance program along 0.85 mile of Gallinas Creek.

Within the EIR Study Area, Conservation Corps North Bay performs annual vegetation maintenance work in creeks and ditches under the direction of the City. Sediment removal is performed on an as-needed basis before, during, and after storms. The Conservation Corps North Bay inspects and clears facilities as needed and is also available for sandbagging and/or tarping levees and creek banks, as requested.[40]

Dam Inundation Zones

There are four dams in Marin County that are in the vicinity of the city. The dam inundation areas of three of the dams show discharges with dam failure to the northwest and away from the City. The closest dam to the study area is the Phoenix Lake dam, which is approximately two miles southwest of the EIR Study Area. However, the Phoenix Lake dam has a dam inundation zone along Corte Madera Creek southwest of the EIR Study Area.[41] There are no dam inundation zones within the EIR Study Area.

Sea Level Rise

A rise in average global temperatures due largely to an increase in greenhouse gas emissions is expected to be accompanied by a rise in global sea levels. California Executive Order S-13-2008 states that all State agencies planning construction projects in areas vulnerable to sea level rise must consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks from sea level rise.[42] The *State of California Sea-Level Rise Guidance, 2018 Update* incorporates the most recent scientific findings from the Ocean Protection Council (OPC).[43] OPC predicts a range of sea level rise for San Pablo and San Francisco Bays based on risk-aversion scenarios. Risk aversion is defined as the strong inclination to avoid taking risks in the face of uncertainty.[44] Using medium-high risk aversion, OPC projects sea level rise in the San Pablo and San Francisco Bay Area to be 1.9 feet by

[39] Marin County Flood Control and Water Conservation District, May 28, 2019, Correspondence with Gerhard Epke, Senior Program Coordinator.

[40] County of Marin Public Works, 2019, *Marin Watershed Program Projects*. http://www.marinwatersheds.org/resources/projects/2015-2016-maintenance-storm-preparedness-zone-6-san-rafael-meadows, accessed on April 29, 2019.

[41] California Division of Safety of Dam, 2020, *California Dam Breach Inundation Maps,* https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2, accessed May 10, 2020.

[42] State of California, *Executive Order S-13-08,* http://gov.ca.gov/news.php?id=11036, accessed on November 17, 2015.

[43] California Natural Resources Agency, California Ocean Protection Council, 2018, http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf.

[44] California Natural Resources Agency, California Ocean Protection Council, 2018, *State of California Sea-Level Rise Guidance, 2018 Update*, http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf.

2050 and between 5.7 and 6.9 feet by 2100.[45] Most shoreline damage from sea level rise will occur as a result of coastal storms in combination with higher sea levels, which can temporarily raise sea levels by an additional two feet. The key factors that contribute to coastal flooding include high tides, storm surge, high waves, and high runoff rates from rivers and creeks.[46]

Marin County has recently completed a sea level rise vulnerability assessment with a broad coalition of civic leaders, elected officials, and concerned citizens to better understand and prepare for the potential impacts of sea level rise related to flooding and inundation and coastal storms.[47] The vulnerability assessment includes both incorporated and unincorporated areas of Marin County and assesses impacts to land use, buildings, transportation networks, utilities, recreation, and emergency services. Storm and tidal impacts are already occurring, and according to the *Marin Sea Level Rise Vulnerability Assessment*, approximately 2,121 acres, over 1,798 living units, 41 miles of road, 475 commercial parcels, and approximately 18 percent of all buildings in San Rafael will be affected by sea level rise by 2100.[48]

San Rafael recently completed their *Sea-Level Rise Adaptation Study*, which assessed existing flood risks with future sea level rise projections, developed reasonable adaptations for the City's shoreline, evaluated the cost and benefits of adaptation measures, and created a phased adaptation plan to guide implementation. This study integrated the *Marin Sea Level Rise Vulnerability Assessment* with FEMA flood hazard zones and hydraulic monitoring to determine sea level rise and flood hazards in six specific areas: Bayfront South, Canal South, Canal North, Loch Lomond, Point San Pedro Road, and Las Gallinas.[49]

Figure 4.10-4 and Figure 4.10-5 show the projected sea level rise citywide for 2050 and 2100, respectively. Figure 4.10-6 and Figure 4.10-7 show the projected sea level rise coinciding with the 100-year storm surge for 2050 and 2100, respectively. As shown, neighborhoods along the mouth of Gallinas Creek, the Bahia Vista and Canal neighborhoods, and areas near Point San Pedro are vulnerable to flooding from sea level rise and coastal storms by 2050. By 2100, the inundation area will spread farther inland along Gallinas Creek and San Rafael Creek, increasing the vulnerability of US-101 to regular flooding and inundation.

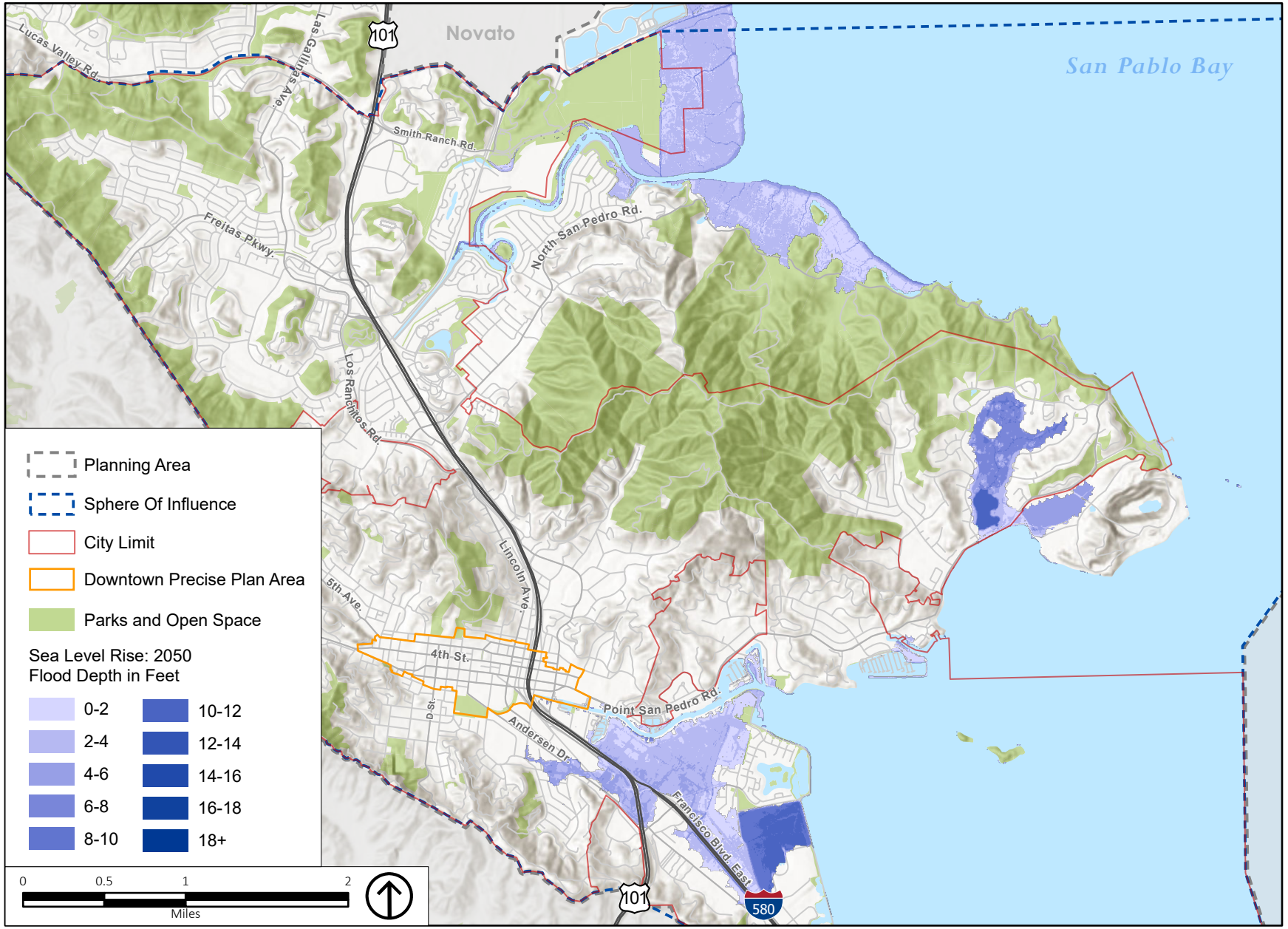
[45] California Natural Resources Agency, California Ocean Protection Council, 2018, *State of California Sea-Level Rise Guidance, 2018 Update*, http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

[46] San Francisco Bay Conservation and Development Commission, 2011, *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline.*

[47] BVB Consulting LLC, 2017, *Marin Shoreline Sea Level Rise Vulnerability Assessment*.

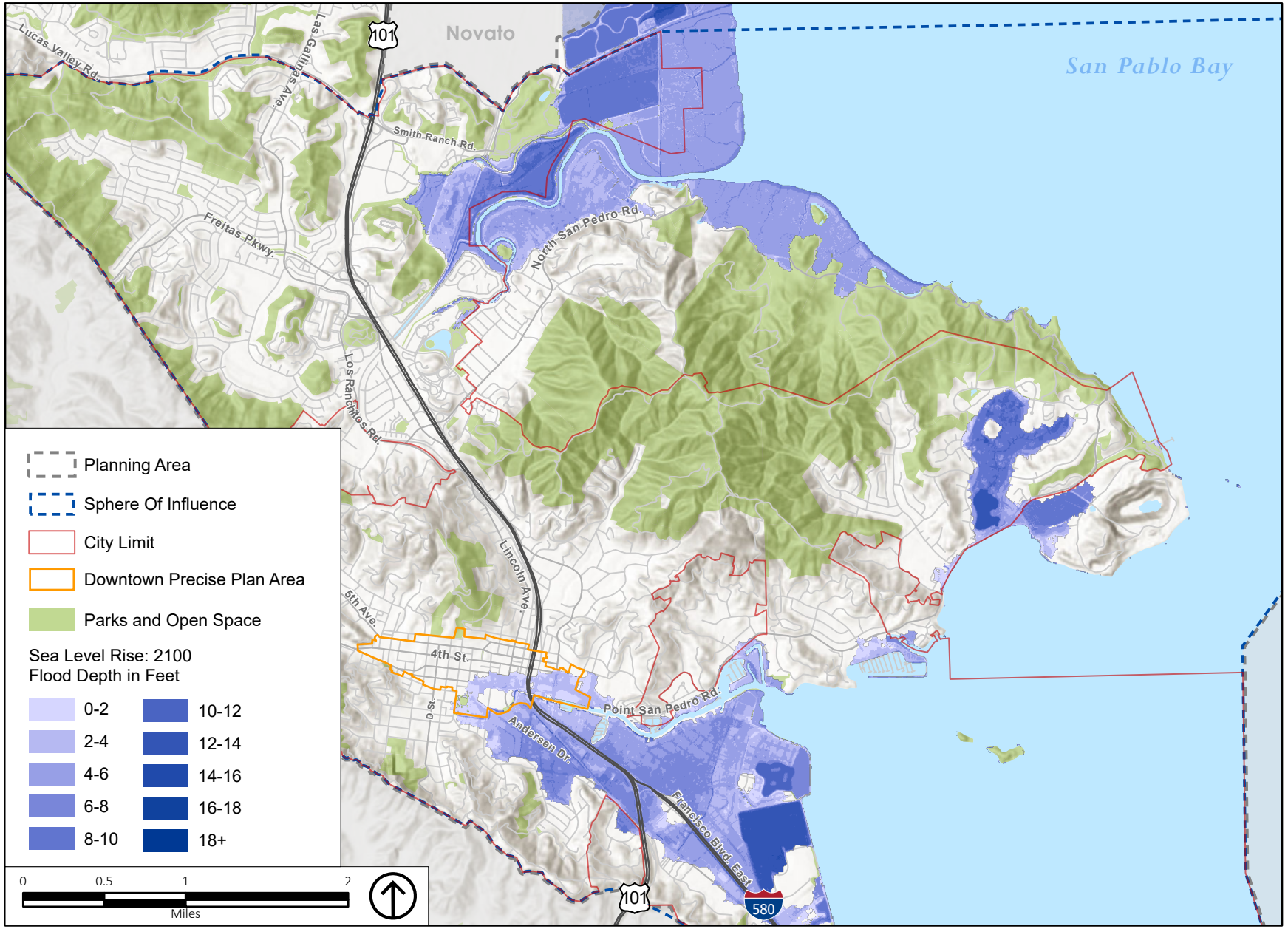
[48] BVB Consulting LLC, 2017, *Marin Shoreline Sea Level Rise Vulnerability Assessment: San Rafael Community Profile*, Page 259.

[49] Environmental Science Associates, 2020, *San Rafael Sea-Level Rise Adaptation Study*, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2020/10/San-Rafeal-SLR-Vulnerability-Study-2020Jun19.pdf.



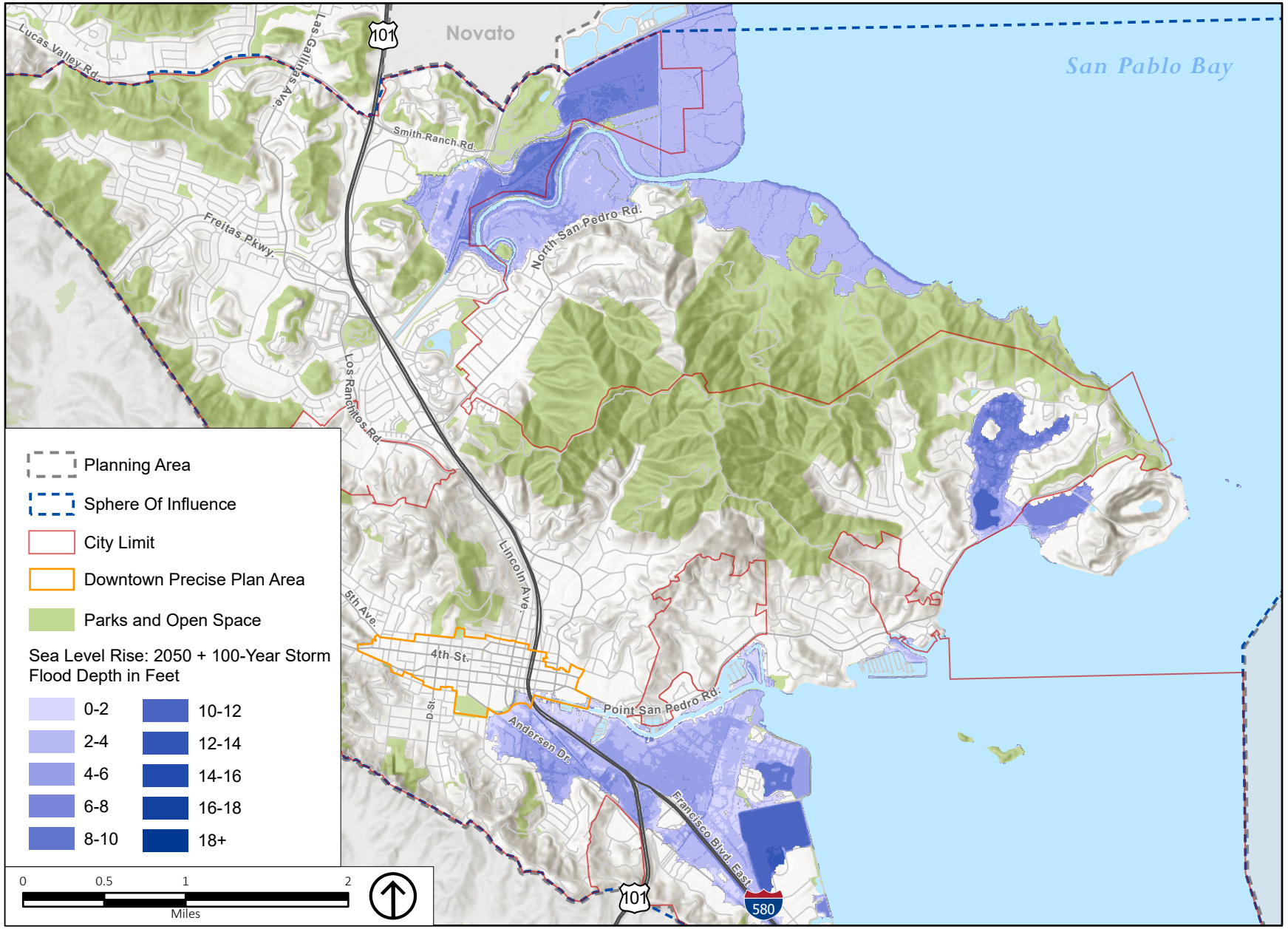
Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

Figure 4.10-4
Sea Level Rise in 2050



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

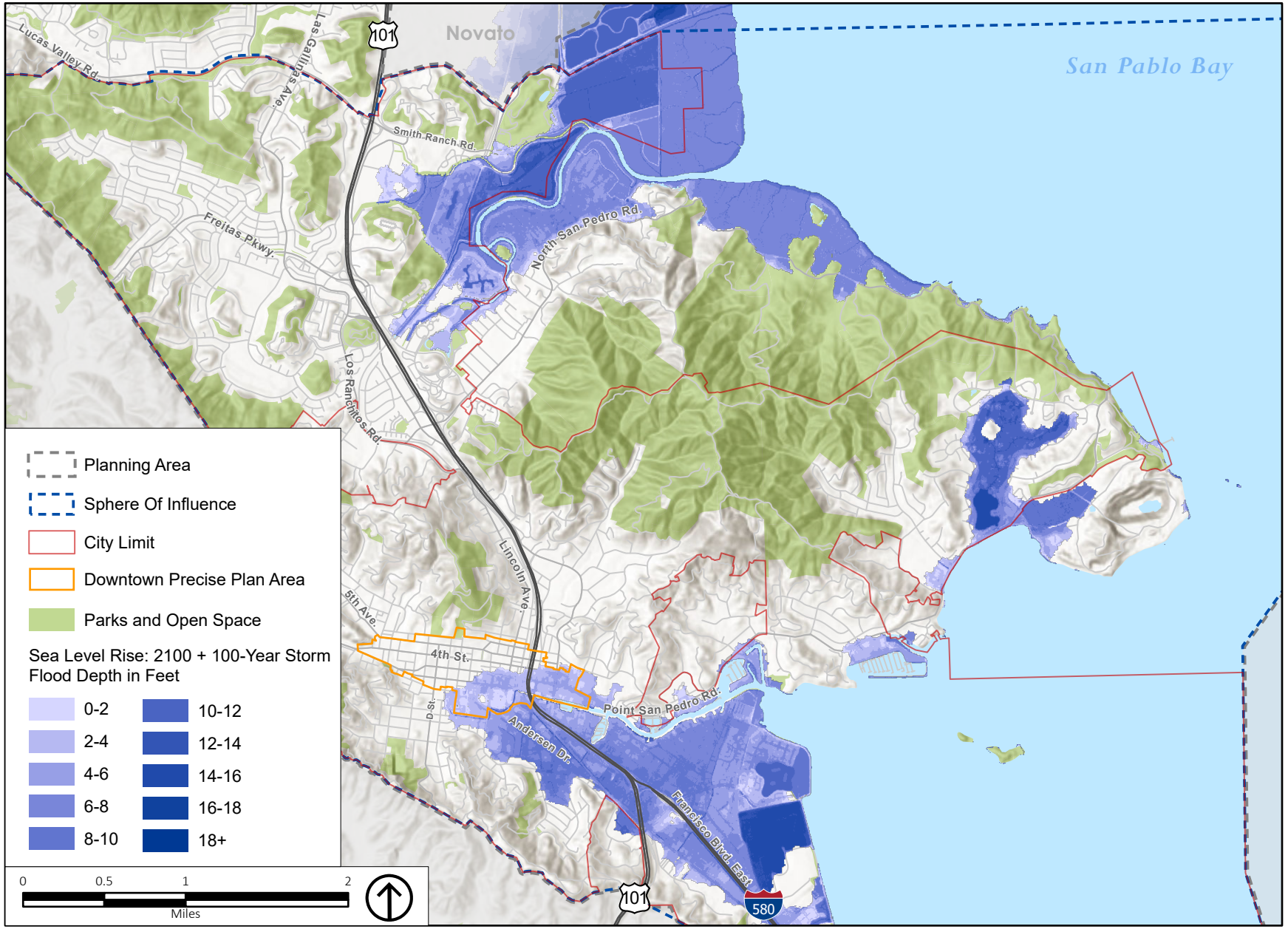
Figure 4.10-5
Sea Level Rise in 2100



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

Figure 4.10-6

Sea Level Rise in 2050 + 100-Year Storm Surge



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

Figure 4.10-7

Sea Level Rise in 2100 + 100-Year Storm Surge

Tsunami

A tsunami is a series of traveling ocean waves generated by a rare, catastrophic event, including earthquakes, submarine landslides, and submarine or shoreline volcanic eruptions. Tsunamis can travel over the ocean surface at speeds of 400 to 500 miles per hour or more, and wave heights at the shore can range from inches to 50 feet. Factors influencing the size and speed of a tsunami include the source and magnitude of the triggering event, as well as off-shore and on-shore topography. A bayfront levee system currently protects portions of the city from high tides and waves; however, this could be overtopped by a tsunami.[50] According to the California Office of Emergency Services and Science Application for Risk Reduction tsunami inundation maps, the northern and southern shorelines of San Rafael and a portion of the Downtown Precise Plan Area are within the tsunami inundation zone. [51] The 1964 Alaska earthquake resulted in a tsunami that caused $1 million in damages in Marin County and damaged boats in Loch Lomond Marina in San Rafael.[52] As shown on Figure 4.10-8, areas near the outlets of Gallinas Creek and San Rafael Creek, McInnis Park, and the coastal areas of the Canal, Loch Lomond, Glenwood, and Peacock Gap neighborhoods are within the tsunami inundation zone. The inundation zone extends inland from the Marin Yacht Club and Pickleweed Park to include a small portion of the Downtown Precise Plan Area. Marin County and the City of San Rafael are part of the tsunami warning system that would be implemented to evacuate and protect citizens in the unlikely event that a tsunami occurs.[53]

Seiche

A seiche is an oscillation wave generated in a closed or partially closed body of water, which can be compared to the back-and-forth sloshing in a bathtub. Seiches can be caused by winds, changes in atmospheric pressure, underwater earthquakes, tsunamis, or landslides into the water body. Bodies of water such as bays, harbors, reservoirs, ponds, and swimming pools can experience seiche waves up to several feet in height during a strong earthquake. However, for a seiche to occur in San Pablo or San Francisco Bay, the wave frequency of a tsunami would have to match the resonance frequency of the bay or harbor. The typical frequency of a tsunami is ten minutes to an hour, and the resonance frequency of the San Pablo and San Francisco Bay is somewhere between one to ten hours. Therefore, tsunamis have frequencies too short to resonate within the San Pablo and San Francisco Bay and a seiche is unlikely. However, since small harbors have a resonance frequency of 10 to 30 minutes, it is possible that a seiche could occur in San Rafael harbors, given a large magnitude earthquake.[54] There are no large bodies of water within the EIR Study Area that could trigger a seiche. Seiches associated with either Phoenix Lake or Bon Tempe Lake would have a seiche inundation zone much smaller than that of the dam inundation zone, and because the dam inundation zones do not reach the EIR Study Area, the possibility of a seiche impacting the city is negligible.

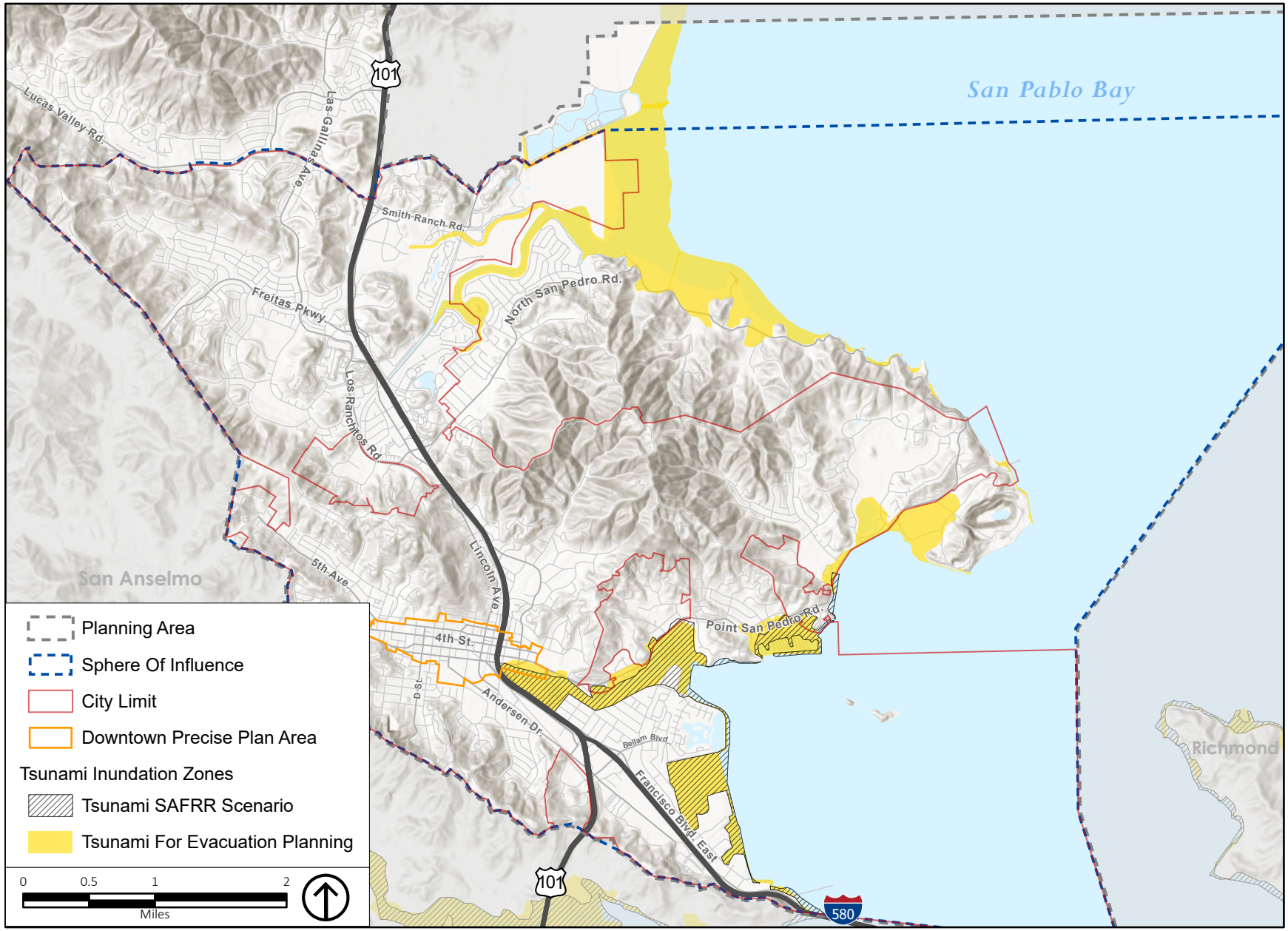
[50] Foster Morrison. 2017. City of San Rafael Local Hazard Mitigation Plan, Page 4-90.

[51] California Office of Emergency Services, 2009. *Tsunami Inundation Map for Emergency Planning, State of California – County of San Mateo, Redwood Point Quadrangle, Palo Alto Quadrangle.*

[52] Foster Morrison, 2017. City of San Rafael Local Hazard Mitigation Plan, page 4-90.

[53] Marin County Sheriff's Office of Emergency Services. 2015. Tsunami Annex. https://www.marinsheriff.org/assets/downloads/01.30.2015-Tsunami-AnnexUH.pdf

[54] Mika McKinnon, 2011. Tsunamis in Bays. Accessed at https://geomika.com/blog/2011/03/14/tsunami-in-bays/ on June 24, 2020.



Source: CalEMA, CGS, and USC, 2009; ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.10-8
Tsunami Inundation Zones

Downtown Precise Plan Area

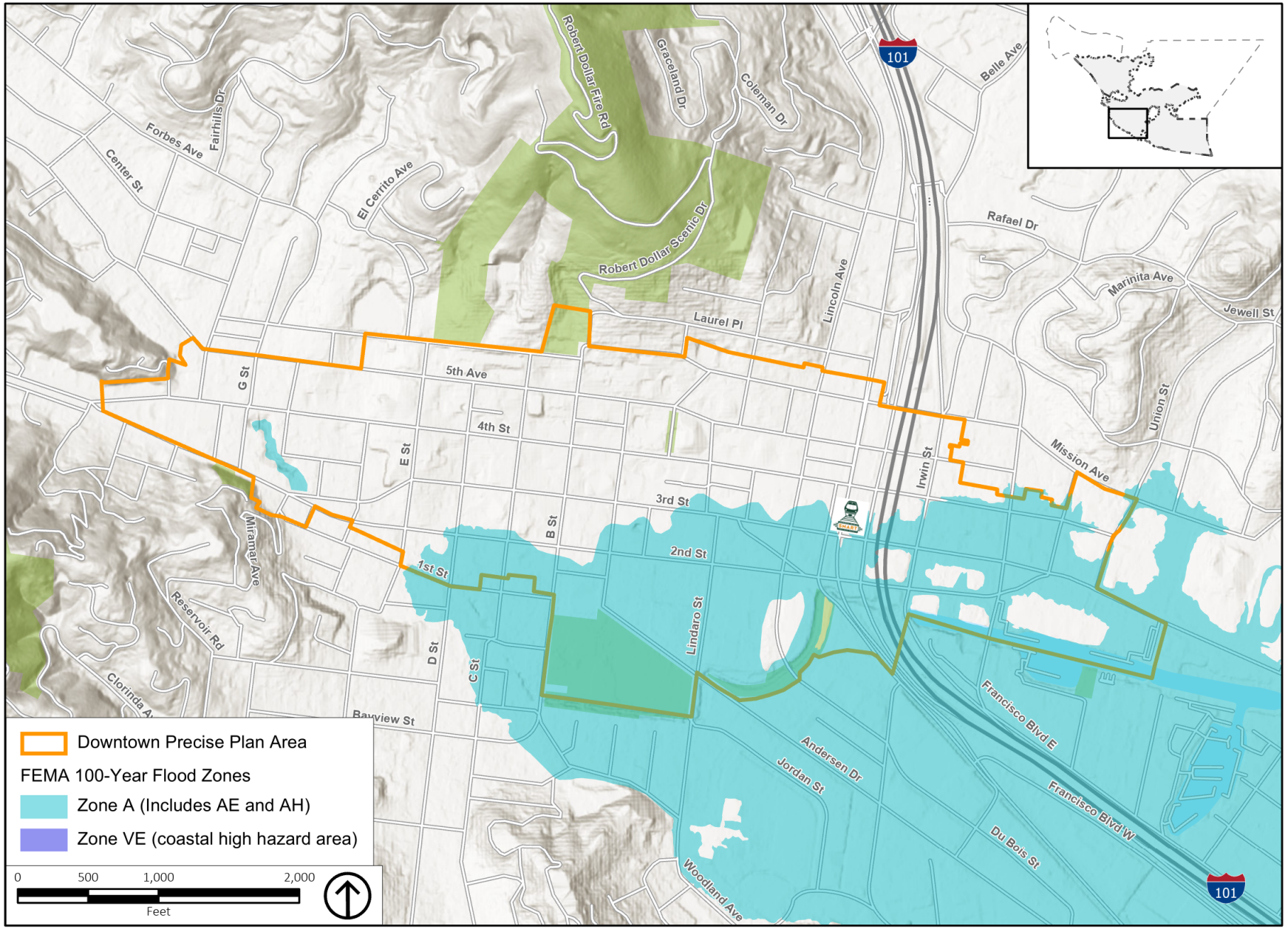
The Downtown Precise Plan Area is relatively flat, with sloping portions on the northern and western ends near Boyd Memorial Park and the West End neighborhood.[55] The Downtown Precise Plan Area is serviced by the same stormwater facilities that were described for the EIR Study Area as a whole. Stormwater pipelines in the Downtown Precise Plan Area range from 4 to 48 inches in diameter. A more detailed discussion of the storm drain system within the Downtown Precise Plan Area is provided in Chapter 4.17, Utilities and Service Systems, of this Draft EIR. A map of the portions of the Downtown Precise Plan Area that are within the 100-year floodplain is provided on Figure 4.10-9. As shown on the figure, the southern portion of the Downtown Precise Plan Area is within the 100-year floodplain. Figure 4.10-10 and Figure 4.10-11 show the projected sea level rise for the Downtown Precise Plan Area for the years 2050 and 2100, respectively. The Downtown Precise Plan Area is not impacted by sea level rise in 2050 but the southern and eastern portions of the Downtown Precise Plan Area are projected to experience significant flooding in 2100. Figure 4.10-12 and Figure 4.10-13 show the projected sea level rise coinciding with a 100-year storm surge for 2050 and 2100, respectively. As shown, by 2050 the area south of Second Street near US-101 is vulnerable to flooding with projected sea level rise plus a 100-year storm surge. By 2100, the area vulnerable to sea level rise and storm surge will spread farther north and west into the Downtown Precise Plan Area. As shown on Figure 4.10-14, the southeastern corner of the Downtown Precise Plan Area is within the tsunami inundation zone and inland neighborhoods are not in the zone.

4.10.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant hydrology and water quality impact if it would:

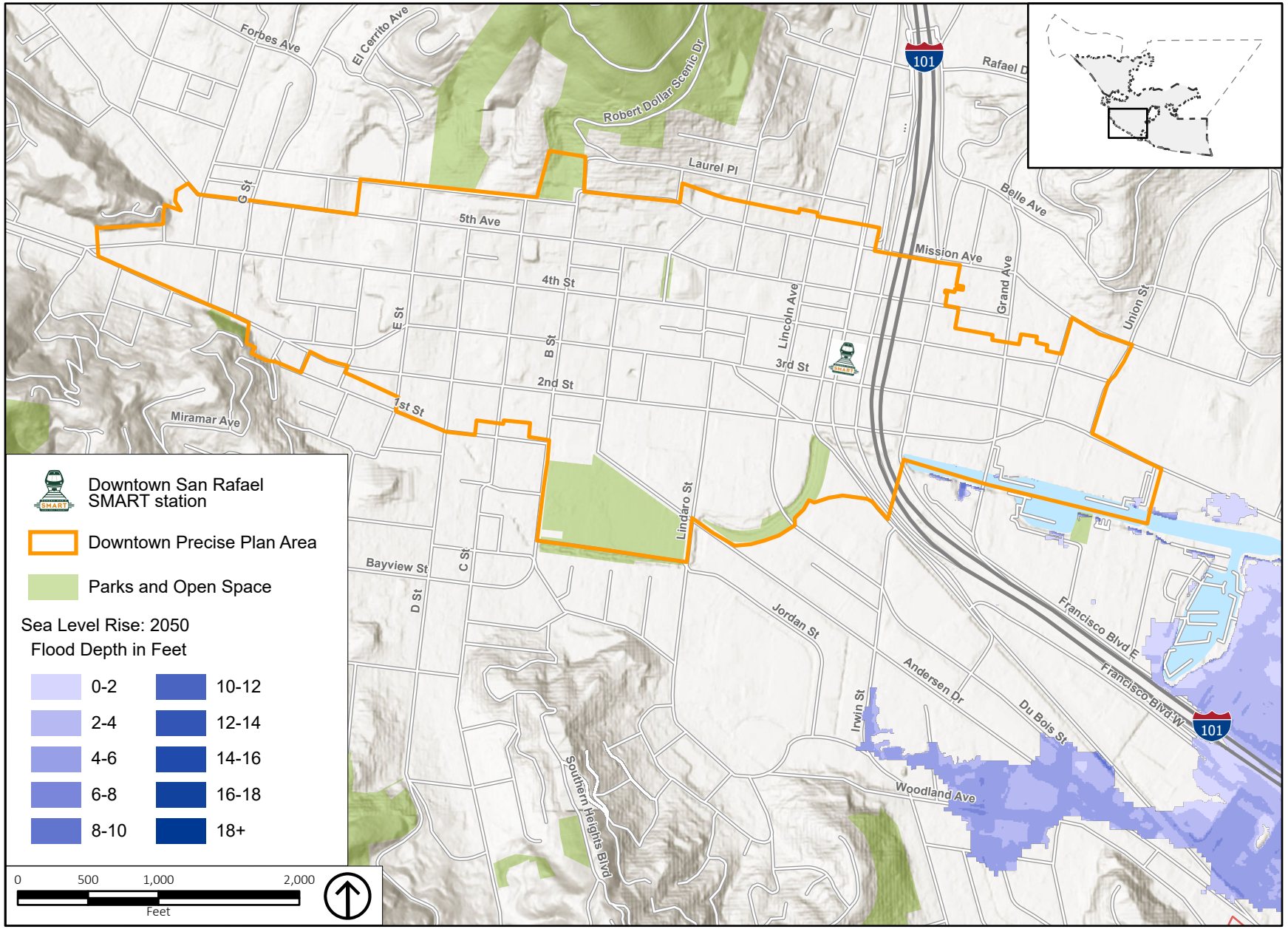
1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
   i) Result in substantial erosion or siltation on- or off-site;
   ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
   iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
   iv) Impede or redirect flood flows.
4. Risk release of pollutants due to project inundation if in a flood hazard, tsunami, or seiche zones.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.
6. Result in significant cumulative impacts related to hydrology and water quality.

[55] ESRI 2013, *Terrain: Slope Map*, http://tpc.maps.arcgis.com/home/item.html?id=a1ba14d09df14f42ad6ca3c4bcebf3b4, accessed on April 29, 2019.



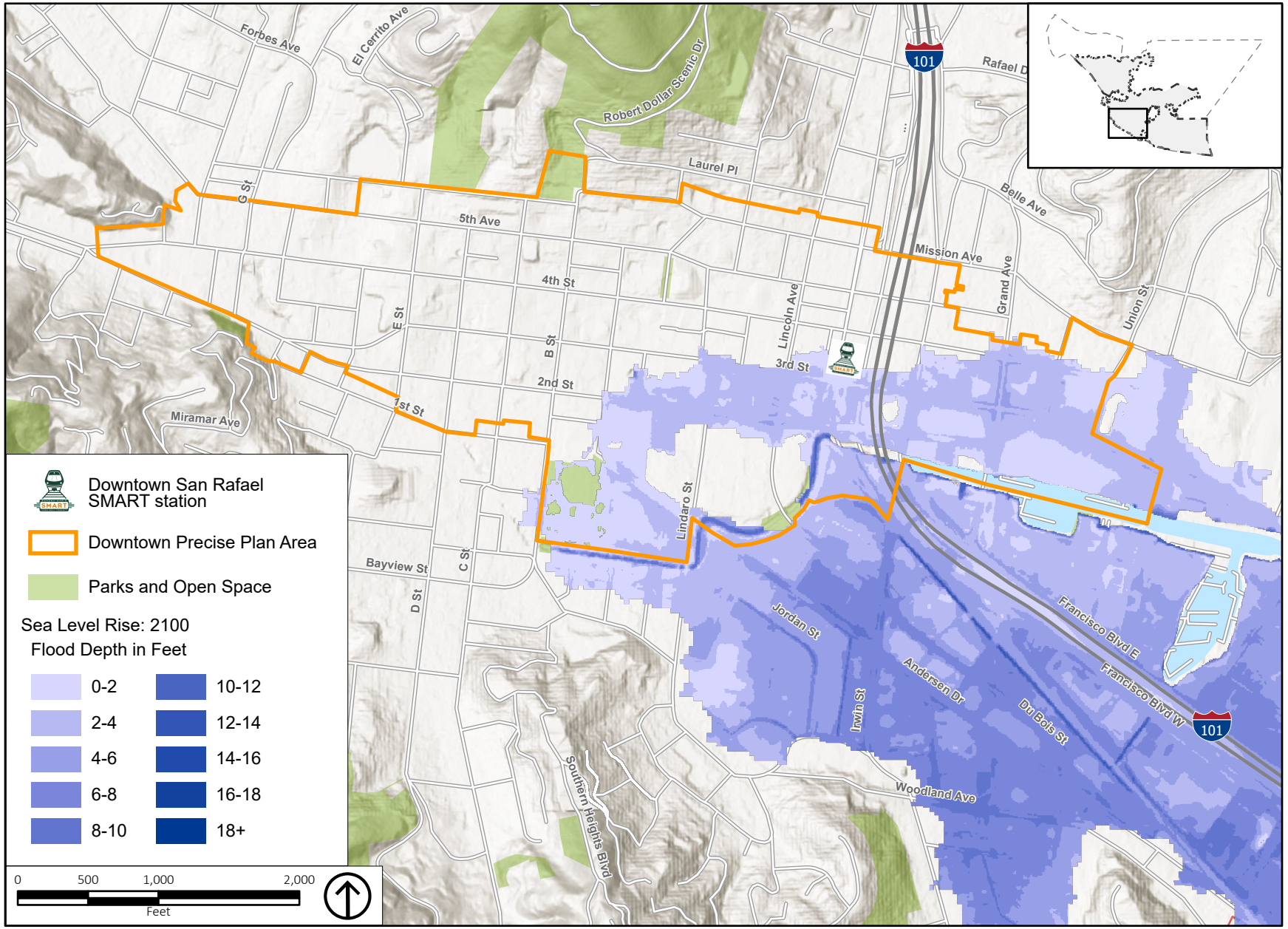
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; FEMA, 2017; PlaceWorks, 2019.

Figure 4.10-9
Downtown FEMA 100-Year Flood Zones



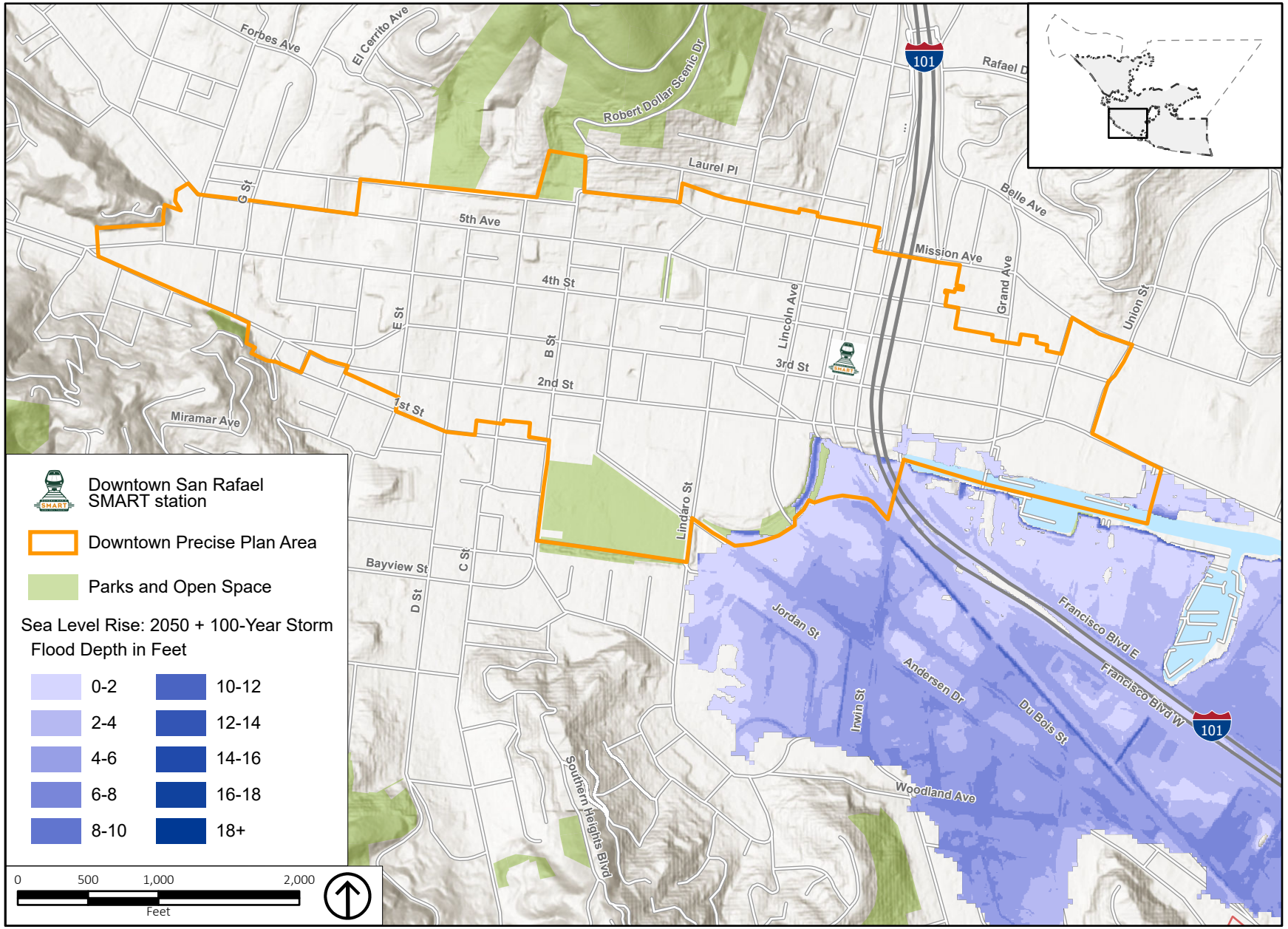
Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

Figure 4.10-10
Downtown Sea Level Rise in 2050



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

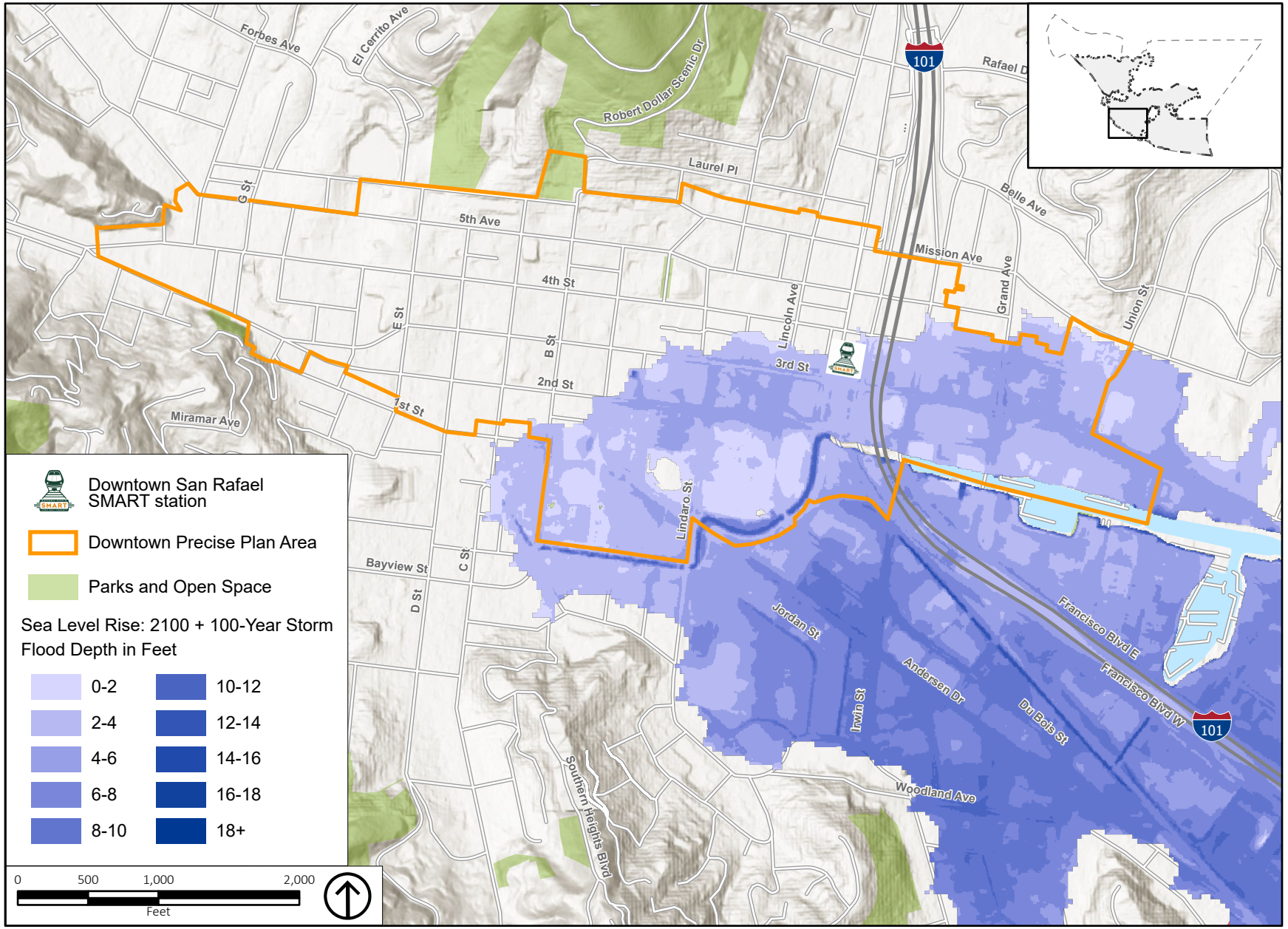
Figure 4.10-11
Downtown Sea Level Rise in 2100



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

Figure 4.10-12

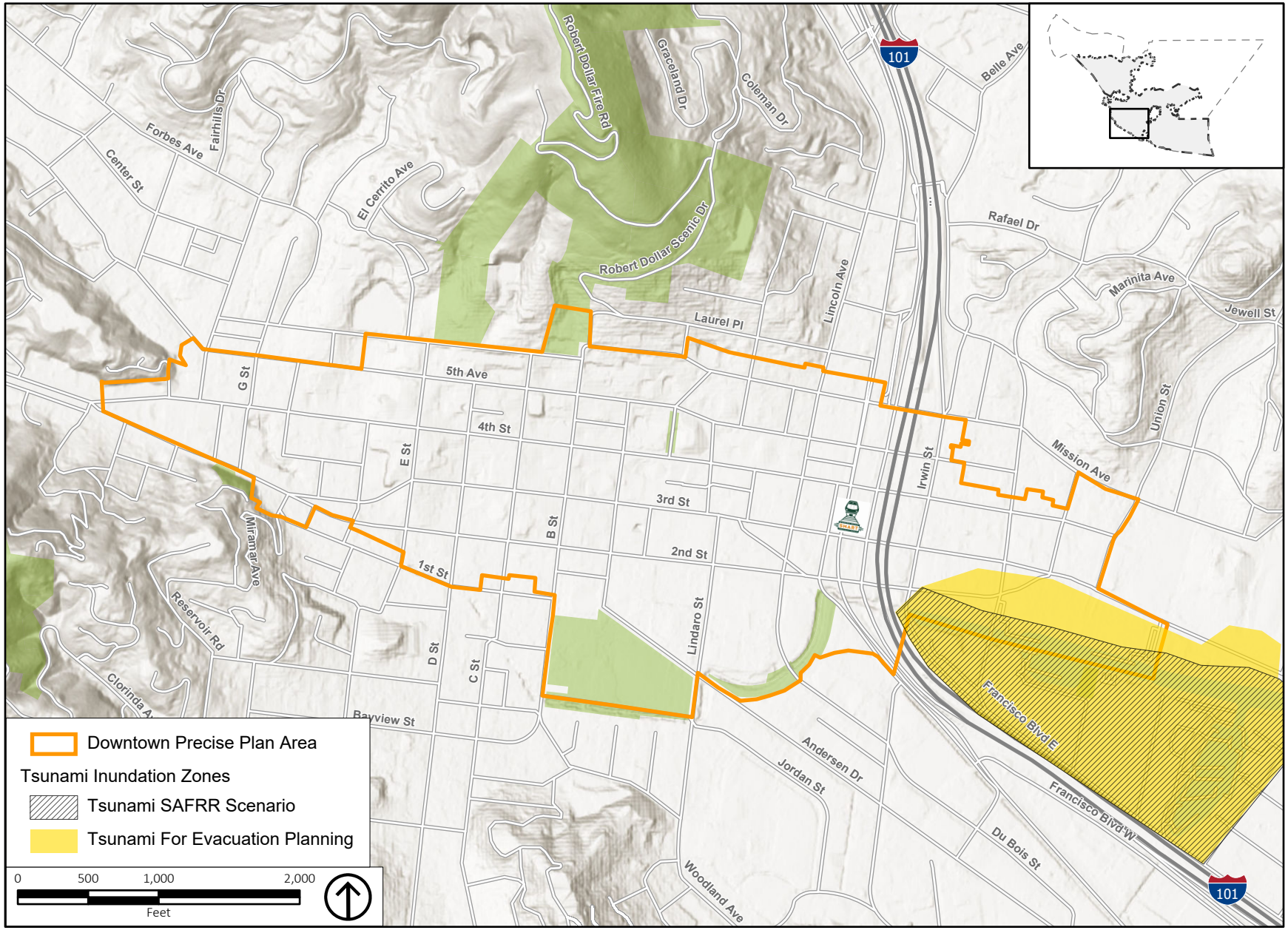
Downtown Sea Level Rise in 2050 + 100-Year Storm Surge



Source: City of San Rafael, 2019; CoSMoS, 2016; County of Marin, 2009; ESRI, 2017; PlaceWorks, 2019.

Figure 4.10-13

Downtown Sea Level Rise in 2100 + 100-Year Storm Surge



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.10-14
Downtown Tsunami Inundation Zones

4.10.3 IMPACT DISCUSSION

HYD-1 Implementation of the proposed project could violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

General Plan 2040

Discharges from Construction Sites to Stormwater

Buildout of the proposed General Plan 2040 would involve soil disturbance, construction, and operation of developed land uses that could generate pollutants affecting stormwater. Clearing, grading, excavation, and construction activities associated with the proposed General Plan 2040 have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials, such as fuels, solvents, and paints, may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, future development pursuant to the proposed General Plan 2040 would require compliance with the Construction General Permit (CGP) Water Quality Order 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ), which includes the preparation and implementation of a SWPPP. A SWPPP requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction and prevent contaminants from reaching receiving water bodies. The SWRCB mandates that projects that disturb one or more acres of land must obtain coverage under the Statewide CGP. The CGP also requires that prior to the start of construction activities, the project applicant must file PRDs with the SWRCB, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The construction contractor is required to maintain a copy of the SWPPP at the site and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB. Categories of potential BMPs that would be implemented for the proposed General Plan 2040 are described in Table 4.10-4.

Submittal of the PRDs and implementation of the SWPPP throughout the construction phase of development pursuant to the proposed General Plan 2040 will address anticipated and expected pollutants of concern from construction activities. Furthermore, future projects would abide by the requirements of SRMC Chapter 9.30, which specifies construction-phase BMPs to prevent the discharge of contaminants to stormwater during construction and requires an ESCP to be prepared for review and approval by the City. As a result, water quality impacts associated with construction activities would be less than significant.

TABLE 4.10-4 CONSTRUCTION BEST MANAGEMENT PRACTICES TO PREVENT EROSION

Category	Purpose	Examples
Erosion Controls and Wind Erosion Controls	▪ Use project scheduling and planning to reduce soil or vegetation disturbance (particularly during the rainy season) ▪ Prevent or reduce erosion potential by diverting or controlling drainage ▪ Prepare and stabilize disturbed soil areas	Scheduling, preservation of existing vegetation, hydraulic mulch, hydroseeding, soil binders, straw mulch, geotextile and mats, wood mulching, earth dikes and drainage swales, velocity dissipation devices, slope drains, streambank stabilization, compost blankets, soil preparation/roughening, and non-vegetative stabilization
Sediment Controls	▪ Filter out soil particles that have been detached and transported in water	Silt fence, sediment basin, sediment trap, check dam, fiber rolls, gravel bag berm, street sweeping and vacuuming, sandbag barrier, straw bale barrier, storm drain inlet protection, manufactured linear sediment controls, compost socks and berms, and biofilter bags
Wind Erosion Controls	▪ Apply water or other dust palliatives to prevent or minimize dust nuisance	Dust control soil binders, chemical dust suppressants, covering stockpiles, permanent vegetation, mulching, watering, temporary gravel construction, synthetic covers, and minimization of disturbed area
Tracking Controls	▪ Minimize the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits, and entrance/outlet tire wash
Nonstorm Water Management Controls	▪ Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment ▪ Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges	Water conservation practices, temporary stream crossings, clear water diversions, illicit connection/discharge, potable and irrigation water management, and the proper management of the following operations: paving and grinding, dewatering, vehicle and equipment cleaning, fueling and maintenance, pile driving, concrete curing, concrete finishing, demolition adjacent to water, material over water, and temporary batch plants
Waste Management and Controls (i.e., good housekeeping practices)	▪ Manage materials and wastes to avoid contamination of stormwater	Stockpile management, spill prevention and control, solid waste management, hazardous waste management, contaminated soil management, concrete waste management, sanitary/septic waste management, liquid waste management, and management of material delivery storage and use

Source: Compiled by PlaceWorks from information provided in the California Stormwater Quality Association's Construction BMP Handbook.

Discharges from Developed Land Uses (Post-construction) to Stormwater

With the proposed land use changes, development resulting from the proposed General Plan 2040 may result in long-term impacts to the quality of stormwater and urban runoff, subsequently impacting downstream water quality. Developments can potentially create new sources for runoff contamination through changing land uses. As a consequence, developments within the EIR Study Area as a whole may have the potential to increase the post-construction pollutant loadings of certain constituent pollutants associated with the proposed land uses and their associated features, such as landscaping and plaza areas.

To help prevent long-term impacts associated with land use changes and in accordance with the requirements of the BASMAA Post-Construction Manual and the Phase II Small MS4 permit (Order No. 2013-0001-DWQ), designated new development and significant redevelopment projects must incorporate low-impact development (LID)/site design and BMPs to address post-construction stormwater runoff. Table 4.10-5 summarizes the minimum requirements for new projects or redevelopment projects.

In addition, projects that create and/or replace one acre or more of impervious surfaces must comply with the hydromodification requirements specified in the E.12 provisions of the Phase II Small MS4 permit. These requirements include implementing site design measures to achieve infiltration, evapotranspiration, and/or harvesting/reuse of the 85th percentile 24-hours storm runoff event to the extent feasible and treatment of the remaining runoff with bioretention facilities. The hydromodification provisions also require that post-project runoff does not exceed pre-project runoff for the 2-year, 24-hour storm event.

TABLE 4.10-5 PHASE II MS4 PERMIT REQUIREMENTS

Type of Project	Project Requirements
Single-Family Homes [a, b] Projects that create or replace 2,500 square feet (SF) or more of impervious surface. **Small Projects** [b] Projects that create or replace between 2,500 and 5,000 SF of impervious surface.	Implement at least one measure to reduce runoff, for example by dispersing runoff to landscape or using pervious pavements. Additional Requirements: ▪ Limit clearing, grading, and soil compaction. ▪ Minimize impervious surfaces. ▪ Conserve natural areas of the site as much as possible consistent with local General Plan policies. ▪ Comply with stream setback ordinances/requirements. ▪ Protect slopes and channels against erosion.
Regulated Projects, other than single-family homes, [a] that create or replace 5,000 SF or more of impervious surface. [c]	Site Design/Runoff Reduction Measures (above), plus: ▪ Route remaining runoff to bioretention or other facilities sized and designed according to the criteria in Chapter 4 of the BASMAA Post-Construction Manual. ▪ Identify potential sources of pollutants and implement corresponding source control measures in Appendix A of the BASMAA Post-Construction Manual. ▪ Provide for ongoing maintenance of bioretention facilities.

Notes:
[a.] Single-family homes (determined by planning department) that are not part of a larger plan of development.
[b.] Single Family Homes or Small Projects may be required to follow requirements for Regulated Projects where deemed appropriate by the municipality based on the nature and extent of the proposed project
[c.] Includes roads and linear utility projects that create 5,000 SF or more of newly constructed, contiguous impervious surface.
Source: Bay Area Stormwater Management Agencies Association (BASMAA) Post-Construction Manual, 2019.

All regulated projects are required to prepare a Stormwater Control Plan or "SCP" that demonstrates that the project incorporates site design measures and treatment facilities that will:

- Minimize imperviousness
- Retain or detain stormwater
- Slow runoff rates
- Reduce pollutants in post-development runoff

In particular, the SCP would show that all runoff from impervious areas is either dispersed to landscape or routed to a properly designed LID treatment facility.[56] LID is an approach to land development (or redevelopment) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features and minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. There are many practices that have been used to adhere to these principles, such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions.

Since the proposed General Plan 2040 does not include specific or detailed development plans, SCPs are not required at this time. New development and redevelopment projects within the EIR Study Area will be required to prepare SCPs consistent with the guidance in the BASMAA Post-Construction Manual and the Phase II MS4 permit at the time of project application.

As part of the statewide mandate to reduce trash within receiving waters, the City is required to adhere to the requirements of the California Trash Amendments. The requirements include the installation and maintenance of trash screening devices at all public curb inlets, grate inlets, and catch basin inlets. The trash screening devices must be approved by the local agency and be consistent with the minimum standards of the Trash TMDL.

Additionally, all development pursuant to the proposed General Plan 2040 shall comply with the requirements of the SRMC, which prohibits illicit connections to the storm drainage system and forbids prohibited discharges. All development that discharge storm water associated with industrial activity shall also comply with the requirements of the General Industrial Permit (Order No. CAS000001). Development that involves the installation or decommissioning of water wells shall do so in accordance with Section 13751 of the Water Code. As stated previously, the SRMC Section 9.30.151 requires submittal and implementation of an SCP for new or significant redevelopment projects, subject to approval by the City and in accordance with the BASMAA Post-Construction Manual and the Phase II Small MS4 Permit.

The proposed Conservation and Climate Change (C), Safety and Resilience (S), and Community Services and Infrastructure (CSI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to water quality. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on water quality and wastewater discharge:

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

[56] Bay Area Stormwater Management Agencies Association, January 2019, *BASMAA Post-Construction Manual*, https://www.countyofnapa.org/DocumentCenter/View/3780/Bay-Area--Stormwater-Management-Agencies-Association-BASMAA-Post-Construction-Manual-PDF, accessed May 10, 2020.

- Policy C-3.1: Water Quality Standards: Continue to comply with local, state and federal water quality standards.
  - Program C-3.1A: Interagency Coordination. Coordinate with the local, state, and federal agencies responsible for permitting discharges to San Rafael's creeks and surface waters, monitoring water quality, and enforcing adopted water quality standards and laws.
- Policy C-3.2: Reduce Pollution from Urban Runoff: Require Best Management Practices (BMPs) to reduce pollutants discharged to storm drains and waterways. Typical BMPs include reducing impervious surface coverage, requiring site plans that minimize grading and disturbance of creeks and natural drainage patterns, and using vegetation and bioswales to absorb and filter runoff.
  - Program C-3.2A: Countywide Stormwater Program. Continue to participate in the countywide stormwater pollution prevention program and comply with its performance standards.
  - Program C-3.2B: Reducing Pollutants in Runoff. Continue to reduce the discharge of harmful materials to the storm drainage system through inspections, enforcement programs, reduced use of toxic materials, and public education.
  - Program C-3.2C: Construction Impacts. Continue to incorporate measures for stormwater runoff control, management, and inspections in construction projects and require contractors to comply with accepted pollution prevention planning practices. Provisions for post-construction stormwater management also should be included.
  - Program C-3.2D: System Improvements. Improve storm drainage performance through regular maintenance and clean-out of catch basins, installation of trash capture devices, a City street sweeping program, and prioritizing Trash Reduction Implementation measures, including installation of trash capture devices. When existing drainage lines are replaced, design changes should be made as needed to increase capacity to handle intensifying storms and expected sea level rise impacts.
  - Program C-3.2E: Pesticide and Fertilizer Management. On City property, reduce or eliminate the use of toxic pesticides and fertilizers. Ensure that the application of pesticides follows all applicable rules and regulations and is performed through a transparent process in which the public receives early notification.
  - Program C-3.2F: Monitoring. Support ongoing water quality testing in San Rafael's creeks and waterways to evaluate the effectiveness of existing programs and determine where additional pollution control measures may be needed.
- Policy C-3.3: Low Impact Development: Encourages construction and design methods that retain stormwater on-site and reduce runoff to storm drains and creeks.
  - Program C-3.3A: Development Review. Provide guidance to developers, contractors and builders on the use of rain gardens, bioswales and bio-retention facilities, permeable pavers, grass parking lots, and other measures to absorb stormwater and reduce runoff rates and volumes.
  - Program C-3.3B: Non-Traditional Gardens. Evaluate best practices in the use of roof gardens, vertical gardens/ green walls, pollinator gardens and other measures that increase the City's capacity to sequester carbon, plant trees, and enhance environmental quality. Encourage the incorporation of such features in new development.
- Policy C-3.4: Green Streets. Requires the City to design streets and infrastructure so they are more compatible with the natural environment, mitigate urban heat island effects, and have fewer negative impacts on air and water quality, flooding, climate, and natural habitat.

- Program C-3.4A: Green Streets Planning. Develop a Green Streets Plan that includes policy guidance, tools, analytics, and funding mechanisms to create more sustainably designed street and storm drainage systems. Street and drainage system improvements should support City conservation and climate change goals.
- Program C-3.4B: Funding. Identify and apply for grants and federal, state, and regional funds to upgrade stormwater facilities, rehabilitate roads, and implement other Green Streets initiatives.

- Policy C-3.5: Groundwater Protection. Protect San Rafael's groundwater from the adverse effects of urban uses. Encourage opportunities for groundwater recharge to reduce subsidence and water loss, and support water-dependent ecosystems.
  - Program C-3.5A: Underground Tank Remediation. Continue efforts to remediate underground storage tanks and related groundwater hazards. Avoid siting new tanks in areas where they pose hazards, including areas prone to sea level rise.

Goal S-2: Resilience to Geologic Hazards. Minimize potential risks associated with geologic hazards, including earthquake-induced ground shaking and liquefaction, landslides, erosion, sedimentation, and settlement.

- Policy S-2.5: Erosion Control. Requires appropriate control measures in areas susceptible to erosion, in conjunction with proposed development. Erosion control measures should incorporate best management practices (BMPs) and should be coordinated with requirements for on-site water retention, water quality improvements, and runoff control.
  - Program S-2.5A: Erosion and Sediment Control Plans. Require Erosion and Sediment Control Plans (ESCPs) for projects meeting the criteria defined by the Marin County Stormwater Pollution Prevention Program, including those requiring grading permits and those with the potential for significant erosion and sediment discharges. Projects that disturb more than one acre of soil must prepare a Stormwater Pollution Prevention Plan, pursuant to State law.
  - Program S-2.5B: Grading During the Wet Season. Avoid grading during the wet season due to soil instability and sedimentation risks. Require that development projects implement erosion and/or sediment control measures and runoff discharge measures based on their potential to impact storm drains, drainageways, and creeks.

- Policy S-2.6: Septic Systems. Discourage the use of septic systems within San Rafael's Planning Area. If no other alternatives exist, then soil tests shall be required to determine if soils are suitable for a septic system or other innovative means of onsite wastewater disposal. . In hillside areas, an evaluation of the impact of additional water from a septic system on hillside stability shall be required. New or improved septic systems shall be designed by a registered civil engineer that specializes in septic design.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.4: Sustainable Design. Plan, design, and operate infrastructure to minimize non-renewable energy and resource consumption, improve environmental quality, promote social equity, and reduce greenhouse gas emissions. An evaluation of costs and benefits must be a factor in all improvements. This includes the potential costs of inaction and potential for "avoided costs," particularly with respect to climate change.

- Program CSI-4.4A: Public Space and Infrastructure. Seek opportunities to improve environmental quality in the design of streets, infrastructure, and public spaces. For example, public space improvements provide an opportunity to retain and treat stormwater through groundwater infiltration and subsurface water storage.
- Program CSI-4.4B: Reducing Impervious Surfaces. Pursue porous pavement, rain catchment areas, and similar elements that reduce runoff.

Therefore, with the implementation of these policies in conjunction with State and local regulatory requirements, potential future development would not violate water quality standards or waste discharge requirements for both construction and operational phases, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Roughly half of the proposed development through horizon year 2040 is anticipated to occur in the Downtown Precise Plan Area, which is a highly developed and urbanized area of the city. Potential future development is this area would occur on a limited number of vacant parcels in the form of infill/intensification on sites already developed and/or underutilized or in close proximity to existing development. Much like potential future development in the remainder of the city, new development or redevelopment within the Downtown Precise Plan Area would be required to comply with the General Plan 2040 goals, policies, and programs as well as State and local regulatory requirements that would minimize impacts to water quality during both operation and construction phases.

Within the Downtown Gateway sub-area of the Downtown Precise Plan, future projects such as an urban wetland could be suitable on the southern edge near US-101, south of Second Street and east of Lincoln Avenue. An urban wetland would help alleviate local flooding during the rainy season and to combat sea-level rise in the future. An urban wetland project would require parcel acquisition along San Rafael Creek. An urban wetland could be designed to widen the connection of Irwin Creek and San Rafael Creek and create a natural downtown amenity.

Compliance with these regulatory requirements would ensure that development in the Downtown Precise Plan Area would not violate any water quality standards or waste discharge requirements for both construction and operational phases, and impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

HYD-2	**Implementation of the proposed project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.**

General Plan 2040

Implementation of the proposed project would result in a significant environmental impact if it would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that

there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. New development under the proposed General Plan 2040 could result in an increase in impervious surfaces, thus reducing groundwater recharge. Also, new projects that involve construction dewatering could have a temporary impact on the shallow groundwater aquifer.

Groundwater Recharge

New projects developed pursuant to the proposed General Plan 2040 are required to implement BMPs and LID measures—which include on-site infiltration—where feasible. The E.12 Post-Construction Measures in the Phase II Small MS4 Permit require site design measures, source control measures, LID standards, and hydromodification measures to be included in an SCP that must be submitted to and approved by the City. These measures minimize the impact of impervious areas by including pervious pavements, drainage to landscaped areas and bioretention areas, and the collection of rooftop runoff in rain barrels or cisterns for new development projects. These measures also increase the potential for groundwater recharge. In addition, groundwater within the EIR Study Area is not used by municipal water agencies and is limited in capacity and quality.

Groundwater Use

The two groundwater basins within the EIR Study Area are categorized as low priority basins and there is no groundwater withdrawal for municipal use. Groundwater is limited to domestic and irrigation uses from private groundwater wells. The MMWD has determined that the potential for municipal groundwater use is very limited due to low production capabilities, water quality constraints, and potential water rights issues. Therefore, groundwater beneath the EIR Study Area is not currently used and is not planned to be used as a municipal water supply source by MMWD. Projects pursuant to the proposed project would receive their water supply from surface water sources and thus would not decrease groundwater supplies.

The proposed Conservation and Climate Change (C) and Community Services and Infrastructure (CSI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to groundwater. As previously listed under impact discussion HYD-1, proposed General Plan Policy C-3.5 requires the City to protect San Rafael's groundwater from the adverse effects of urban uses and encourages opportunities for groundwater recharge to reduce subsidence and water loss. Program C-3.5A requires the City to continue efforts to remediate underground storage tanks and related groundwater hazards. Program CSI-4.4A requires the City to seek opportunities to improve environmental quality in the design of streets, infrastructure, and public spaces, which could include public space improvements that provide opportunities to retain and treat stormwater through groundwater infiltration and subsurface water storage. Program CSI-4.4B requires the City to pursue porous pavement, rain catchment areas, and similar elements that reduce runoff, which would also support groundwater recharge.

Potential future development as a result of implementation of the General Plan 2040 would not use groundwater supplies or interfere with groundwater recharge, and General Plan 2040 includes goals, policies, and programs that would further protect groundwater; therefore, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As shown on Figure 4.10-2, a small portion of the San Rafael Valley groundwater basin is within the southern edge of the Downtown Precise Plan Area. However, groundwater within this groundwater basin is not used by municipal water agencies and is limited in capacity and quality. Similar to the EIR Study Area requirements, adherence to E.12 provisions in the Phase II Small MS4 Permit require site design measures, source control measures, LID standards, and hydromodification measures to be implemented for new construction or reconstruction, which would increase the potential for groundwater recharge in the Downtown Precise Plan Area. Therefore, potential future development in the Downtown Precise Plan Area would not use groundwater supplies or interfere with groundwater recharge, and the goals, policies, and programs of the General Plan 2040 that protect groundwater would also apply to the Downtown Precise Plan Area; therefore, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-3	**Implementation of the proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.**

General Plan 2040

Erosion and Siltation

New development or redevelopment within the EIR Study Area and changes in land use could result in an increase in impervious surfaces. This, in turn, could result in an increase in stormwater runoff, higher peak discharges to drainage channels, and the potential to cause erosion or siltation in drainage swales and streams. Increases in tributary flows can exacerbate creek bank erosion or cause destabilizing channel incision.

All potential future development pursuant to the proposed General Plan 2040 would be required to implement construction-phase BMPs as well as post-construction site design, source control measures, and treatment controls in accordance with the requirements of the CGP, the SRMC, the Phase II MS4 Permit, and the BASMAA Post-Construction Manual. Typical construction BMPs include silt fences, fiber rolls, catch basin inlet protection, water trucks, street sweeping, and stabilization of truck entrance/exits. Each new development or redevelopment project that disturbs one or more acre of land would be

required to prepare and submit a SWPPP to the SWRCB that describes the measures to control discharges from construction sites. In addition, the City requires preparation and submittal of an ESCP for review prior to the issuance of grading permits.

Once potential future development projects have been constructed, there are Provision E.12 requirements in the Phase II Small MS4 permit for new development or redevelopment projects that must be implemented and include site design measures, source control measures, LID, and treatment measures that address stormwater runoff and would reduce the potential for erosion and siltation. Site design measures include limits on clearing, grading, and soil compaction; minimizing impervious surfaces; conserving the natural areas of the site as much as possible; complying with stream setback ordinances; and protecting slopes and channels from erosion. LID measures include the use of permeable pavements, directing runoff to pervious areas, and the construction of bioretention areas. The SCP must also include operation and maintenance procedures and an agreement to maintain any stormwater treatment and control facilities for perpetuity. Adherence to the streambed alteration agreement process under Sections 1601 to 1606 of the California Fish and Game Code would further reduce erosion and siltation impacts that may occur due to streambed alterations. Compliance with these regional and local regulatory requirements will ensure that erosion and siltation impacts from new development and redevelopment projects would be *less than significant*.

Flooding On- or Off-Site

New development and/or redevelopment and changes in land uses could result in an increase in impervious surfaces, which in turn could result in an increase in stormwater runoff, higher peak discharges to drainage channels, and the potential to cause nuisance flooding in areas without adequate drainage facilities. However, all potential future development must comply with the requirements of the Phase II MS4 Permit and the BASMAA Post-Construction Manual. Regulated projects must implement BMPs, including LID BMPs and site design BMPs, which effectively minimize imperviousness, retain or detain stormwater on-site, decrease surface water flows, and slow runoff rates. Projects that create and/or replace one acre of impervious surface must also adhere to the hydromodification requirements of the BASMAA Post-Construction Manual to ensure that post-project runoff does not exceed pre-project runoff for the 2-year, 24-hour storm. SRMC Chapter 9.30 also mandates that projects maintain pre-development stormwater runoff rates to the extent possible. Adherence to these regulatory requirements would minimize the amount of stormwater runoff from new development and redevelopment within the study area. Therefore, projects pursuant to the proposed General Plan 2040 would not result in flooding on- or off-site, and impacts would be *less than significant*.

Stormwater Drainage System Capacity

As stated in the impact discussions above, an increase in impervious surfaces with new development or redevelopment within the EIR Study Area could result in increases in stormwater runoff, which in turn could exceed the capacity of existing or planned stormwater drainage systems. All potential future development and redevelopment projects would be required to comply with the Phase II Small MS4 permit requirements and follow the BASMAA Post-Construction Manual when designing on-site stormwater treatment facilities. The hydrology study and SCP for each project is subject to City review to verify that the on-site storm drain systems and treatment facilities can accommodate stormwater runoff

from the site and would not exceed the capacity of downstream drainage systems at the point of connection. Also, implementation of the E.12 provisions for new development, which include LID design and bioretention areas, would minimize increases in peak flow rates or runoff volumes, thus reducing stormwater runoff to the storm drain system. In addition, the SRMC Chapter 9.30 states that pre-development stormwater runoff rates should be maintained whenever possible for new development projects. Finally, as part of the permitting process, new development projects would be required to pay public utility fees, as per SRMC Chapter 3.32, which finances improvements to the municipal storm drain system to accommodate increased flows.

Potential future development within the EIR Study Area would be infill projects or the intensification of existing land uses and would be in urban areas with existing storm drain systems. With the implementation of the E.12 provisions for new projects within the EIR Study Area, there would not be a significant increase in stormwater runoff to the City's storm drain system.

Further, new development and redevelopment within the EIR Study Area would not create substantial additional sources of polluted runoff. During the construction phase, projects would be required to prepare SWPPPs and ESCPs, thus limiting the discharge of pollutants from the site. During operation, projects must implement BMPs and LID measures that minimize the amount of stormwater runoff and associated pollutants.

With implementation of these control measures and regulatory provisions to limit runoff from new development sites, the proposed General Plan 2040 would not result in significant increases in runoff that would exceed the capacity of existing or planned storm drain facilities, and the impact is *less than significant.*

Redirecting Flood Flows

The discussion above regarding on- and off-side flooding is also applicable to the analysis of impeding or redirecting flood flows. Since new development projects are required to comply with E.12 provisions of the Phase II Small MS4 Permit and retain stormwater on-site via the use of bioretention facilities, any flood flows would also be retained for a period of time on-site, which would minimize the potential for flooding impacts. The following section, HYD-4, discusses the potential for impeding or redirecting flood flows with development in areas within the 100-year floodplain. Based on these discussions, impacts related to impeding or redirecting flood flows would be *less than significant*.

The proposed Community Design and Preservation (CDP), Conservation and Climate Change (C), Safety and Resilience (S), and the Community Services and Infrastructure (CSI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to hydrology. The following General Plan 2040 goals, policies, and programs would serve to minimize potential adverse impacts on drainage patterns:

Goal CDP-4: Quality Construction and Design. Encourage quality construction and design that enhances San Rafael's character and creates places of lasting value.

- Policy CDP-4.10, Landscape Design: Encourages privately owned and maintained landscaping that contributes to neighborhood quality, complements building forms and materials, improves stormwater management and drainage, and enhances the streetscape.
  - Program CDP-4.10A: Zoning Regulations. Periodically evaluate the landscape provisions in the Zoning Ordinance to respond to climate change, hazards, water availability, shading needs, and other issues. Zoning should support the City's goal of having a strongly landscaped character.
  - Program CDP-4.10B: Industrial Landscape Design. Ensure that landscape guidelines for new industrial and general commercial development provide effective buffering, while also supporting water conservation, water quality, and fire hazard reduction goals.
  - Program CDP-4.10C: Parking Lot Landscaping Requirements. Review City standards for parking lot landscaping to ensure that they adequately address visual screening, water conservation, environmental quality, and climate-related issues. Standards should allow for solar shade structures within parking areas.

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.9, Enhancement of Creeks and Drainageways: Conserve or improve the habitat value and hydrologic function of creeks and drainageways so they may serve as wildlife corridors and green infrastructure to improve stormwater management, reduce flooding, and sequester carbon. Require creek enhancement and associated riparian habitat restoration/ creation for projects adjacent to creeks to reduce erosion, maintain storm flows, improve water quality, and improve habitat value where feasible.
  - Program C-1.9A: Watercourse Protection Regulations. Maintain watercourse protection regulations in the San Rafael Municipal Code. These regulations should be periodically revisited to ensure that they adequately protect creeks and drainageways. Consider specific measures or guidelines to mitigate the destruction or damage of riparian habitat from roads, development, and other encroachments.
  - Program C-1.9B: Creek Restoration. Encourage and support efforts by neighborhood associations, environmental organizations, and other interested groups to fund creek enhancement, restoration, and daylighting projects, as well as creek clean-ups and ongoing maintenance programs.
  - Program C-1.9C: Upper Gallinas Watershed Restoration. Support implementation of creek restoration projects in the Upper Gallinas Creek Watershed, consistent with the Restoration Opportunities Report prepared in December 2016. It remains a priority of the City to restore the creek by removing the concrete channel, creating a walkway/ bikeway alongside, and planting native trees to provide share and filter runoff. Pursue grants and other funds, including capital improvement projects and general operating funds, to restore natural creek conditions and native vegetation.
  - Program C-1.9D: Restoration of San Rafael, Mahon, and Irwin Creeks. Pursue opportunities for creek restoration and beautification along San Rafael, Mahon, and Irwin Creeks, building on past efforts supporting biological and ecological restoration, education, and water quality improvements along these waterways.

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

- Policy C-3.3: Low Impact Development: Encourages construction and design methods that retain stormwater on-site and reduce runoff to storm drains and creeks.
  - Program C-3.3A: Development Review. Provide guidance to developers, contractors and builders on the use of rain gardens, bioswales and bio-retention facilities, permeable pavers, grass parking lots, and other measures to absorb stormwater and reduce runoff rates and volumes.
  - Program C-3.3B: Non-Traditional Gardens. Evaluate best practices in the use of roof gardens, vertical gardens/ green walls, pollinator gardens and other measures that increase the City's capacity to sequester carbon, plant trees, and enhance environmental quality. Encourage the incorporation of such features in new development.
- Policy C-3.4, Green Streets: Requires the City design streets and infrastructure so they are more compatible with the natural environment, mitigate urban heat island effects, and have fewer negative impacts on air and water quality, flooding, climate, and natural habitat.
  - Program C-3.4A: Green Streets Planning. Develop a Green Streets Plan that includes policy guidance, tools, analytics, and funding mechanisms to create more sustainably designed street and storm drainage systems. Street and drainage system improvements should support City conservation and climate change goals.
  - Program C-3.4B: Funding. Identify and apply for grants and federal, state, and regional funds to upgrade stormwater facilities, rehabilitate roads, and implement other Green Streets initiatives.

Goal S-2: Resilience to Geologic Hazards. Minimize potential risks associated with geologic hazards, including earthquake-induced ground shaking and liquefaction, landslides, erosion, sedimentation, and settlement.

- Policy S-2.5: Erosion Control. Requires appropriate control measures in areas susceptible to erosion, in conjunction with proposed development. Erosion control measures should incorporate best management practices (BMPs) and should be coordinated with requirements for on-site water retention, water quality improvements, and runoff control.
  - Program S-2.5A: Erosion and Sediment Control Plans. Require Erosion and Sediment Control Plans (ESCPs) for projects meeting the criteria defined by the Marin County Stormwater Pollution Prevention Program, including those requiring grading permits and those with the potential for significant erosion and sediment discharges. Projects that disturb more than one acre of soil must prepare a Stormwater Pollution Prevention Plan, pursuant to State law.
  - Program S-2.5B: Grading During the Wet Season. Avoid grading during the wet season due to soil instability and sedimentation risks. Require that development projects implement erosion and/or sediment control measures and runoff discharge measures based on their potential to impact storm drains, drainageways, and creeks.

Goal S-3: Resilience to Flooding and Sea Level Rise. Recognize, plan for, and successfully adapt to the anticipated effects of increased flooding and sea level rise.

- Policy S-3.8, Storm Drainage Improvements: Requires new development to mitigate potential increases in runoff through a combination of measures, including improvement of local storm

drainage facilities. Other measures, such as the use of porous pavement, bioswales, and "green infrastructure" should be encouraged.

- Program S-3.8A: Storm Drainage Improvements. Consistent with Countywide and regional stormwater management programs, require new development with the potential to impact storm drainage facilities to complete hydrologic studies that evaluate storm drainage capacity, identify improvements needed to handle a 100-year storm, and determine the funding needed to complete those improvements.
- Program S-3.8B: Green Infrastructure Guidelines. Evaluate potential measures to more sustainably manage stormwater, erosion, and improve water quality associated with urban runoff. *This includes improvements such as rain gardens and permeable pavement, which attenuate flooding downstream and provide ecological benefits.*

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.10, Storm Drainage Facilities: Require the continued monitoring and improving of the storm drainage system, including programs to reduce flooding, improve water quality, remove trash, and respond to climate-related changes. Evaluate the potential for restoration of the natural hydrologic function of creeks and drainageways where possible.
  - Program CSI-4.10A: Replacement of Aging Facilities. Pursue the replacement of older or failing drainage facilities such as metal pipes and stormwater pumping stations with more durable and resilient materials, or with new structures and pumps.
  - Program CSI-4.10B: Silt Removal. Continue to remove accumulated silt from City maintained drainageways, ponds, and creeks subject to tidal siltation such as Mahon and Irwin Creeks. Sediment from stream flow and deposition should be considered a potential resource.
  - Program CSI-4.10C: Sustainable Stormwater Management. Seek funding for projects that restore the natural characteristics and functions of stormwater systems, such as bioswales and conversion of concrete ditches to natural creeks. Such projects should mitigate the effects of urban runoff, reduce flood hazards, and improve water quality and habitat value.

With the implementation of regulatory requirements and the proposed General Plan 2040 policies listed above, these hydrology impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Like elsewhere in the city, the potential future development or redevelopment within the Downtown Precise Plan Area would be required to prepare SWPPPs and erosion and sediment control plans during project construction. During operation, projects in the Downtown Precise Plan Area must implement BMPs and LID measures. Additionally, projects that create and/or replace 1 acre of impervious surface must also adhere to the hydromodification requirements of the BASMAA Post-Construction Manual, and SRMC Chapter 9.30 further mandates that projects maintain pre-development stormwater runoff rates to the extent possible. Compliance with these regional and local regulatory requirements would ensure that erosion and siltation impacts, flooding on- or off-site, and impacts to the stormwater drainage system

capacity, would be *less than significant* from new development and redevelopment projects in the Downtown Precise Plan Area.

Depending on the final design, future projects such as an urban wetland could alter the course of the existing San Rafael Creek, which could result in redirecting flood flows. However, the intent of an urban wetland is to alleviate local flooding and combat sea level rise. As shown on Figure 4.10-3, the property south of Second Street and east of Lincoln Avenue, where a potential urban wetland could be located, is within the FEMA 100-year flood zone. Also, as shown on Figure 4.10-13, this area is within the area of sea level rise plus storm surge by 2050. Additionally, portions of the Downtown Precise Plan Area would be impacted by sea level rise by 2100.

Implementation of an urban wetland project would require consultation with the USACE, which issues permits to dredge waters of the United States under Section 404 of the CWA and for activities involving the construction of any structures in or over navigable waters of the United States under the River and Harbors Act of 1899. An urban wetland project would also require consultation with CDFW because it would result in streambed alteration under Sections 1601 to 1606 of the California Fish and Game Code. Compliance with federal and regional regulatory requirements would ensure impacts related to impeding or redirecting flood flows, from an urban wetland or similar flood control project, would be *less than significant* for the Downtown Precise Plan.

Potential future development and redevelopment within the Downtown Precise Plan Area is also required to comply with E.12 provisions of the Phase II Small MS4 Permit and retain stormwater on-site via the use of bioretention facilities. Therefore, any flood flows would be retained temporarily on-site, which would minimize the potential for flooding impacts. Developments in the Downtown Precise Plan Areas that are within the 100-year floodplain would be subject to FEMA and City floodplain building regulations, as discussed in the following section, HYD-4. Based on these discussions, impacts related to impeding or redirecting flood flows would be *less than significant* in the Downtown Precise Plan Area.

With the compliance with the regulatory requirements and the proposed General Plan 2040 goals, policies, and programs listed above, impacts to existing drainage patterns and the course of a stream or river would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-4	**Implementation of the proposed project could risk release of pollutants due to project inundation if in a flood hazard, tsunami, or seiche zones.**

General Plan 2040

Flood Hazard Zones

Buildout pursuant to the proposed General Plan 2040 could involve development of some projects in FEMA 100-year flood zones. As shown on Figure 4.10-3, most of the land along Miller Creek, the outlets of Gallinas Creek and San Rafael Creek, and land adjacent to San Pablo Bay are within the 100-year floodplain.

The proposed General Plan 2040 land use map designates residential and airport/recreational land uses within the 100-year flood zone at the outlet of Gallinas Creek. Residential land use designations are also located within the 100-year flood zone adjacent to the San Pablo Bay in the northeast area of the city. At the San Rafael Creek outlet, light and general industrial, mixed use, and residential land uses are designated within the 100-year flood zone. Residential land use designations are also assigned within the 100-year flood zone adjacent to Miller Creek.

As discussed in Section 4.10.1, Environmental Setting, there are levees along the creek outlets and many of the bayfront areas. In the northern portion of the city, levees extend from Miller Creek outlet to Gallinas Creek outlet, including levees along the north side of McInnis Park. In the southern portion, levees extend from Pickleweed Park to US-580 along the shoreline.

Potential future development in 100-year flood zones would be subject to floodplain requirements listed in SRMC Title 18. Prior to the start of construction or development within a Flood Hazard Area (i.e., 100-year floodplain), the City of San Rafael requires project applicants to obtain a development permit from the City's Floodplain Administrator and construct new development in accordance with the standards in SRMC Section 18.50.010, Standards of Construction. The standards of construction vary depending on whether the proposed structure is in Zone A or Zone VE and include provisions for flood risk reduction, including anchoring and flood-resistant materials and construction methods, with the lowest floors elevated above the base flood elevation. Prior to occupancy of any building, proof that a Letter of Map Revision and an elevation certificate has been obtained from FEMA must be provided to the City. Compliance with FEMA's National Flood Insurance Program requirements and SRMC requirements would reduce potential flood hazards and ensure that pollutants are not released during flood inundation.

Additionally, the San Rafael LHMP includes hazard mitigation actions to help reduce the risk of damage or injury from floods. These actions include improvements to drainage systems, levee assessments, development of a City Flood Alert System, and San Rafael Canal dredging.[57]

Tsunami

Given the history of tsunamis in the San Francisco Bay Area, the risk of flooding due to a tsunami event is considered to be unlikely for the city of San Rafael.[58] Tsunami hazards in the San Pablo and San Francisco Bays are much smaller than along the Pacific Coast because the bays are enclosed body of waters. However, as shown on Figure 4.10-8, the land surrounding the outlets of Gallinas Creek, San Rafael Creek, McInnis Park, and the coastal areas of the Canal, Loch Lomond, Glenwood, and Peacock Gap neighborhoods are within the mapped tsunami inundation zones.

The tsunami zone surrounding the Gallinas Creek outlet and the Peacock Gap neighborhood is designated open space in the General Plan 2040 Land Use Map. The zone surrounding the San Rafael Creek outlet is

[57] City of San Rafael, July 2017, *Local Hazard Mitigation Plan*, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2018/01/City-of-San-Rafael-LHMP-Complete.pdf, accessed May 12, 2020.

[58] City of San Rafael, 2017. San Rafael Local Hazard Mitigation Plan. Dated June 2017.

designated mixed use and residential land use. Loch Lomond includes mixed-use designations within the tsunami zone, and the Glenwood area and Canal include residential land use.

Due to the infrequent nature of tsunamis and relatively low predicted tsunami wave height in the area, the City is reasonably safe from tsunami hazards. Furthermore, SRMC Title 18 includes requirements for development within coastal high-hazard areas, which includes tsunami zones.

In addition, there are various precautions and warning systems that would be implemented by the City in the event of a tsunami. The City uses an automated telephone and text message system that can notify affected portions of the community when emergency alerts or notifications are needed. Also, the National Oceanic and Atmospheric Administration operates the National Tsunami Warning Center and the Pacific Tsunami Warning Center that alert local authorities to order the evacuation of low-lying areas, if necessary.

Marin County and the City are part of the tsunami warning system. The Marin Operational Area Emergency Operations Plan provides information and guidance for tsunami warnings, advisories, watches, and information statement bulletins, and specifies the roles and responsibilities of local response agencies in alert and warning dissemination. Additionally, the Marin Emergency Recovery Plan provides a concept of operations for long term recovery and restoration after extensive damage due to tsunami.[59] Both the Marin Operational Area Emergency Operations Plan and the Marin Emergency Recovery Plan are discussed further in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR.

A bayfront levee currently protects portions of the city from high tides and waves. Although the lower elevation portions of the levees could be overtopped by a tsunami, the potential for significant damage is low given the distance of structures from the levee and the short duration of a tsunami, the impact would be less than significant.[60]

Sea Level Rise

As discussed in the Flood Hazard discussion above, potential development under the proposed General Plan 2040 could involve development in areas that will be inundated by sea level rise and associated coastal flooding. As shown on Figures 4.10-4 to Figure 4.10-7, most of the land along the outlets of the Miller Creek, Gallinas Creek, and San Rafael Creek will be in sea level rise inundation areas by 2050 and 2100, with additional land being inundated during a 100-year storm surge. Other areas that will be inundated by sea level rise and storm surge in 2100 include southern San Rafael east of I-580, Peacock Gap golf course and surrounding neighborhood, and marshlands near Santa Venetia Marsh Preserve. Other marshland areas adjacent to San Pablo Bay and San Francisco Bay are also at risk of inundation from sea level rise and coastal flooding.

[59] Marin County Sheriff's Office of Emergency Services. 2015. *Tsunami Annex.* https://www.marinsheriff.org/assets/downloads/01.30.2015-Tsunami-AnnexUH.pdf

[60] City of San Rafael, July 2017, *Local Hazard Mitigation Plan*, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2018/01/City-of-San-Rafael-LHMP-Complete.pdf, accessed May 12, 2020.

As shown on Figure 3-7 in Chapter 3, Project Description, of this Draft EIR, nearly every land use designated on the General Plan 2040 land use map, with the exception of Hillside Resource Residential and Hillside Residential, would have some land within the projected sea level rise inundation area for 2050 with a 100-year storm surge. Many of the inundation areas would include parks and open space, residential, commercial, or mineral resource uses along Miller Creek, Gallinas Creek, and San Rafael Creek and areas adjacent to the San Pablo and San Francisco Bays.

As discussed above, there are levee systems in both northern and southern areas of the EIR Study Area that protect development from inundation from sea level rise and storm surge. These levees extend from the Miller Creek outlet to the Gallinas Creek outlet and along McInnis Park in the north, and from Pickleweed Park to US-580 along the shoreline in the south.

Additionally, the City has developed the *San Rafael Sea-Level Rise Adaptation Study*, which identifies potential adaptation measures to reduce the risk of inundation from sea level rise and coastal flooding. Potential citywide measures include flood barriers and hydraulic pump stations; creating guidance on structure elevation, shoreline setbacks, and disclosure requirements; and developing and applying protocols for assessing pump station inflows, discharge capacity, and resilience with climate change.[61] Potential adaptation measures in the six specific areas, identified in the Section 4.10.1.2, Existing Conditions, above, consist of raising shoreline levees and floodwalls, long-term restoration of canals and diked marshes, raising roadways to maintain evacuation routes, and upgrading the culverts and pumping stations that help with stormwater control.[62]

Furthermore, potential future development under the proposed General Plan 2040 within 100 feet of the San Pablo or San Francisco Bay shoreline would be subject to review and approval by the BCDC. Potential future development and large shoreline projects, including shoreline protection projects, would be required to conduct a sea level rise risk assessment and be designed to be resilient to a midcentury sea level rise projection. BCDC also requires that if it is likely that the project will remain in place longer than midcentury, an adaptive management plan should be developed to address the long-term impacts that will arise, based on the risk assessment. Potential new development under the proposed General Plan 2040 more than 100 feet inland from San Pablo or San Francisco Bay shoreline would not be subject to BCDC review. However, potential future development under the proposed General Plan 2040 would be required to comply with SRMC Title 18, Protection of Flood Hazards, which restricts development in floodable areas and requires protections for new development within inundation areas.

The proposed Land Use (LU), Conservation and Climate Change (C), Safety and Resilience (S), and Community Services and Infrastructure (CSI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to hydrology. The following General Plan 2040 goals, policies, and programs would minimize potential adverse impacts due to flooding:

[61] Environmental Science Associates, 2020, San Rafael Sea-Level Rise Adaptation Study, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2020/10/San-Rafeal-SLR-Vulnerability-Study-2020Jun19.pdf.

[62] Environmental Science Associates, 2020, San Rafael Sea-Level Rise Adaptation Study, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2020/10/San-Rafeal-SLR-Vulnerability-Study-2020Jun19.pdf.

Goal LU-1: Well-Managed Growth. Grow and change in a way that serves community needs, improves fiscal security, and enhances the quality of life.

- Policy LU-1.2: Development Timing. Allow new development only when adequate infrastructure is available, consistent with the following findings [relevant to hydrology and water quality]:
  - Sewer, water, and other infrastructure improvements needed to serve the proposed development will be in place and available to serve the development by the time it is constructed.
  - The project has incorporated design and construction measures to mitigate exposure to hazards, including flooding, sea level rise, and wildfire.
  - Program LU-1.2A: Development Review. Implement Policy LU-2 through the development review and environmental review processes. The City may modify the requirements associated with this policy if it determines that its application as stated would preclude all economically viable use of a subject property.
- Policy LU-1.12: Transfer of Development Rights. Allow transfer of development rights (TDR) or density/ FAR from one property to another in cases where:
  - Special circumstances (e.g., historic preservation, wetlands protection, sea level rise) are found to exist, potentially causing significant environmental impacts if the transfer was not allowed; or
  - A significant public benefit would be provided as a result of the transfer.
  - Program LU-1.12A: Transfer of Development Rights (TDR) Program. Evaluate opportunities for TDR as a response to issues such as sea level rise and wildfire hazards. This evaluation also should address how TDRs are sold and recorded.
- Policy LU-1.17: Building Heights. Use General Plan Figure 3-3 as the basis for determining "baseline" maximum building heights in San Rafael. Maximum heights should continue to be codified through zoning and the Downtown Precise Plan. In addition, the following specific provisions related to building heights shall apply:
  - Height of buildings existing or approved as of January 1, 1987, shall be considered as conforming to zoning standards.
  - Hotels outside of the Downtown Precise Plan boundary have a 54-foot height limit. Within Downtown, the height provisions of the Downtown Precise Plan apply.
  - As provided for by Policy LU-18, "baseline" building heights are subject to height bonuses of up to 24 feet where specific community benefits are provided, where a Variance or zoning exception is granted, or where a Transfer of Development Rights (TDR) is being implemented.
  - Heights may be increased by up to six (6) feet above the baseline allowable building heights is necessary to mitigate the exposure of properties to sea level rise and other flooding hazards (e.g., raising the first floor of habitable floor space above anticipated tidal flood elevations).

Goal C-1: Habitat Protection. Protect, restore, and enhance San Rafael's environment and natural habitat.

- Policy C-1.9: Enhancement of Creeks and Drainageways. Requires that the City conserve or improve the habitat value of creeks and drainageways so they may serve as wildlife corridors and green infrastructure to improve stormwater management, reduce flooding, and sequester carbon.
  - Program C-1.9A: Watercourse Protection Regulations. Maintain watercourse protection regulations in the San Rafael Municipal Code. These regulations should be periodically revisited to ensure that they adequately protect creeks and drainageways. Consider adding specific measures

or guidelines to mitigate the destruction or damage of riparian habitat from roads, development, and other encroachments.

- Program C-1.9B: Creek Restoration. Encourage and support efforts by neighborhood associations, environmental organizations, and other interested groups to fund creek enhancement, restoration, and daylighting projects, as well as creek clean-ups and ongoing maintenance programs.
- Program C-1.9C: Upper Gallinas Watershed Restoration. Support implementation of creek restoration projects in the Upper Gallinas Creek Watershed, consistent with the Restoration Opportunities Report prepared in December 2016. It remains a top priority of the City to restore the creek by removing the concrete channel, creating a walkway/ bikeway alongside, and planting native trees to provide share and filter runoff. Grants and other funds should be pursued to restore natural creek conditions and native vegetation.
- Program C-1.9D: Restoration of San Rafael, Mahon, and Irwin Creeks. Pursue opportunities for creek restoration and beautification along San Rafael, Mahon, and Irwin Creeks, building on past efforts supporting biological and ecological restoration, education, and water quality improvements along these waterways.

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

- Policy C-3.2: Reduce Pollution from Urban Runoff. Require Best Management Practices (BMPs) to reduce pollutants discharged to storm drains and waterways. Typical BMPs include reducing impervious surface coverage, requiring site plans that minimize grading and disturbance of creeks and natural drainage patterns, and using vegetation and bioswales to absorb and filter runoff.
  - Program C-3.2D: System Improvements. Improve storm drainage performance through regular maintenance and clean-out of catch basins, installation of trash capture devices, a City street sweeping program, and improvements to the existing system. When existing lines are replaced, design changes should be made as needed to increase capacity to handle intensifying storms and expected sea level rise impacts.

Goal S-1: A Safer, More Resilient City: Minimize San Rafael's vulnerability to the impacts of environmental and public health emergencies.

- Policy S-1.2: Location of Future Development. Permit development only in those areas where potential danger to the health, safety, and welfare of the community can be adequately mitigated. Land uses and densities should take environmental hazards such as earthquakes, flooding, and fires into consideration.
  - Program S-1.2A: Entitlement Process. Use the entitlement process to evaluate the potential for hazards and to require appropriate mitigation measures and approval conditions.
- Policy S-1.3: Location of Public Improvements. Avoid locating public improvements and utilities in areas with high hazard levels. When there are no feasible alternatives, require effective mitigation measures to reduce the potential for damage.
  - Program S-1.3B: Use of Hazard Maps in Development Review. Review slope stability, seismic, flood hazard, sea level rise, wildfire, and other environmental hazard maps when development is

proposed. Require appropriate studies and actions to ensure that hazards are identified and mitigated.

Goal S-3: Resilience to Flooding and Sea Level Rise. Recognize, plan for, and successfully adapt to the anticipated effects of increased flooding and sea level rise.

- Policy S-3.1: Sea Level Rise Projection Map. Utilize Figure S-2 (Sea Level Rise Projection Map) to address flooding and sea level rise hazards. The figure should be used to:
  - maximize public awareness and disclosure to property owners and the public.
  - assess and address impacts to future development.
  - establish a zoning "overlay zone" and building code requirements for future planning and adaptation.
  - plan opportunity areas for adaptation.
  - inform funding and financing decisions about short-term and long-term adaptation projects.
  - Program S-3.1A: Incorporate into City GIS. Incorporate the Sea Level Rise Projection Map into the City's Geographic Information System (GIS) map and utilize GIS as a publicly accessible tool for tracking flooding and sea level rise hazards.
  - Program S-3.1B: Periodic Update of Sea Level Rise Projection Map. Review sea level rise data at least once every five (5) years to determine the need for Map updates.
  - Program S-3.1C: Sea Level Rise Overlay Zone. Adopt an "overlay zone" on the City Zoning Map incorporating the Sea Level Rise Projection Map. The "overlay zone" shall include land use regulations for site planning and a minimum construction elevation that reflects flooding and sea level rise data.
- Policy S-3.3: Awareness and Disclosure. Maximize awareness and disclosure by providing information to property owners and the public on areas subject to increased flooding and sea level rise vulnerability.
  - Program S-3.3A: Residential Building Resale (RBR) Reports. Revise the RBR Report template to include a disclosure of potential property risk to increased flooding and sea level rise. Utilize the Sea Level Rise Prediction Map for confirming property vulnerability.
- Policy S-3.4: Mitigating Flood and Sea Level Rise Impacts. Consider and address increased flooding and sea level rise impacts in vulnerable areas (see Figure S-2) in development and capital projects, including resiliency planning for transportation and infrastructure systems.
  - Program S-3.4A: Development Projects. Where appropriate, require new development, redevelopment projects, and substantial additions to existing development to consider and address increased flooding and sea level rise impact, and to integrate resilience and adaptation measures into project design.
  - Program S-3.4B: Capital Projects. Prepare a guidance document for addressing increased flooding, sea level rise impacts, and adaptation measures into the City's capital projects and planning process. This should include strategies for identifying and evaluating the costs, benefits and potential revenue sources for elevating or redesigning low-lying roadways and critical infrastructure. If the life of a public improvement in a vulnerable area extends beyond 2050, adaptation measures should be incorporated.
  - Program S-3.4C: Coordination with Utilities and Services. Coordinate with the utilities and services that have infrastructure and facilities in vulnerable areas (for example: wastewater treatment

plants) to ensure that sea level rise information and goals are consistent with the City's goals, and that infrastructure/utilities projects address and plan for increased flooding and sea level rise.

- Policy S-3.5: Minimum Elevations. For properties in vulnerable areas, ensure that new development, redevelopment, and substantial additions to existing development meets a minimum required construction elevation. Minimum elevations should provide protection from the potential impacts of a 100-year flood (a flood with a one percent chance of occurring in any given year), the potential for increased flooding due to sea level rise, and the ultimate settlement of the site due to consolidation of bay mud from existing and new loads and other causes.
  - Program S-3.5B: Ground Elevation Survey. Perform periodic ground elevation surveys in the Sea Level Rise vulnerability zone. The result of the surveys should be considered when developing projects to reduce coastal flooding potential.
- Policy S-3.6: Resilience to Tidal Flooding. Improve San Rafael's resilience to coastal flooding and sea level rise through a combination of structural measures and adaptation strategies.
  - Program S-3.6A: Sea Level Rise Adaptation Plan. Prepare and adopt an adaptation plan addressing increased flooding and sea level rise.
- Policy S-3.7: Shoreline Levees. Improve and expand San Rafael's shoreline levee system. When private properties are developed or redeveloped, require levee upgrading as appropriate, based on anticipated high tide and flood conditions.
  - Program S-3.7A: Levee Improvement Plans. Assess existing levees, berms, and flood control systems to identify reaches with the greatest vulnerability. Develop improvement plans based on existing conditions and projected needs, as documented in adaptation plans. This should include improvement studies for the Spinnaker Point levee, as recommended by the LHMP, and the Canalways levee along San Pablo Bay.
  - Program S-3.7B: Financing Levee Improvements. Coordinate with property owners; residents and businesses; federal, state, and regional agencies; utilities; and other stakeholders to evaluate potential methods of improving levees and funding ongoing levee maintenance, including assessment or maintenance districts. The cost and fiscal impacts of levee improvements should be evaluated against potential benefits, as well as the potential costs and consequences of inaction.
- Policy S-3.9: Flood Control Improvements. Pursue financing and funding opportunities to fund short-term and long-term flood control and adaptation projects. Funding tools and opportunities would include, among others tax or bond measures, assessment districts, geologic hazard abatement districts and grants. The City will also support legislation that provides regional, state, and federal funding for these projects, and will pursue such funding as it becomes available.
  - Program S-3.9A: Incremental Flood Control Improvements. Where needed and possible, new development/ redevelopment projects shall include measures to improve area flood protection. Such measures would be identified and required through the development review process.
  - Program S-3.9B: Flood Hazard Mitigation Projects. Undertake flood hazard mitigation projects as outlined in the Local Hazard Mitigation Plan, including sewer relocation and replacement, pump station rehabilitation, corrugated metal pipe replacement, and improvements to flood-prone streets such as Beach Drive.

- Program S-3.9C: Restoration and Dredging Projects. Implement restoration and dredging projects that will increase stormwater drainage capacity and reduce flood hazards. As noted in the LHMP, this could include restoration of the Freitas Parkway flood channel and dredging of Gallinas Creek and the San Rafael Canal.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.6: Climate Change Impacts. Incorporate sea level rise and increased storm intensity forecasts in the planning and design of local infrastructure projects.
  - Program CSI-4.6A: Guidance Document. Prepare a guidance document for incorporating sea level rise into the City's capital planning process.
  - Program CSI-4.6B: Coordination with Service Providers. Coordinate with water, sewer, energy, solid waste, and telecommunication service providers to prepare a plan for retrofitting critical infrastructure for rising sea levels, more intense storms, and other climate-related impacts.
- Policy CSI-4.9: Wastewater Facilities. Ensure that wastewater collection, treatment and disposal infrastructure is regularly maintained and meets projected needs. Improvements should be programmed to meet state and federal standards, respond to sea level rise and seismic hazards, repair and replace aging or leaking pipes, and protect environmental quality.
  - Program CSI-4.9A: Coordination of Services. Support efforts by the Las Gallinas Sanitary District, Central Marin Sanitation Agency and San Rafael Sanitation District to maintain high- quality wastewater collection and treatment facilities.
- Policy CSI-4.10: Storm Drainage Facilities. Requires the continued monitoring and improving of the storm drainage system, including programs to reduce flooding, improve water quality, remove trash, and respond to climate-related changes.
  - Program CSI-4.10A: Replacement of Aging Facilities. Pursue the replacement of older or failing drainage facilities such as metal pipes and stormwater pumping stations with more durable and resilient materials, or with new structures and pumps.
  - Program CSI-4.10B: Silt Removal. Continue to remove accumulated silt from City maintained drainageways, ponds, and creeks subject to tidal siltation such as Mahon and Irwin Creeks
  - Program CSI-4.10C: Sustainable Stormwater Management. Seek funding for projects that restore the natural characteristics and functions of stormwater systems, such as bioswales and conversion of concrete ditches to natural creeks. Such projects should mitigate the effects of urban runoff, reduce flood hazards, and improve water quality and habitat value.

With the implementation of regulatory requirements and the listed General Plan goals, policies, and programs, impacts from implementation of the General Plan 2040 would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Section 4.10.1.2, Existing Conditions, portions of the Downtown Precise Plan Area are within the FEMA 100-year flood zone (Figure 4.10-9), the tsunami inundation zone (Figure 4.10-14), and

sea level rise inundation areas by 2100 (Figures 4.10-10 through 4.10-13). The southeastern portion of the Downtown Area is also within the 100-year floodplain and is subject to both overflow from San Rafael Creek and sea level rise in 2050 and 2100. Specific areas that will be subject to projected sea level rise include Albert Park, the Downtown San Rafael SMART station, and San Rafael High School. Therefore, potential future development in portions of the Downtown Precise Plan Area could risk the release of pollutants due to project inundation.

Projects in the 100-year flood zones within the Downtown Precise Plan Area would be subject to FEMA requirements and floodplain requirements listed in SRMC Title 18, Protection of Flood Hazards. SRMC Title 18 restricts development in floodable areas, including tsunami zones, and requires protections for new development within inundation areas. Furthermore, as stated previously, the General Plan 2040 includes several goals, policies, and programs that would ensure existing and future development would be protected from damage from sea level rise inundation. With the compliance with the regulatory requirements and the proposed General Plan 2040 goals, policies, and programs listed above, impacts resulting from implementation of the proposed Downtown Precise Plan would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-5	**Implementation of the proposed project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.**

General Plan 2040

Adherence to the CGP, the SRMC, the Phase II MS4 Permit, and the BASMAA Post-Construction Manual would ensure that surface and groundwater quality are not adversely impacted during construction and operation of development pursuant to the proposed General Plan 2040. As a result, site development will not obstruct or conflict with the implementation of the San Francisco Bay Basin Water Quality Control Plan. Furthermore, potential future development will be within the MMWD service area, which relies solely on surface water supply. Groundwater is not currently used or planned to be used as a municipal water supply source by the MMWD, and future projects would not conflict with the sustainable management of the groundwater basins. Therefore, the proposed General Plan 2040 would not obstruct or conflict with the RWQCB's Basin Plan or groundwater management plans, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Similar to the requirements for development elsewhere in the city, potential future development in the Downtown Precise Plan Area would be required to adhere to the CGP, SRMC, the Phase II MS4 Permit, and the BASMAA Post-Construction Manual would ensure that surface and groundwater quality are not adversely impacted during construction and operation of development pursuant to potential future development within the Downtown Precise Plan Area. Additionally, groundwater is not currently used or

planned to be used as a municipal water supply source by the MMWD and future projects would not conflict with the sustainable management of the groundwater basins. Because the San Rafael Valley Groundwater Basin is considered by DWR to be a very low priority basin, there are no current plans or requirements to prepare a sustainable groundwater management plan for this basin. Therefore, potential future development in the Downtown Precise Plan Area would not obstruct or conflict with the RWQCB's Basin Plan or groundwater management plans, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-6 Implementation of the proposed project could result in a cumulatively considerable impact to hydrology and water quality.

The geographic context used for the cumulative assessment to hydrology, drainage, flooding, and water quality encompasses the watersheds within the EIR Study Area: Gallinas Creek watershed, San Rafael Creek watershed, and Miller Creek watershed. (see Figure 4.10-1). New development in these watersheds could increase impervious areas, thus increasing runoff and flows into the storm drainage systems. Potential future development would be required to comply with the Phase II MS4 Permit, implement BMPs that direct drainage to landscaped areas, and integrate bioretention facilities into the site design. Implementation of these BMPs on a regional basis would reduce cumulative impacts to hydrology and drainage to *less than significant*.

All projects would be required to comply with various SRMC provisions and policies and County ordinances as well as numerous water quality regulations that control construction-related and operational discharge of pollutants into stormwater. The water quality regulations implemented by the San Francisco Bay RWQCB take a basinwide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the Phase II Small MS4 Permit encompasses all of the surrounding municipalities to manage stormwater systems and be collectively protective of water quality. Projects in these watersheds would implement structural and nonstructural source-control BMPs that reduce the potential for pollutants to enter runoff, and treatment control BMPs that remove pollutants from stormwater. Therefore, cumulative water quality impacts would be less than significant after compliance with these permit requirements, and impacts would not be cumulatively considerable.

Projects in the watersheds may be constructed within 100-year flood zones, areas of sea level rise, or tsunami inundation zones. Such projects would be mandated to comply with National Flood Insurance Program requirements. In addition, other jurisdictions within these watersheds regulate development within flood zones in a similar manner as San Rafael's Municipal Code Title 18 and in compliance with FEMA standards to limit cumulative flood hazard impacts. Therefore, cumulative impacts to hydrology, drainage, and flooding would be *less than significant*, and impacts of the proposed project would not be cumulatively considerable.

Significance without Mitigation: Less than significant.

4.11 LAND USE AND PLANNING

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to land use and planning. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of project impacts and cumulative impacts.

4.11.1 ENVIRONMENTAL SETTING

4.11.1.1 REGULATORY FRAMEWORK

State Regulations

California Housing Element Law

California Housing Element Law[1] includes provisions related to the requirements for housing elements of local government general plans. Among these requirements, some of the necessary parts include an assessment of housing needs and an inventory of resources and constraints relevant to the meeting of these needs. Additionally, in order to ensure that counties and cities recognize their responsibilities in contributing to the attainment of the State housing goals, this section of the Government Code calls for local jurisdictions to plan for and allow the construction of a share of the region's projected housing needs, known as the Regional Housing Needs Allocation. The City of San Rafael's 2015–2023 Housing Element Update was adopted in January 2015. Though it is not being updated as part of the proposed General Plan 2040, the goals, policies, and programs in the proposed General Plan 2040 would continue to support adequate housing in San Rafael. The next housing element update will be in 2021 to 2022, with adoption before January 31, 2023.

Cortese-Knox Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000[2] established a Local Agency Formation Commission (LAFCo) in each county in California, and authorized these commissions to review, approve, or deny proposals for boundary changes and incorporations for cities, counties, and special districts. The LAFCo established a "sphere of influence" (SOI) for cities within their jurisdiction that describes the city's probable future physical boundaries and service area. The San Rafael SOI is regulated by the Marin County LAFCo. The San Rafael SOI is shown on Figure 3-2 in Chapter 3, Project Description, of this Draft Environmental Impact Report (EIR). The City does not propose to annex or de-annex any areas of the SOI as part of the proposed project.

[1] Government Code Sections 65580–65589.8.
[2] California Government Code, Sections 56000–56001.

Regional Regulations

Plan Bay Area

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, *Plan Bay Area* is the regional transportation plan/sustainable community strategy, as mandated by the Sustainable Communities and Climate Protection Act (Senate Bill 375). *Plan Bay Area* lays out a development scenario for the nine-county Bay Area region that works to align transportation and land use planning in order to reduce vehicle miles traveled through modified land use patterns. The current *Plan Bay Area* projects growth and development patterns through 2040 and is currently being updated to extend to 2050.

Plan Bay Area is prepared and regularly updated by the Metropolitan Transportation Commission (MTC) in partnership with the Association of Bay Area Governments (ABAG), Bay Area Air Quality District (BAAQMD), and the Bay Conservation and Development Commission (BCDC). Each of the agencies has a different role in regional governance. ABAG primarily does regional land use planning, housing, environmental quality, and economic development; MTC is tasked with regional transportation planning, coordinating, and financing; BAAQMD is responsible for regional air pollution regulation; and BCDC's focus is to preserve, enhance, and ensure responsible use of the San Francisco Bay.[3]

As described in Chapter 4, Environmental Analysis, *Plan Bay Area* designates Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) throughout the region. PDAs are areas along transportation corridors which are served by public transit that allow opportunities for development of transit-oriented, infill development within existing communities that are expected to host the majority of future development. TPAs are similar in that they are formed within one-half mile around a major transit stop such as a transit center or rail line. Overall, over two-thirds of all regional growth by 2040 is allocated to PDAs and TPAs. As shown on Figure 4-1, the EIR Study Area has three PDAs and three TPAs. The PDAs include the North San Rafael PDA, Civic Center Smart Station TPA, Southeast San Rafael / Canal PDA, Downtown San Rafael SMART Station PDA and TPA, and a very small portion of the Larkspur TPA.

Plan Bay Area 2040 distributes future growth across the San Francisco Bay Area region in order to meet its GHG emissions reduction, housing, and other performance targets, but it is not intended to override local land use control. Cities and counties, not MTC/ABAG, are ultimately responsible for the manner in which their local communities continue to be built out in the future. For this reason, cities and counties are not required to revise their land use policies and regulations, including general plans, to be consistent with the regional transportation plan or an alternative planning strategy. Rather than increase regional land use control, *Plan Bay Area* 2040 facilitates implementation by expanding incentives and opportunities available to local jurisdictions to support growth in PDAs. In addition to funding transportation and planning projects in PDAs, *Plan Bay Area* 2040 sets the stage for cities and counties to increase the efficiency of the development process, if they choose, for projects consistent with *Plan Bay Area* and other state legislation.[4]

[3] Metropolitan Transportation Commission and Association of Bay Area Governments, *Plan Bay Area 2040*, Strategy for a Sustainable Region, page 69.

[4] *Plan Bay Area* website, Frequently Asked Questions page: Does *Plan Bay Area* override local land use control?, https://www.planbayarea.org/2040-plan/quick-facts/faq-page#n4851, accessed on April 30, 2019.

San Francisco Bay Conservation and Development Commission

In 1969, the McAteer-Petris Act designated the San Francisco BCDC as the agency responsible for the protection of the San Francisco Bay and its natural resources. BCDC fulfills this mission through the implementation of the *San Francisco Bay Plan* (Bay Plan), an enforceable plan that guides the future protection and use of San Francisco Bay and its shoreline. The Bay Plan includes a range of policies on public access, water quality, dredging and fill, and project design. The Bay Plan also designates shoreline areas that should be reserved for water-related sports, industry, and public recreation; airports; and wildlife areas. Impacts related to biological resources and water quality are discussed in Chapter 4.4, Biological Resources, and Chapter 4.10, Hydrology and Water Quality, of this Draft EIR.

BCDC has jurisdiction within 100 feet of the San Francisco Bay's shoreline, and proposed development in its jurisdiction is subject to BCDC *Public Access Design Guidelines*, which are intended to ensure that maximum feasible public access is provided. BCDC defines "public access" to include physical public access to and along the shoreline of the San Francisco Bay and visual public access to the San Francisco Bay from other public spaces.[5] Physical improvements, as defined by BCDC, may include waterfront promenades, trails, plazas, play areas, overlooks, parking spaces, landscaping, site furnishings, and connections from public streets to the water's edge.[6] Note that the San Rafael Canal is not within BCDC's jurisdiction.

Marin Countywide Plan

The 2017 *Marin Countywide Plan* is a comprehensive long-range guide for land use in the unincorporated portions of the county, including land outside of San Rafael's city limit but within the EIR Study Area. The *Marin Countywide Plan* includes provisions for "fringe" development. The *Marin Countywide Plan* directs the County to generally maintain land use designations in "urban fringe areas" that are consistent with land use designations surrounding urban areas. This direction is in the "Community Development" section of the built environment element:

Goal CD-6: Confinement of Urban Development. Concentrate new medium- to high-intensity land uses at infill areas where services can be provided.

Policy CD-6.1: Coordinate Urban Fringe Planning. Seek city review of development proposed adjacent to urban areas. Discourage development requiring urban levels of service from locating outside urban service areas. Coordinate with cities and towns regarding their plans and rules for annexing urbanized areas.

[5] San Francisco Bay Conservation and Development Commission, 2005, Public Access Design Guidelines for the San Francisco Bay, page 3.

[6] San Francisco Bay Conservation and Development Commission, 2005, Public Access Design Guidelines for the San Francisco Bay, page 3.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to land use and planning are primarily in the Land Use (LU) and Housing (H) Elements. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended or substantially changed, and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact in Section 4.11.3, Impact Discussion.

San Rafael Municipal Code

Besides the General Plan, the City of San Rafael Municipal Code (SRMC) is the primary tool that regulates physical development in San Rafael. The SRMC contains all ordinances for the city and identifies land use categories, site development regulations, and other general provisions that ensure consistency between the General Plan and proposed development projects. The SRMC is organized by title, chapter, and section. Most provisions related to land use impacts are in Title 14, Zoning Ordinance. The primary purpose of the Zoning Ordinance is to "promote and protect the public health, safety, peace, comfort and general welfare" of the city of San Rafael, with specific purposes listed under Section 14.01.030, Purposes. The Zoning Ordinance is the mechanism used to implement the land use goals, policies, and programs of the General Plan and to regulate all land use in the city. The Zoning Ordinance describes zoning designations and contains the zoning map and development standards for the zoning designations.

Other City Plans

All specific plan, area plans, master plans, or similar plans—such as a climate action plan or a hazard mitigation plan—and zoning in the city must be consistent with the General Plan. The following describes some of the other key plans that guide development in San Rafael.

Station Area Plans

The *Civic Center Station Area Plan*, approved in August 2012 and amended September 2013, sets a conceptual framework for development and circulation improvements in the area immediately adjacent to the Civic Center SMART (Sonoma-Marin Area Rail Transit) station. The goals of the plan are to set the stage for creating a vibrant, mixed-use, livable area supported by a mix of transit opportunities, and it focuses on key pedestrian, bicycle, and transit connections as well as identifying transit-oriented land use opportunities.[7]

[7] City of San Rafael, adopted August 2012, amended September 2013, Civic Center Station Area Plan and associated Resolution No. 13618.

The *Downtown Station Area Plan*, approved June 2012, assesses the area within one-half mile of the downtown SMART station, an area which is largely under the Downtown San Rafael PDA and TPA designated by *Plan Bay Area 2040*. The *Downtown Station Area Plan* considers traffic, pedestrian and bicycle connections, and land use pattern conditions—such as the location of residential neighborhoods in relation to transit facilities and commercial development.

Bicycle and Pedestrian Master Plan

The *Bicycle and Pedestrian Master Plan*, updated in 2018, contains an analysis of priority areas that is intended to guide development of the bicycle and pedestrian network in San Rafael. The plan encourages using natural and man-made corridors, including shorelines, for the alignment of future multiuse trails, and also encourages construction and updating of bike and pedestrian paths along major transportation corridors.

Climate Change Action Plan 2030

The City of San Rafael *Climate Change Action Plan* (CCAP) 2030 was adopted in May 2019. The CCAP includes a series of strategies intended to help the City meet the greenhouse gas emissions reduction target of 40 percent below 1990 emissions levels by 2040 and 80 percent below 1990 levels by 2050. The CCAP includes a variety of regulatory, incentive-based, and voluntary strategies that are expected to reduce emissions from both existing and new development in San Rafael.

4.11.1.2 EXISTING CONDITIONS

This section describes the existing General Plan 2020 land use designations and Zoning Districts in the EIR Study Area as a whole and identifies which land use designations and Zoning Districts are specific to the Downtown Precise Plan Area.

Existing General Plan 2020 Land Use Designations

San Rafael is known for a range of urban and suburban land uses, including a variety of residential neighborhoods, a downtown area, parks, and business centers. San Rafael's development pattern is largely consistent with the patterns of adjacent communities. The existing General Plan 2020 land use designations are listed below. The 20 land use designations that appear in the Downtown Precise Plan Area are shown in **bold**, but only 6 of these are mapped in the Downtown exclusively; the others appear Downtown as well as elsewhere in the city.

- **Hillside Residential Resource**
- Hillside Residential
- Large Lot Residential
- **Residential-Low Density**
- **Residential-Medium Density**
- **High Density Residential**
- **General Commercial**
- **Neighborhood Commercial**
- **Retail Office**
- **Office**
- **Residential Office**
- **Hetherton Office**
- **Lindaro Mixed Use**
- **Lindaro Office**
- **Second/Third Mixed Use**
- **Fourth Street Commercial Core**
- **Fifth/Mission Residential/Office**
- **West End Village**
- **Park**
- Open Space
- Conservation
- **Public-Quasi Public**
- **Industrial**
- Light Industry/Office
- **Marine Related**
- Mineral Resources
- Airport/Recreation

Existing Zoning Districts

The SRMC Title 14, Zoning, implements the General Plan land use designations by establishing comprehensive regulations and development standards for each Zoning District. San Rafael has 36 Zoning Districts and 4 overlay zones. The existing overlay zones and Zoning Districts are listed below. Existing Zoning Districts in the Downtown Precise Plan Area are shown in **bold**, but only a few of these are mapped in the Downtown exclusively; most appear Downtown as well as in other parts of the city.

Overlay Zones

- Hillside Development Overlay District (-H)
- Wetland Overlay District (-WO)
- Eichler/Alliance Overlay District (-E/A)
- Canalfront Review Overlay District (-C)

Zoning Districts

- Single-Family Residential District Minimum Lot Size: 2 Acres (R2a)
- Single-Family Residential District Minimum Lot Size: 1 Acres (R1a)
- Single-Family Residential District Minimum Lot Size: 20,000 Square Feet (R20)
- Single-Family Residential District Minimum Lot Size: 10,000 Square Feet (R10)
- Single-Family Residential District Minimum Lot Size: 7,500 Square Feet (R7.5)
- Single-Family Residential District Minimum Lot Size: 5,000 Square Feet (R5)
- Duplex Residential District 2,500 Square Feet Per Dwelling Unit (DR)
- Multifamily Residential District (Medium Density) 5,000 Square Feet Per Dwelling Unit (MR5)
- Multifamily Residential District (Medium Density) 3,000 Square Feet Per Dwelling Unit (MR3)
- Multifamily Residential District (Medium Density) 2,500 Square Feet Per Dwelling Unit (MR2.5)
- Multifamily Residential District (Medium Density) 2,000 Square Feet Per Dwelling Unit (MR2)
- Multifamily Residential District (High Density) 1,800 Square Feet Per Dwelling Unit (HR1.8)
- Multifamily Residential District (High Density) 1,500 Square Feet Per Dwelling Unit (HR1.5)
- Multifamily Residential District (High Density) 1,000 Square Feet Per Dwelling Unit (HR1)
- General Commercial District (GC)
- Neighborhood Commercial District 1,800 Square Feet Per Dwelling Unit (NC)
- Office District (O)
- Commercial/Office District 1,000 Square Feet Per Dwelling Unit (C/O)
- Residential/Office District 1,000 Square Feet Per Dwelling Unit (R/O)
- Francisco Boulevard West Commercial District (FBWC)
- Fourth Street Retail Core (4SRC)
- Cross Street Mixed Use District (CSMU)
- Hetherton Office District (HO)
- Second/Third Mixed Use District East District (2/3 MUE)
- Second/Third Mixed Use District West District (2/3 MUW)
- West End Village District (WEV)
- Fifth/Mission Residential/Office District (5/M R/O)
- Industrial District (I)
- Light Industrial/Office District (LI/O)
- Core Canal Industrial/Office District (CCI/O)
- Lindaro Mixed Use District (LMU)
- Planned Development District (PD)
- Marine District (M)
- Public/Quasi-Public District (P/QP)
- Parks/Open Space District (P/OS)
- Water District (W)

4.11.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would result in significant land use and planning impacts if it would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
3. Result in a cumulative impact related to land use and planning.

4.11.3 IMPACT DISCUSSION

LU-1 Implementation of the proposed project could physically divide an established community.

General Plan 2040

The physical division of an established community typically refers to the construction of a physical feature or the removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and outlying areas. For example, an airport, roadway, or railroad track through an existing community could constrain travel from one side of the community to another or impair travel to areas outside of the community.

As discussed in Chapter 3, Project Description, of this Draft EIR, the proposed General Plan 2040 builds off the current General Plan 2020 by incorporating the topics that are now required by State law and revising relevant goals, policies, and programs to meet those requirements. An overview of major changes to the goals, policies, and programs in each General Plan 2040 element is provided in Section 3.7.1.2, General Plan Goals, Policies, and Programs, in Chapter 3, Project Description. As described in detail in Chapter 3, the proposed General Plan 2040 includes changes that may influence the types and intensities of land uses permitted on different sites in the city.

- It changes how residential density is measured—from "gross" density to "net" density—because most of the city's future development is expected on small infill sites, and so that the General Plan land use designations align with Zoning Districts.
- It consolidates General Plan land use designations from 28 to 19 to improve consistency between the proposed General Plan and the existing zoning regulations and to streamline General Plan 2040.
- It includes three new General Plan land use designations: Downtown Mixed Use; Parks, Recreation, and Open Space; and Sea level Rise Prediction Area (an overlay with underlying base land use designations). No Zoning District changes are proposed other than to change the Zoning District in the Downtown Precise Plan Area, which is discussed below under the subheading "Downtown Precise Plan."

The proposed General Plan 2040 also extends the planning horizon forward by 20 years, consistent with other regional plans, including *Plan Bay Area* 2040. Population projections are discussed in Chapter 4.14, Population and Housing, of this Draft EIR.

Potential future development from implementation of the proposed General Plan 2040 would not result in a change in land use or zoning that would cause the construction or removal of any physical features or means of access throughout the EIR Study Area or the region. The proposed General Plan 2040 would increase development potential in the EIR Study Area; however, potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized, and/or in close proximity to existing development and infrastructure. Additionally, the proposed General Plan 2040 maintains the existing roadway patterns and would not include any new major roadways or other physical features through existing neighborhoods that would create new physical barriers in the EIR Study Area. Therefore, implementation of the proposed General Plan 2040 would not physically divide an established community, and impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The proposed Downtown Precise Plan is a critical part of the proposed General Plan because roughly half of the city's future housing and employment growth is expected to occur in the Downtown Precise Plan Area. The Downtown Precise Plan identifies growth and development opportunities; provides the principles, policies, and strategies to guide investment; and proposes a form-based code to replace the current zoning standards. Once the Downtown Precise Plan is adopted and the San Rafael Zoning Ordinance is amended, the Downtown Precise Plan will serve as the overarching guiding document that provides strategies and recommendations for growth within the Downtown Precise Plan Area.

Like potential future development in the remainder of the EIR Study Area outside of the Downtown Precise Plan Area, such development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing development and infrastructure. The proposed Downtown Precise Plan distinguishes areas in the Downtown Precise Plan Area with four distinct sub-areas, which group portions of the Downtown Precise Plan Area that are similar in character. Recommendations in each sub-area reflect existing conditions to enhance the connectivity and design character of the sub-area. Future development under the proposed project would generally retain the existing roadway patterns and would include circulation improvements, such as access points, sidewalks, and bike lanes/paths, that are intended to improve circulation and multimodal connectivity. These improvements do not propose any new major roadways or other physical features through parcels designated for residential use or other communities that would create new barriers in the Downtown Precise Plan Area or greater San Rafael. Therefore, while land use and zoning changes are proposed within the Downtown Precise Plan Area, the proposed project would not divide existing established community, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

LU-2 Implementation of the proposed project could cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

General Plan 2040

The proposed General Plan's potential to conflict with other applicable plans and regulations adopted for the purpose of avoiding or mitigating an environmental effect is discussed in detail in the other environmental topic chapters of this Draft EIR. Specifically, these discussions are in Chapter 4.3, Air Quality; Chapter 4.4, Biological Resources; Chapter 4.5, Cultural and Tribal Cultural Resources; Chapter 4.8, Greenhouse Gas Emissions; Chapter 4.9, Hazards and Hazardous Materials; Chapter 4.10, Hydrology and Water Quality; Chapter 4.13, Noise; Chapter 4.14, Population and Housing; Chapter 4.15, Public Services and Recreation; Chapter 4.16, Transportation; Chapter 4.17, Utilities and Service Systems; and Chapter 4.18, Wildfire. As discussed in these chapters, implementation of the proposed General Plan 2040 would not be inconsistent with or obstruct the implementation of any applicable plan or regulation adopted for the purposes of avoiding or mitigating an environmental effect.

The proposed General Plan 2040 Land Use (LU) Element maintains consistency with the *Marin Countywide Plan* through a goal, policies, and a program that ensure land use planning decisions inside and adjacent to the San Rafael city limits do not conflict with one another. The following goal, policies, and program ensure a collaborative process as potential future development outside the San Rafael city limits occurs:

Goal LU-1: Well-Managed Growth and Change. Grow and change in a way that serves community needs, improves fiscal stability, and enhances the quality of life.

- Policy LU-1.5: Development Beyond the Urban Service Area. Retain undeveloped areas outside of San Rafael's Urban Service Area boundary but within its Planning Area in agricultural or open space uses.
- Policy LU-1.7: Land Use Planning in Surrounding Jurisdictions. Continue to work with the County of Marin and the cities of Larkspur, Novato, Ross, and San Anselmo to ensure that land use changes outside the San Rafael city limits will positively affect San Rafael.
  - Program LU-1.7A: Development Adjacent to San Rafael. Work with the County, other jurisdictions, neighborhood groups, and residents to review applications for development in areas adjacent to San Rafael's city limits or within the Sphere of Influence.

The proposed General Plan 2040 is the primary planning document for the city of San Rafael. The proposed update is intended to ensure consistency between the General Plan, Zoning Ordinance, and State law. Because the proposed General Plan 2040 is the overriding planning document for the city, and because the proposed General Plan 2040 involves amending the General Plan 2020 and the Zoning Ordinance in the Downtown Precise Plan Area to improve consistency, the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As stated above, the General Plan is the primary planning document for the City of San Rafael. Adoption and implementation of the proposed Downtown Precise Plan would further the objectives and policies of the General Plan and would not obstruct its attainment. The proposed Downtown Precise Plan is intended to ensure consistency between the General Plan and Zoning Ordinance.

The proposed Downtown Plan includes the Downtown Code, which includes an amendment to the City's Zoning Ordinance in order to be consistent with the Downtown Precise Plan Area's proposed Downtown Mixed Use land use designation. The proposed Downtown Code has been prepared to reduce potential environmental impacts from future development in the Downtown Precise Plan Area. Other than as identified, no other development regulations are being modified or added as part of the proposed Downtown Precise Plan. The proposed Downtown Code would replace existing Zoning Districts and regulations for all of the properties in the Downtown Precise Plan Area with the exception of a few parcels in the Latham Street area, which will retain their Multifamily Residential District ([Medium Density] 2,500 square feet per dwelling unit [MR2.5]) zoning designation, and the existing open space zoning designations. The proposed Downtown Code would establish new Downtown Zones for the Downtown Precise Plan Area. Each of the Downtown Zones are established based on the intent of the desired physical form and character of particular environments envisioned in the proposed Downtown Precise Plan. The proposed zones focus on mixed-use, walkable areas of the Downtown Precise Plan Area and range in function and intensity.

While the proposed Downtown Precise Plan is the guiding document for the Downtown Precise Plan Area, land use planning and policies for the Downtown Precise Plan Area are dictated by the proposed General Plan 2040. The Downtown Precise Plan would be adopted as part of the General Plan 2040. The proposed Downtown Precise Plan complements and provides more specifics to the proposed General Plan 2040 but does not include policy details that override the policies which would be adopted as part of the proposed General Plan 2040. Therefore, because the General Plan is the overriding planning document for the City, and because the proposed Downtown Precise Plan involves amending the General Plan and Zoning Ordinance to ensure consistency, the impact would be *less than significant*.

Significance with Mitigation: Less than significant.

LU-3 Implementation of the proposed project could result in a cumulatively considerable impact to land use and planning.

The geographic context for the cumulative land use and planning impacts would occur from potential future development under the proposed project combined with impacts of development on lands adjacent to the city.

As discussed in Impact Discussions LU-1 and LU-2, the proposed project would not divide an established community or conflict with established plans, policies, and regulations. The proposed project would not conflict with any State, regional, or local land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Future development that would be allowed under the

proposed project would not create substantial land use impacts. Development would likely continue to occur in the surrounding cities and the unincorporated areas of Marin County. However, such development would largely be taking place in already urbanized areas as infill development and would not require development or demolition that would create land use conflicts or divide established communities. Therefore, the proposed project would not result in a cumulatively considerable contribution to cumulative impacts related to land use changes, and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

4.12 MINERAL RESOURCES

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project related to mineral resources. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of project impacts and cumulative impacts.

4.12.1 ENVIRONMENTAL SETTING

4.12.1.1 REGULATORY FRAMEWORK

State Regulations

State regulations require the preservation of mineral resource sites and ensure that nearby land uses are compatible with extraction. The California Department of Conservation, Geological Survey (California Geologic Survey) is the State agency responsible for inventorying and mapping mineral resources in California. Regulations pursuant to the California Geological Survey mineral resource determinations are generally linked with county general plan land use elements and other types of local and regional development rules. The California State Mining and Geology Board maintains information on mineral deposits of statewide or regional significance.

The California Geological Survey classifies lands into Aggregate and Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1974. Cities and counties are required to incorporate MRZs delineated by the State into their general plans.[1] The MRZs identify whether known or inferred significant mineral resources are present in areas. MRZs are grouped by the State into four categories based on geologic factors, with MRZ-2 lands having the greatest importance. MRZ-2 sites are underlain by demonstrated mineral resources considered important to the region or the State as a whole. The only mineral resource land in the Environmental Impact Report (EIR) Study Area is the San Rafael Rock Quarry and McNear Brickworks, which is identified by the State as MRZ-2.

Local Regulations

Marin Countywide Plan

The *Marin Countywide Plan* is a comprehensive long-range guide for land use in the unincorporated portions of Marin County, including land outside of San Rafael's city limit but within the EIR Study Area. The current *Marin Countywide Plan* was adopted on November 7, 2007, and includes the following mineral (MIN) policies identified in the Built Environment Element:

- MIN-1.4 Require Best Available Management Practices. Require best available management practices through the use-permit process to minimize or avoid nuisances, hazards, or adverse environmental impacts.

[1] Public Resources Code Section 2762(a)(1).

- MIN-1.6 Address Operational Issues. When a use permit comes up for renewal, or if a property owner amends a surface mining and quarrying permit, the environmental impacts of the project shall be evaluated and mitigated through the California Environmental Quality Act and the permit process.

The Marin County Public Works Department is responsible for issuing permits and overseeing permit compliance for the San Rafael Rock Quarry and McNear Brickworks. Additional information on the San Rafael Rock Quarry and McNear Brickworks, with respect to operations and permit compliance, can be found on the Marin County's webpage "San Rafael Rock Quarry" at www.marincounty.org.

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to mineral resources, particularly the existing San Rafael Rock Quarry and McNear Brickworks, are in the Neighborhoods Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. Policies in the Neighborhoods Element related to the San Rafael Rock Quarry and McNear Brickworks have been strengthened, reflecting edits requested by property owners and the neighboring residents of Peacock Gap. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.12.3, Impact Discussion.

4.12.1.2 EXISTING CONDITIONS

The 300-acre San Rafael Rock Quarry and McNear Brickworks site, owned by the Dutra Group, is one of the largest privately held properties in the EIR Study Area.[2] The site is located on Point San Pedro Road to the east of the city limits but within the City's sphere of influence and EIR Study Area. Most of the area is designated as Mineral Resource, with low-lying areas and wetlands designated as Conservation in General Plan 2020.[3] The San Rafael Rock Quarry and McNear Brickworks is the only parcel designated as a mineral resource with local, regional, or State significance within the vicinity of the EIR Study Area.[4] It is identified by the State as Class 2 Mineral Resource Zone (MRZ-2) lands and is a State-designated resource.[5]

The San Rafael Rock Quarry and McNear Brickworks has been active for over 100 years. It has become the primary supplier of aggregate material to Marin County and is a key supplier in the greater Northern California area. Materials supplied include asphalt, drain rock, base rock, rip rap, and sand.[6]

[2] California Geologic Survey. 2013. Update of Mineral Land Classification: Aggregate Materials in The North San Francisco Bay Production-Consumption Region, Sonoma, Napa, Marin, And Southwestern Solano Counties, California. file:///C:/Users/jprotsman/Downloads/SR%20205%20North%20Bay%20Report_Final.pdf.

[3] City of San Rafael, February 11, 2020, Planning Commission Staff Report, pages 10 to 11.

[4] City of San Rafael, February 2004, San Rafael General Plan 2020 Draft Environmental Impact Report, Exhibit EIR-2, page 17

[5] City of San Rafael, January 2009, San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit, Combined Final Environmental Impact Report, State Clearinghouse Numbers 2005102122 and 2007082097, Page 3-10.

[6] Dutra Group, San Rafael Rock Quarry, Materials, http://www.sanrafaelrockquarry.com/materials, accessed on December 11, 2019.

The County of Marin approved a Surface Mining and Quarrying Permit and Reclamation Plan for the San Rafael Rock Quarry in 2010 that mandates a cease of operations in 2024.[7] The Reclamation Plan was a requirement for approval of the Surface Mining and Quarrying Permit. Reclamation work outlined in the Reclamation Plan includes grading, erosion and sediment control measures, and vegetation restoration for the northeastern portion of the site, which was no longer operational at the time of permit approval. Permit approval also required continuous on-site monitoring, which includes air, noise, and seismic monitoring, as well as working closely with the United States Fish and Wildlife Service to protect the California red-legged frog. A grading permit issued in 2018 included more specific details for the avoidance of the California red-legged frog.[8]

The Dutra Group recently submitted an application amendment to extend operations through 2044 to allow access to rock reserves remaining under the existing entitlements for the San Rafael Rock Quarry and McNear Brickworks.[9] The Amended Surface Mining and Quarrying Permit and Amended Reclamation Plan would maintain all conditions of the 2010-approved documents, including maintaining the San Rafael Rock Quarry's vested mining rights to extract a total of 17.5 million tons of rock from the site.[10] The Amended Surface Mining and Quarrying Permit and associated Final EIR (State Clearinghouse Number 2008082097) and the Amended Reclamation Plan and associated Final EIR (State Clearinghouse Number 2005102122) also include a Blasting Operation Safety Plan, a Noise Reduction Plan, a Greenhouse Gas Reduction Plan, and a Marsh Restoration Plan.[11]

Both the San Rafael General Plan 2020 and the San Rafael Rock Quarry Reclamation Plan Final EIR include policies that support an opportunity for the City of San Rafael to annex the quarry site upon the cessation of operations.[12,13] General Plan 2020 includes language in the Neighborhoods Element that reflects the Reclamation Plan's possibility of developing the site of the San Rafael Rock Quarry and McNear Brickworks with a harbor and marina along with commercial, residential, neighborhood commercial, administrative and professional, and open space uses in the event the City of San Rafael annexes the land.[14]

[7] County of Marin, September 28, 2010, Marin County Surface Mining and Quarrying Permit # Q-72-03, Amendment #1, Conditions of Approval Including Amended Reclamation Plan for the San Rafael Rock Quarry.

[8] County of Marin, June 25, 2018, County of Marin- News Releases- Rock Quarry Reclamation, https://www.marincounty.org/main/county-press-releases/press-releases/2018/dpw-rockquarry-062518, accessed on December 11, 2019.

[9] Marin County, Department of Public Works, October 18, 2019, Notice of Project Status, https://www.marincounty.org/-/media/files/departments/pw/land-use/quarry/notice-of-project-status-complete-new-app.pdf?la=en, accessed on March 25, 2020.

[10] Pera, Matthew, MarinIJ, October 17, 2019, Updated: October 20, 2019, https://www.marinij.com/2019/10/17/san-rafael-rock-quarry-applies-for-20-year-mining-extension/.

[11] County of Marin, Department of Public Works, San Rafael Rock Quarry Information, https://www.marincounty.org/depts/pw/divisions/projects/land-use/quarry, accessed on December 11, 2019.

[12] City of San Rafael, April 28, 2017, The City of San Rafael General Plan 2020, Neighborhoods Element, Page 119.

[13] City of San Rafael, January 2009, San Rafael Rock Quarry Amended Reclamation Plan and Amended Surface Mining and Quarrying Permit, Combined Final Environmental Impact Report, State Clearinghouse Numbers 2005102122 and 2007082097, Pages 4.6-5 and 4.6-13.

[14] City of San Rafael, April 28, 2017, The City of San Rafael General Plan 2020, Neighborhoods Element, Page 119.

4.12.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would result in significant impacts to mineral resources if it would:

1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.
3. Result in significant cumulative impacts to mineral resources.

4.12.3 IMPACT DISCUSSION

MIN-1	**Implementation of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.**

General Plan 2040

The San Rafael Rock Quarry and McNear Brickworks are the only designated mineral resource sites with local, regional, or State significance in the EIR Study Area. The site is located outside of the San Rafael city limits, but within the EIR Study Area. As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development. These urbanized areas do not have known mineral resources of value to the region or the State. Therefore, implementation of General Plan 2040 would not include land use changes that would cause an adverse impact on any lands within or adjacent to the EIR Study Area that have a known mineral resource of value to the region or the State. As discussed in Section 4.12.1.2, Existing Conditions, the County of Marin is currently reviewing an operating permit extension for the San Rafael Rock Quarry and McNear Brickworks that is anticipated to be approved, extending mining operations through 2044.

The proposed Conservation and Climate Change (C) Element and the Neighborhoods Element (NH) contain goals, policies, and programs that require local planning and development decisions to consider impacts to mineral resources. The following General Plan 2040 goals, policies, and programs would serve to minimize potential adverse impacts on mineral resources:

Goal C-1: Supporting our natural communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.18: Mineral Resource Management. Work with the County of Marin to permit the continued use of property in the San Rafael sphere of influence for mineral resource extraction,

subject to permitting procedures and mitigation requirements that reduce potential adverse impacts on the natural environment and surrounding uses.

- Policy NH-5.6: San Rafael Rock Quarry Operations. Continue to work with the County of Marin, the quarry operator, and area residents to address community concerns and minimize impacts of quarry operations on surrounding residents, including noise, air quality, vibration, street maintenance, and truck traffic.
  - Program NH-5.6A: Quarry Impacts. Seek ongoing input into County code enforcement activities, land use entitlements, or negotiations with the quarry operator that might reduce impacts on City infrastructure or properties in the City of San Rafael. The City will urge the County to require Best Management Practices for Quarry operations, including air quality testing, water quality monitoring and improvements, and runoff controls that reflect the latest technology and scientific methods. The City will further promote joint City-County and Quarry operator efforts to address flooding and sea level rise, pedestrian and bicycle safety, wetlands restoration, and noise mitigation.
  - Program NH-5.6B: Environmental Review. If and when the Quarry applies for modifications to its existing Operating Permit, participate in discussions to ensure that:
    - Potential environmental impacts and hazards are minimized.
    - Public health, safety and quality of life are protected.
    - Traffic impacts are addressed, particularly impacts on Point San Pedro Road.
    - Future public costs associated with reclamation, such as long-term environmental restoration and infrastructure repair, are objectively measured and considered in decisions about future quarry operations.
    - Collaborate with residents to ensure that any modifications to the existing Operating Permit remain within the restrictions imposed by existing and future court orders.
- Policy NH-5.7: San Rafael Rock Quarry and McNear Brickworks Long-Term Plans. If operations cease during the time frame of this Plan, consider annexation and redevelopment of the San Rafael Rock Quarry and McNear Brickworks, taking into account the following:
  - Consider the County's Amended Reclamation Plan, as it may be further amended in the future, in land use decisions. The current Reclamation Plan supports a mixture of single family residences, townhomes, and condominium units; a marina; commercial, recreational, hospitality, and other neighborhood-serving uses, and open space. A revised Reclamation Plan is anticipated during the timeframe of this General Plan and could alter the planned post-mining uses. Specific future uses would be determined through a separate entitlement process that would potentially include annexation into the City.
  - Consider redevelopment of the site to the extent that traffic capacity is available and the project can meet the City's transportation standards, including performance of intersections between the site and US 101. Alternative modes of transportation may be considered to facilitate compliance with City standards. Water transit (including water taxis) should be considered in any phase of the project and factored into the transportation analysis.
  - If needed for traffic capacity and to the extent consistent with City traffic standards, Point San Pedro Road should be expanded to four lanes east of Riviera Drive, including bicycle lanes consistent with the Bicycle and Pedestrian Master Plan.

- Create a public use park band along the existing shoreline averaging at least 100 feet in width linking McNear Beach with the public walkway along Point San Pedro Road, as approved by the Bay Conservation and Development Commission.
- Consider opportunities for community facilities serving residents of the San Pedro Peninsula.
- Protect the freshwater marsh and ponds, taking sea level rise impacts into consideration. Consider restoring the saltwater marsh to tidal action.
- Preserve and gradually restore tree species native to the site's woodland areas.
- Incorporate some of the historic brickworks into the project's design.
- Consider redevelopment of the site in phases as reclamation is completed in specific areas. The McNear Brickyard would likely be the first phase and would require a site access road from Point San Pedro Road that is separate from the road accessing the mining and asphalt operations. Phased redevelopment would require amendments to the existing Quarry entitlements to be approved by the County in coordination with the property owner.
- Program NH-5.7A: Quarry Planning. Participate, through the County of Marin, in any revisions to the San Rafael Rock Quarry Reclamation Plan, which should form the basis for decisions about future land uses and possible annexation.
- Program NH-5.7B: Shoreline Use. Use the development review process to establish a bay frontage linear park that connects McNear Beach to the existing shoreline walkway along Point San Pedro Road.

Additionally, the *Marin Countywide Plan* includes Policies MIN-1.4 and MIN-1.6, discussed in Section 4.12.1.1, Regulatory Framework, which address the future of the San Rafael Rock Quarry and McNear Brickworks operational best management practices and permitting process. These policies, along with the policies and programs in General Plan 2040, would not result in direct physical changes to the San Rafael Rock Quarry and McNear Brickworks. Furthermore, no land use changes or new development potential are proposed on the San Rafael Rock Quarry and McNear Brickworks property. Therefore, implementation of the proposed General Plan 2040 would not result in the loss of availability of a known mineral resource, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area does not contain known mineral resources that are of value to the region or the State. Therefore, implementation of the Downtown Precise Plan would not cause an adverse impact to a known mineral resource that is of value to the region or to the State, and *no impact* would occur.

Significance without Mitigation: No impact.

MIN-2 Implementation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

General Plan 2040

The San Rafael Rock Quarry and McNear Brickworks is located within the EIR Study Area and is delineated as a mineral resource in the existing General Plan 2020 and in the proposed project. The San Rafael Rock Quarry and McNear Brickworks has both local and regional significance because resources extracted at the site are used in both local and regional development and municipal construction projects. As discussed in Impact Discussion MIN-1, operations at the San Rafael Rock Quarry and McNear Brickworks are expected to occur throughout 2044 and implementation of General Plan 2040 would not result in loss of any locally important mineral resource recovery sites, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Impact Discussion MIN-1, there are no known mineral resources which are of value to the region or the State in the Downtown Precise Plan Area. Therefore, implementation of the Downtown Precise Plan would not result in loss of any locally important mineral resource recovery sites, and *no impact* would occur.

Significance without Mitigation: No impact.

MIN-3 Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to mineral resources.

As discussed in Chapter 4, Environmental Analysis, the geographic scope of the cumulative analysis for mineral resources of statewide importance considers the surrounding incorporated and unincorporated land, the region, and the state. Future development throughout the state could result in the loss of mineral resources that are of value to the region and the residents of the state, and therefore impacts could be significant.

The proposed project does not include any changes in land use on or near the San Rafael Rock Quarry and McNear Brickworks site through the project's horizon year. Therefore, implementation of the proposed project would not result in a cumulatively considerable contribution to cumulative impacts related to the conversion of resources, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

MINERAL RESOURCES

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4.13 NOISE AND VIBRATION

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to noise and vibration. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts related to implementation of the proposed project. Noise monitoring and modeling data are included as Appendix H, Noise Data, of this Draft Environmental Impact Report (EIR).

4.13.1 ENVIRONMENTAL SETTING

4.13.1.1 TERMINOLOGY

The following are definitions for terms used throughout this chapter.

- **Sound.** A disturbance created by a vibrating object, which when transmitted by pressure waves through a medium such as air, is capable of being detected by the human ear.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A measure of sound on a logarithmic scale.
- **AWeighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}).** The mean of the noise level, energy averaged over the measurement period.
- **L_{max}.** The maximum noise level during a measurement period.
- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period). This is also called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 pm to 7:00 am.
- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 pm to 10:00 pm and 10 dB added to the sound levels occurring during the period from 10:00 pm to 7:00 am. Note: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent/interchangeable.

- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second or in/sec) due to ground vibration.
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the United States, the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

4.13.1.2 SOUND FUNDAMENTALS

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Changes of 1 to 3 dBA are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernable to most people in an exterior environment whereas a 10 dBA change is perceived as a doubling (or halving) of the sound.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by weighting frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

Sound Measurement

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10 dBA is 10 times more intense than 1 dBA, 20 dBA is 100 times more intense, and 30 dBA is 1,000 times more intense. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dBA for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dBA for each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time, or 1, 5, and 15 minutes per hour. These "Ln" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and the City require that, for planning purposes, an artificial dBA increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 p.m. to 10:00 p.m. and 10 dBA for the hours from 10:00 p.m. to 7:00 a.m. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 pm and 10:00 pm. Both descriptors give roughly the same 24-hour level (i.e., typically within 1 dBA of each other), with the CNEL being only slightly more restrictive (i.e., higher); therefore, they are used interchangeably in this assessment.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure, the heart, and the nervous system. Extended periods of noise exposure above 90 dBA can result in permanent hearing damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation becomes painful. This is called the threshold of pain. Table 4.13-1 shows typical noise levels from familiar noise sources.

TABLE 4.13-1 TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans), 2013. *Technical Noise Supplement ("TeNS")*.

4.13.1.3 VIBRATION FUNDAMENTALS

Vibration is an oscillating motion. Like noise, vibration is transmitted in waves, but through earth or solid objects. Unlike noise, vibration is typically felt rather than heard.

Vibration can be either natural—e.g., from earthquakes, volcanic eruptions, landslides—or human-made, such as from explosions, heavy machinery, or trains. Both natural and human-made vibration may be continuous, such as from operating machinery, or impulsive, as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude can be characterized in three ways—displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position. Particle velocity is the rate of speed at which the particles move in inches per second (in/sec) or millimeters per second. Table 4.13-2 presents the human reaction to various levels of PPV.

TABLE 4.13-2 HUMAN REACTION TO TYPICAL VIBRATION LEVELS

Vibration Level Peak Particle Velocity (in/sec)	Vibration Damage	Vibration Annoyance
0.006–0.019	Vibrations unlikely to cause damage of any type	Threshold of perception, possibility of intrusion
0.08	Recommended upper level of vibration to which ruins and ancient monuments should be subjected	Vibrations readily perceptible
0.10	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings	Level at which continuous vibration begins to annoy people
0.20	Threshold at which there is a risk to "architectural" damage to normal dwelling, i.e., houses with plastered walls and ceilings	Vibrations annoying to people in buildings
0.4–0.6	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges

Source: California Department of Transportation (Caltrans), 2013. *Transportation and Construction Vibration Guidance Manual*.

In addition to PPVs, vibrations also vary in frequency, and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, due to their suspension systems, buses often generate frequencies around 3 Hz at high vehicle speeds. It is less common, but possible, to measure traffic frequencies above 30 Hz.

For vibration annoyance from operational sources, vibration is measured in vibration decibels or VdB. A measurement of 65 VdB would result in an impact to highly sensitive uses with vibration-sensitive equipment (e.g., microscopes in hospitals and research facilities) and a measurement of 72 VdB would result in an impact to residential uses.

4.13.1.4 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, and local governments have established standards and ordinances to control noise.

Federal Regulations

Federal Highway Administration

Proposed federal or federal-aid highway construction projects at a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes, requires an assessment of noise and consideration of noise abatement pursuant to Code of Federal Regulations Title 23, Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise." The Federal Highway Administration (FHWA) has adopted noise abatement criteria (NAC) for sensitive receivers such as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals—when "worst-hour" noise levels approach or exceed 67 dBA L_{eq}. The California Department of Transportation

(Caltrans) has further defined "approaching" the NAC to be 1 dBA below the NAC for noise sensitive receivers (e.g., 66 dBA L_{eq} is considered approaching the NAC).[1]

United States Environmental Protection Agency

In addition to FHWA standards, the United States Environmental Protection Agency (USEPA) has identified the relationship between noise levels and human response. The USEPA has determined that over a 24-hour period, an L_{eq} of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an L_{eq} of 55 dBA and interior levels at or below 45 dBA. While these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community; therefore, they are not mandated.

The USEPA has also set 55 dBA L_{dn} as the basic goal for exterior residential noise intrusion. However, other federal agencies, in consideration of their own program requirements and goals—as well as the difficulty of actually achieving a goal of 55 dBA L_{dn}—have settled on 65 dBA L_{dn} as their standard. At 65 dBA L_{dn}, activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

Occupational Health and Safety Administration

The federal government regulates occupational noise exposure common in the workplace through the Occupational Safety and Health Administration under the USEPA. Such limitations would apply to the operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, and is therefore not addressed further in this analysis.

United States Department of Housing and Urban Development

The United States Department of Housing and Urban Development (HUD) has set a goal of 65 dBA L_{dn} as a desirable maximum exterior standard for residential units developed under HUD funding. (This level is also generally accepted by the State of California.) While HUD does not specify acceptable interior noise levels, standard construction of residential dwellings typically provides in excess of 20 dBA of attenuation with the windows closed. Based on this premise, the interior L_{dn} should not exceed 45 dBA.

Aircraft Noise Standards

The Federal Aviation Administration Advisory Circular Number 150 5020 2, "Noise Assessment Guidelines for New Helicopters," recommends the use of a cumulative noise measure, the 24-hour equivalent sound level, or $L_{eq}(24)$, so that the relative contributions of the heliport and other sound sources in the community can be compared. The $L_{eq}(24)$ is similar to the L_{dn} used in assessing the impacts of fixed-wing aircraft. The helicopter $L_{eq}(24)$ values are obtained by logarithmically adding the sound exposure level values over a 24-hour period.

[1] Caltrans Division of Environmental Analysis, 2020, *Traffic Noise Analysis Protocol.*

Public Law 96 193 also directs the Federal Aviation Administration to identify land uses that are "normally compatible" with various levels of noise from aircraft operations. Because of the size and complexity of many major hub airports and their operations, Federal Aviation Regulation Part 150 identifies a large number of land uses and their attendant noise levels.

State Regulations

General Plan Guidelines

The State of California, through its general plan guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels, expressed in CNEL. A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. The general plan guidelines provide cities with recommended community noise and land use compatibility standards that can be adopted or modified at the local level based on conditions and types of land uses specific to that jurisdiction.

California Building Code

The California Building Code is Title 24 of the California Code of Regulations. California Building Code Part 2, Volume 1, Chapter 12, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the L_{dn} or the CNEL, consistent with the noise element of the local general plan. The City regularly adopts updates to the California Building Code in the San Rafael Municipal Code (SRMC) Chapter 12.100, Adopted Codes.

California Building Code: California Green Building Standards Code

The State of California's noise insulation standards for nonresidential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards Code. The California Green Building Standards Code noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1hr)}$.

Airport Noise Standards

California Code of Regulations Title 21, Subchapter 6, Airport Noise Standards, establishes 65 dBA CNEL as the acceptable level of aircraft noise for persons living in the vicinity of airports. Noise-sensitive land uses in locations where the aircraft exterior noise level exceeds 65 dBA CNEL are generally incompatible, unless

an aviation easement for aircraft noise has been acquired by the airport proprietor, or the residence is a high-rise with an interior CNEL of 45 dBA or less in all habitable rooms and an air circulation or air conditioning system, as appropriate. Assembly Bill (AB) 2776 requires any person who intends to sell or lease residential properties in an airport influence area to disclose that fact to the person buying the property.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to noise are primarily in the Noise Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter in Section 4.13.3, Impact Discussion.

The Noise Element aims to limit the exposure of the community to excessive noise levels by guiding decisions concerning land use and location of new roads and transportation facilities. The City's land use compatibility standards provide urban planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels.

San Rafael Municipal Code

The SRMC includes various directives pertaining to noise. The SRMC is organized by title, chapter, and section. Most provisions related to noise impacts are included Title 8, Morals and Conduct, as follows:

- Chapter 8.13, Noise. This chapter limits exterior noise limits during daytime and nighttime hours. Section 8.13.040, General Noise Limits, states that no person shall produce noise levels greater than as summarized in Table 4.13-3, when measured on the designated property.

TABLE 4.13-3 EXTERIOR PROPERTY NOISE LIMITS (DBA)

Category	Daytime [a] Intermittent [c]/Constant [d]	Nighttime [b] Intermittent [c]/Constant [d]
Residential	60/50	50/40
Mixed Use	65/55	55/45
Commercial	65/55	65/55
Industrial	70/60	NA

Notes:
a. *"Daytime" hours are Sunday through Thursday 7:00 a.m. to 9:00 p.m. and 7:00 a.m. to 10:00 p.m. Friday and Saturday*
b. *"Nighttime" hours are 9:00 p.m. to 7:00 a.m. Sunday through Thursday and 10:00 p.m. to 7:00 p.m. Friday and Saturday*
c. For intermittent sound, Lmax shall be used.
d. For constant sound, Leq shall be used.
Source: City of San Rafael Municipal Code, Section 8.13 *Noise.*

For public property, the most restrictive noise standard shall apply to any private property adjoining the public property. Interior noise levels of a multifamily residential structure are limited to 40 dBA L_{max} and 35 dBA L_{eq} for daytime hours, and 35 dBA L_{max} and 30 dBA L_{eq} for nighttime hours.

Under SRMC Section 8.13.050, construction noise is an exception to the provisions of the SRMC during the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. Saturdays, and no construction activities are to take place on Sundays and holidays, unless otherwise approved by the City. In addition to this exception, noise levels are not to exceed 90 dBA L_{max} during allowable construction hours at any point outside the property plane (property line) of the project.

Pursuant to SRMC Section 8.13.050, sound-generating devices or instruments used for any indoor or outdoor sound performances, athletic events, and special events shall be permitted, provided they do not exceed a noise level of 80 dBA measured at a distance of not less than 50 feet from the property line or other limits, as may be established by any required approvals and permits.

Section 8.13.070 exempts the following from the provisions of the SRMC:

- Aerial warning devices which are required by law to protect the health, safety, and welfare of the community;
- Emergency vehicle responses and all necessary equipment utilized for the purpose of responding to an emergency, or necessary to restore, preserve, protect or save lives or property from imminent danger of loss or harm;
- Aviation, railroad, and public transit operations;
- The operation of any municipal or public utility vehicles;
- Public safety training exercises conducted between the hours of eight a.m. (8:00 a.m.) and eight p.m. (8:00 p.m.);
- Uses established through any applicable discretionary review process containing specific noise conditions of approval and/or mitigation measures;
- Work on capital improvements, or repairs on public property by employees or contractors of the city;
- Vehicle noise subject to regulation under the California Vehicle Code;
- Emergency repair work performed by, or at the request of, a property owner on his or her private property, where the delay required to obtain an exception permit under this chapter would result in substantial damage, personal injuries, or property loss to the owner, provided that such emergency work shall be subject to such reasonable conditions as may be imposed by authorized city employees to mitigate the noise level of the activity.
- Portable generator used during emergencies or utility power outages per manufacturer's recommendations.
- Stationary generator installed and used during emergencies, utility power outages or routine testing per manufacturer's recommendations. Routine testing for stationary generators shall be conducted between the hours of ten a.m. (10:00 a.m.) and four p.m. (4:00 p.m.).

4.13.1.5 EXISTING CONDITIONS

Primary noise sources in the EIR Study Area include US-101, I-580, the Sonoma-Marin Area Rail Transit (SMART) rail, and traffic on local roadways. In commercial and retail areas, truck loading docks can be a source of localized noise.

Sensitive Receptors

Certain land uses, such as residences, schools, and hospitals, are particularly sensitive to noise and vibration. Sensitive receptors within the EIR Study Area include residences, senior housing, schools, places of worship, and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities that are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not particularly sensitive to noise or vibration.

Ambient Noise Measurements

Ambient noise monitoring was conducted within the EIR Study Area by PlaceWorks in May 2019 to determine a baseline noise level at different environments. Measurements were made during weekday periods when the EIR Study Area is expected to be most active. Long-term (48-hour) measurements were conducted at 10 locations within the EIR Study Area, and short-term (10 minute) measurements were conducted at 22 locations in the EIR Study Area. Of these, 3 long-term and 9 short-term measurements were conducted in the Downtown Precise Plan Area. All measurements were conducted from Thursday, May 2, through Thursday, May 9, 2019. Short-term measurements were generally made during morning (7:00 a.m. to 10:00 a.m.) and evening (3:00 p.m. to 7:00 p.m.) peak commute hours.

Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be representative of the typical conditions for the season. All sound level meters were equipped with a windscreen during measurements.

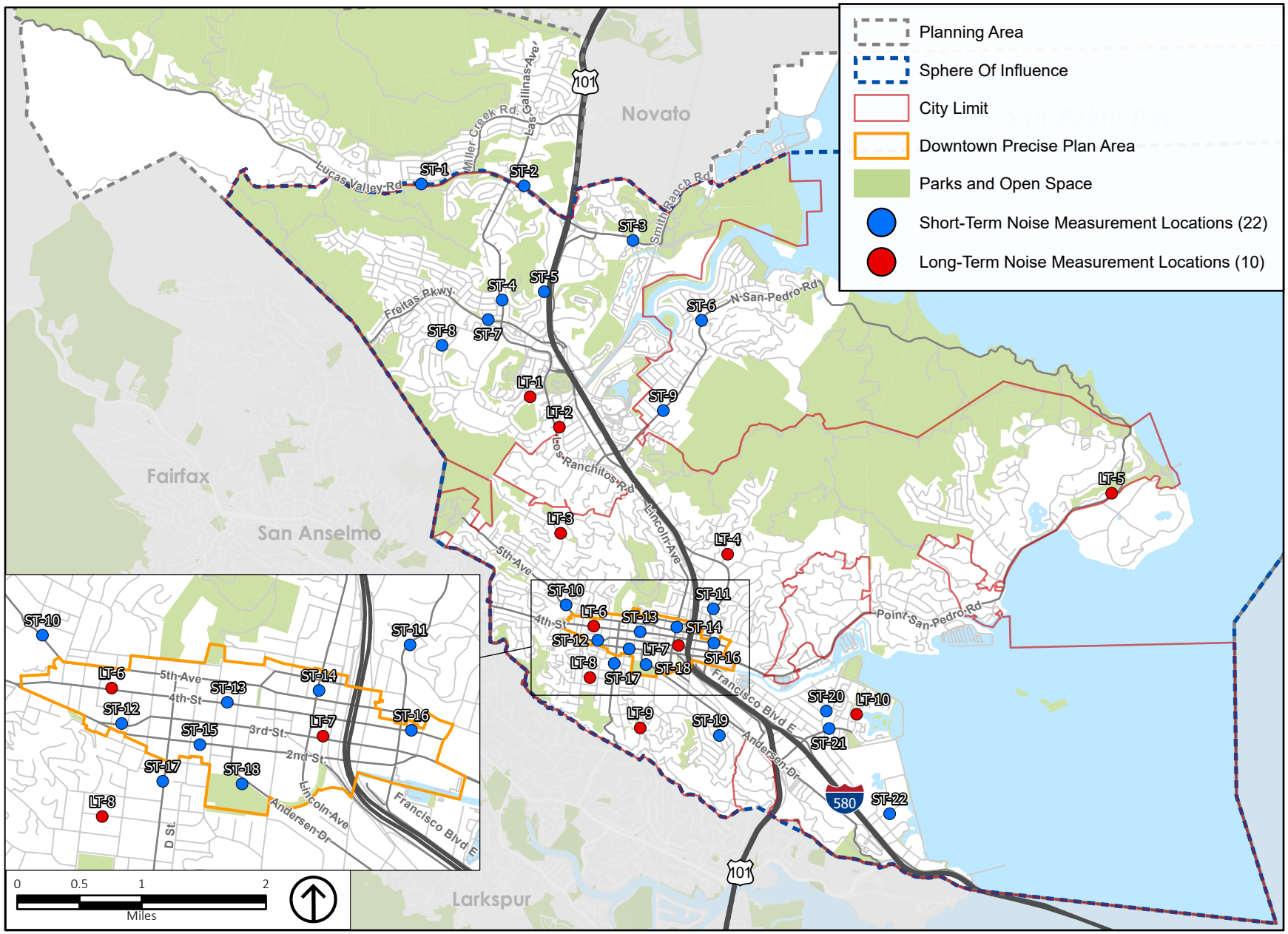
All sound level meters used for noise monitoring satisfy the American National Standards Institute standard for Type 1 instrumentation.[2] The sound level meters were set to "slow" response and "A" weighting (dBA). The meters were calibrated prior to and after the monitoring period. All measurements were at least 5 feet above the ground and away from reflective surfaces. Noise measurement locations are described below and shown on Figure 4.13-1.

Long-Term Noise Monitoring Locations

- Long-Term Location 1 (LT-1) was on Northgate Drive across from Northgate Mall. The measurement location was approximately 30 feet south of the Northgate Drive eastbound centerline. A 24-hour noise measurement was conducted, beginning at the 5:00 p.m. hour on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic.

[2] Monitoring of ambient noise was performed using Larson-Davis Model LxT and 820 sound level meters.

- Long-Term Location 2 (LT-2) was adjacent to the SMART train right-of-way at the end of Las Gallinas Avenue. During train pass-bys, the crossing bell was noted, but there was no train horn. The measurement location was approximately 50 feet east of the SMART centerline. A 24-hour noise measurement was conducted, beginning at the 5:00 p.m. hour on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by rail activity and traffic on Los Ranchitos Road.
- Long-Term Location 3 (LT-3) was on Elizabeth Way north of Chestnut Avenue. The measurement location was approximately 25 feet east of the Elizabeth Way northbound centerline. A 24-hour noise measurement was conducted, beginning at the 4:00 p.m. hour on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic.
- Long-Term Location 4 (LT-4) was on Mountain View Avenue south of Linden Lane. The measurement location was approximately 15 feet west of the Mountain View Avenue southbound centerline. A 24-hour noise measurement was conducted, beginning at the 8:00 p.m. hour on Thursday, May 2, 2019. The noise environment of this site is characterized primarily by local traffic.
- Long-Term Location 5 (LT-5) was on Point San Pedro Road east of Heritage Drive. The measurement location was approximately 45 feet north of the Point San Pedro Road westbound centerline. A 24-hour noise measurement was conducted, beginning at the 4:00 p.m. hour on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic.
- Long-Term Location 6 (LT-6) was on Fourth Street east of F Street. The measurement location was approximately 20 feet north of the Fourth Street westbound centerline. A 24-hour noise measurement was conducted, beginning at the 7:00 p.m. hour on Thursday, May 2, 2019. The noise environment of this site is characterized primarily by local traffic and downtown commercial activity.
- Long-Term Location 7 (LT-7) was on the corner of Third Street and Tamalpais Avenue. A 24-hour noise measurement was conducted, beginning at the 6:00 p.m. hour on Thursday, May 2, 2019. The noise environment of this site is characterized primarily by traffic on local roadways and US-101, SMART rail activity, and downtown commercial activity.
- Long-Term Location 8 (LT-8) was on Bayview Street west of Marin Street. The measurement location was approximately 20 feet south of the Bayview Street eastbound centerline. A 24-hour noise measurement was conducted, beginning at the 6:00 p.m. hour on Thursday, May 2, 2019. The noise environment of this site is characterized primarily by local traffic.
- Long-Term Location 9 (LT-9) was on Southern Heights Boulevard north of Meyer Road. A 24-hour noise measurement was conducted, beginning at the 3:00 p.m. hour on Tuesday, May 7, 2019. The noise environment of this site was noted to be relatively low, however distant property maintenance noise was noted during installation of the noise monitoring equipment.
- Long-Term Location 10 (LT-10) was on Catalina Boulevard north of Baypoint Drive. The measurement location was approximately 20 feet west of the Catalina Boulevard southbound centerline. A 24-hour noise measurement was conducted, beginning at the 5:00 pm hour on Thursday, May 2, 2019. The noise environment of this site is characterized primarily by local traffic.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-1
Approximate Noise Monitoring Locations

Short-Term Noise Monitoring Locations

- Short-Term Location 1 (ST-1) was on Lucas Valley Road east of Huckleberry Road. The measurement location was approximately 20 feet north of the Lucas Valley Road westbound centerline. A 15-minute noise measurement was conducted, beginning at 3:28 p.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included occasional aircraft flyovers and birds.
- Short-Term Location 2 (ST-2) was on Lucas Valley Road east of Las Gallinas Avenue. The measurement location was approximately 20 feet north of the Lucas Valley Road westbound centerline. A 15-minute noise measurement was conducted, beginning at 3:02 p.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic.
- Short-Term Location 3 (ST-3) was on Smith Ranch Road west of Yosemite Road. The measurement location was approximately 35 feet south of the Smith Ranch Road eastbound centerline. A 15-minute noise measurement was conducted, beginning at 3:53 p.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included occasional aircraft flyovers and distant rail crossing noise.
- Short-Term Location 4 (ST-4) was in front of 1054 Las Gallinas Avenue. The measurement location was approximately 30 feet east of the Las Gallinas Avenue northbound centerline. A 15-minute noise measurement was conducted, beginning at 4:39 p.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included birds and distant highway noise.
- Short-Term Location 5 (ST-5) was on Los Gamos Drive north of Oleander Drive. The measurement location was approximately 30 feet east of the Los Gamos Drive northbound centerline. A 15-minute noise measurement was conducted, beginning at 4:17 pm on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by highway traffic. Secondary noise sources included occasional aircraft flyovers and birds. No car pass-bys were observed on Los Gamos Drive.
- Short-Term Location 6 (ST-6) was in front of 405 North San Pedro Road. The measurement location was approximately 20 feet west of the North San Pedro Road southbound centerline. A 15-minute noise measurement was conducted, beginning at 9:44 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included distant construction, nearby HVAC equipment, and occasional dogs and chickens.
- Short-Term Location 7 (ST-7) was on Manuel T. Freitas Parkway west of Las Gallinas Avenue. The measurement location was approximately 30 feet north of the Manuel T. Freitas Parkway westbound centerline. A 15-minute noise measurement was conducted, beginning at 5:00 p.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included birds and dogs.
- Short-Term Location 8 (ST-8) was in front of 411 Montecillo Road. The measurement location was approximately 20 feet west of the Montecillo Road southbound centerline. A 15-minute noise measurement was conducted, beginning at 5:24 p.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included occasional aircraft flyovers, and typical residential noises such as children playing.

- Short-Term Location 9 (ST-9) was across from 148 North San Pedro Road. The measurement location was approximately 20 feet south of the North San Pedro Road northbound centerline. A 15-minute noise measurement was conducted, beginning at 9:23 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included occasional birds.
- Short-Term Location 10 (ST-10) was on Fifth Avenue east of Eye Street. The measurement location was approximately 25 feet north of the Fifth Avenue westbound centerline. A 15-minute noise measurement was conducted, beginning at 3:00 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included occasional birds.
- Short-Term Location 11 (ST-11) was in front of 1330 Grand Avenue. The measurement location was approximately 20 feet east of the Grand Avenue northbound centerline. A 15-minute noise measurement was conducted, beginning at 8:56 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic and distant highway noise. Secondary noise sources included occasional birds.
- Short-Term Location 12 (ST-12) was on Third Street west of Shaver Street. The measurement location was approximately 30 feet north of the Third Street westbound centerline. A 15-minute noise measurement was conducted, beginning at 3:30 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included a nearby car wash.
- Short-Term Location 13 (ST-13) was in front of 1122 Fourth Street. The measurement location was approximately 20 feet north of the Fourth Street westbound centerline. A 15-minute noise measurement was conducted, beginning at 5:01 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic and downtown commercial activity.
- Short-Term Location 14 (ST-14) was on Lincoln Avenue north of Fifth Avenue. The measurement location was approximately 20 feet east of the Lincoln Avenue northbound centerline. A 15-minute noise measurement was conducted, beginning at 6:05 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included occasional birds.
- Short-Term Location 15 (ST-15) was on Second Street west of B Street. The measurement location was approximately 20 feet south of the Second Street eastbound centerline. A 15-minute noise measurement was conducted, beginning at 4:24 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic.
- Short-Term Location 16 (ST-16) was on Fourth Street east of Grand Avenue. The measurement location was approximately 30 feet north of the Fourth Street westbound centerline. A 15-minute noise measurement was conducted, beginning at 6:36 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic and distant highway traffic. Secondary noise sources included occasional birds.
- Short-Term Location 17 (ST-17) was on D Street north of Ross Street. The measurement location was approximately 30 feet west of the D Street southbound centerline. A 15-minute noise measurement was conducted, beginning at 3:56 p.m. on Tuesday, May 7, 2019. The noise environment of this site is

characterized primarily by local traffic and distant highway traffic. Secondary noise sources included occasional birds.

- Short-Term Location 18 (ST-18) was near the baseball diamond at Albert Park. The measurement location was approximately 65 feet south of the Anderson Drive eastbound centerline. A 15-minute noise measurement was conducted, beginning at 5:37 p.m. on Tuesday, May 7, 2019. The noise environment of this site is characterized primarily by local traffic and distant highway traffic and children playing baseball. Secondary noise sources included occasional birds.
- Short-Term Location 19 (ST-19) was in front of 314 Du Bois Street. The measurement location was approximately 20 feet east of the Du Bois Street northbound centerline. A 15-minute noise measurement was conducted, beginning at 8:26 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic. Secondary noise sources included distant yard maintenance and occasional birds.
- Short-Term Location 20 (ST-20) was on Kerner Boulevard south of Bahia Way. The measurement location was approximately 20 feet east of the Kerner Boulevard northbound centerline. A 15-minute noise measurement was conducted, beginning at 7:51 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic and distant highway traffic. Secondary noise sources included typical residential neighborhood sounds such as children.
- Short-Term Location 21 (ST-21) was in front of 233 Bellam Boulevard. The measurement location was approximately 25 feet north of the Bellam Boulevard westbound centerline. A 15-minute noise measurement was conducted, beginning at 7:27 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic and distant highway traffic.
- Short-Term Location 22 (ST-22) was on Shoreline Parkway east of Kerner Boulevard. The measurement location was approximately 20 feet south of the Shoreline Parkway eastbound centerline. A 15-minute noise measurement was conducted, beginning at 7:00 a.m. on Thursday, May 9, 2019. The noise environment of this site is characterized primarily by local traffic and distant highway traffic.

Ambient Noise Results, Long-Term Monitoring

During the ambient noise survey, the L_{dn} noise levels at monitoring locations ranged from 47 to 74 dBA L_{dn}. The long-term noise measurement results are summarized in Table 4.13-4. A summary of the daily trend of long-term noise measurement results are shown in Appendix H, Noise Data, of this Draft EIR.

TABLE 4.13-4 LONG-TERM NOISE MEASUREMENT SUMMARY (DBA)

Monitoring Location	Description	L_{dn}	Lowest L_{eq}, 1-Hour	Highest L_{eq}, 1-Hour
LT-1	Northgate Drive	60	35.1	61.7
LT-2	SMART Rail Crossing	60	37.5	60.5
LT-3	Elizabeth Way	59	31.1	62.3
LT-4	Mountain View Avenue	64	44.7	68.9
LT-5	Point San Pedro Road	58	40.0	61.6
LT-6	Fourth Street	71	56.8	68.5
LT-7	Third Street	74	54.8	75.1
LT-8	Bayview Street	62	41.8	72.2
LT-9	Southern Heights Boulevard	47	29.8	50.0
LT-10	Catalina Boulevard	58	35.0	59.2

Source: PlaceWorks, 2019.

Short-Term Noise Monitoring Results

The short-term noise measurement results are summarized in Table 4.13-5.

TABLE 4.13-5 SHORT-TERM NOISE MEASUREMENT SUMMARY (DBA)

		15-Minute Noise Level, dBA		
Monitoring Location	Description	L_{min}	L_{eq}	L_{max}
ST-1	Lucas Valley Road - 3:28 pm, 5/9/2019	42.4	71.4	80.8
ST-2	Lucas Valley Road - 3:02 pm, 5/9/2019	49.9	72.1	82.6
ST-3	Smith Ranch Road - 3:53 pm, 5/9/2019	45.8	62.1	71.7
ST-4	Las Gallinas Avenue - 4:39 pm, 5/9/2019	44.9	62.4	74.9
ST-5	Los Gamos Road - 4:17 pm, 5/9/2019	50.5	53.9	61.0
ST-6	N. San Pedro Road - 9:44 am, 5/9/2019	42.4	65.4	77.5
ST-7	Manuel T. Freitas Parkway - 5:00 pm, 5/9/2019	43.1	67.9	77.6
ST-8	Montecillo Road - 5:24 pm, 5/9/2019	37.3	55.4	68.3
ST-9	N. San Pedro Road - 9:23 am, 5/9/2019	48.0	66.9	78.6
ST-10	Fifth Avenue - 3:00 pm, 5/7/2019	42.2	62.1	72.0
ST-11	Grand Avenue - 8:56 am, 5/9/2019	50.9	64.6	76.6
ST-12	Third Street - 3:30 pm, 5/7/2019	48.2	70.8	81.1
ST-13	Fourth Street - 5:01 pm, 5/7/2019	54.2	69.9	87.7
ST-14	Lincoln Avenue - 6:05 pm, 5/7/2019	51.9	62.9	74.2
ST-15	Second Street - 4:24 pm, 5/7/2019	51.4	69.0	82.9
ST-16	Fourth Street - 6:36 pm, 5/7/2019	53.0	63.3	78.0
ST-17	D Street - 3:56 pm, 5/7/2019	47.7	63.6	74.7
ST-18	Albert Park - 5:37 pm, 5/7/2019	46.1	58.1	72.3
ST-19	Du Bois Street - 8:26 am, 5/9/2019	42.7	57.4	78.5
ST-20	Kerner Boulevard - 7:51 am, 5/9/2019	49.0	62.2	79.2
ST-21	Bellam Boulevard - 7:27 AM, 5/9/2019	56.1	63.6	75.7
ST-22	Shoreline Parkway - 7:00 AM, 5/9/2019	50.2	63.9	77.7

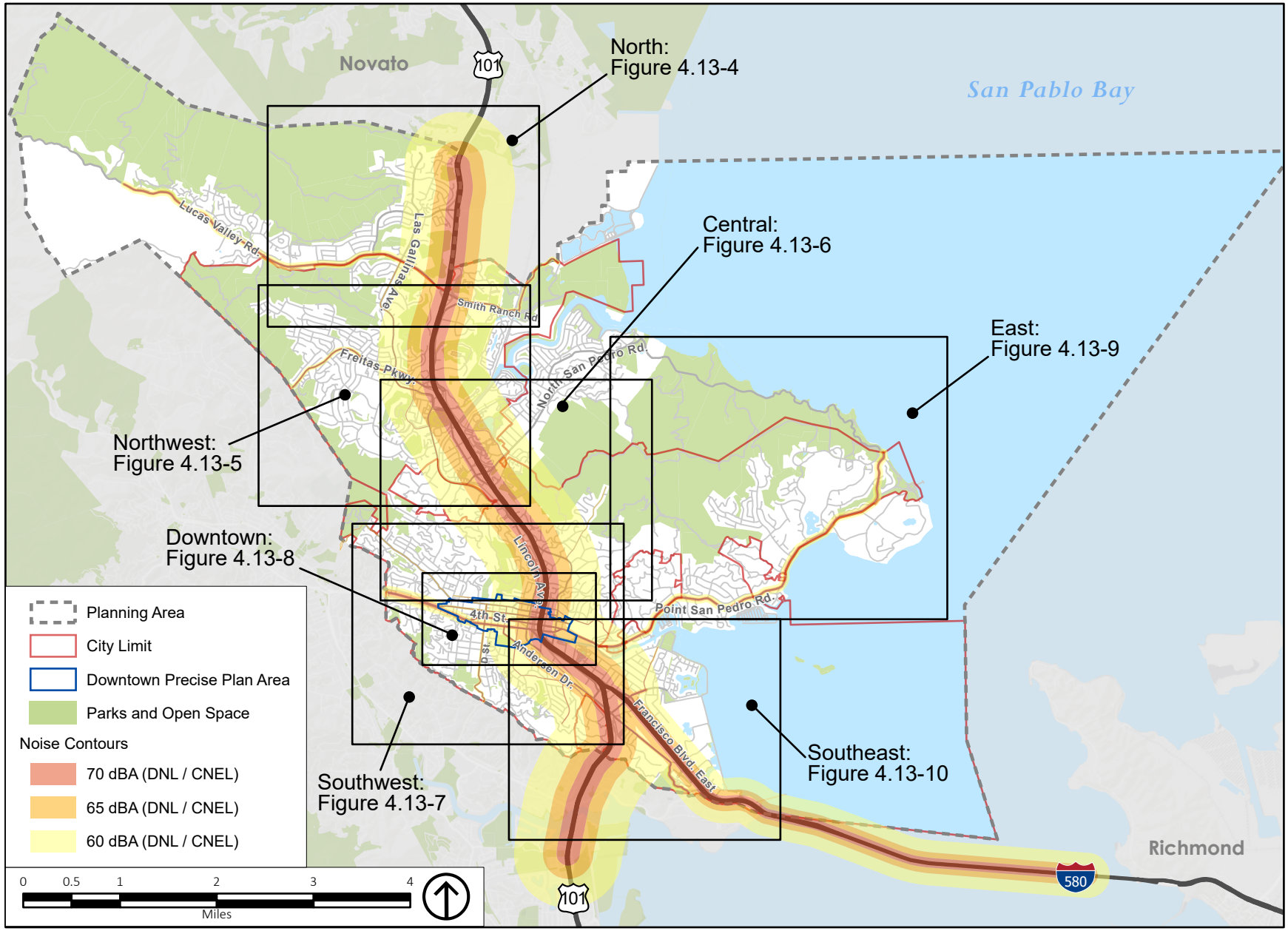
Source: PlaceWorks,2019.

Existing Traffic Noise

Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction Model and traffic data provided by Fehr & Peers Transportation Consultants (see Appendix H, Noise Data, of this Draft EIR). The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic volumes, vehicle speeds, car/truck mix, number of lanes, and road width. Existing (2019) roadway and highway noise contours of 60, 65, and 70 dBA L_{dn} noise contours are shown on Figures 4.13-2 through 4.13-9.

Aircraft Noise

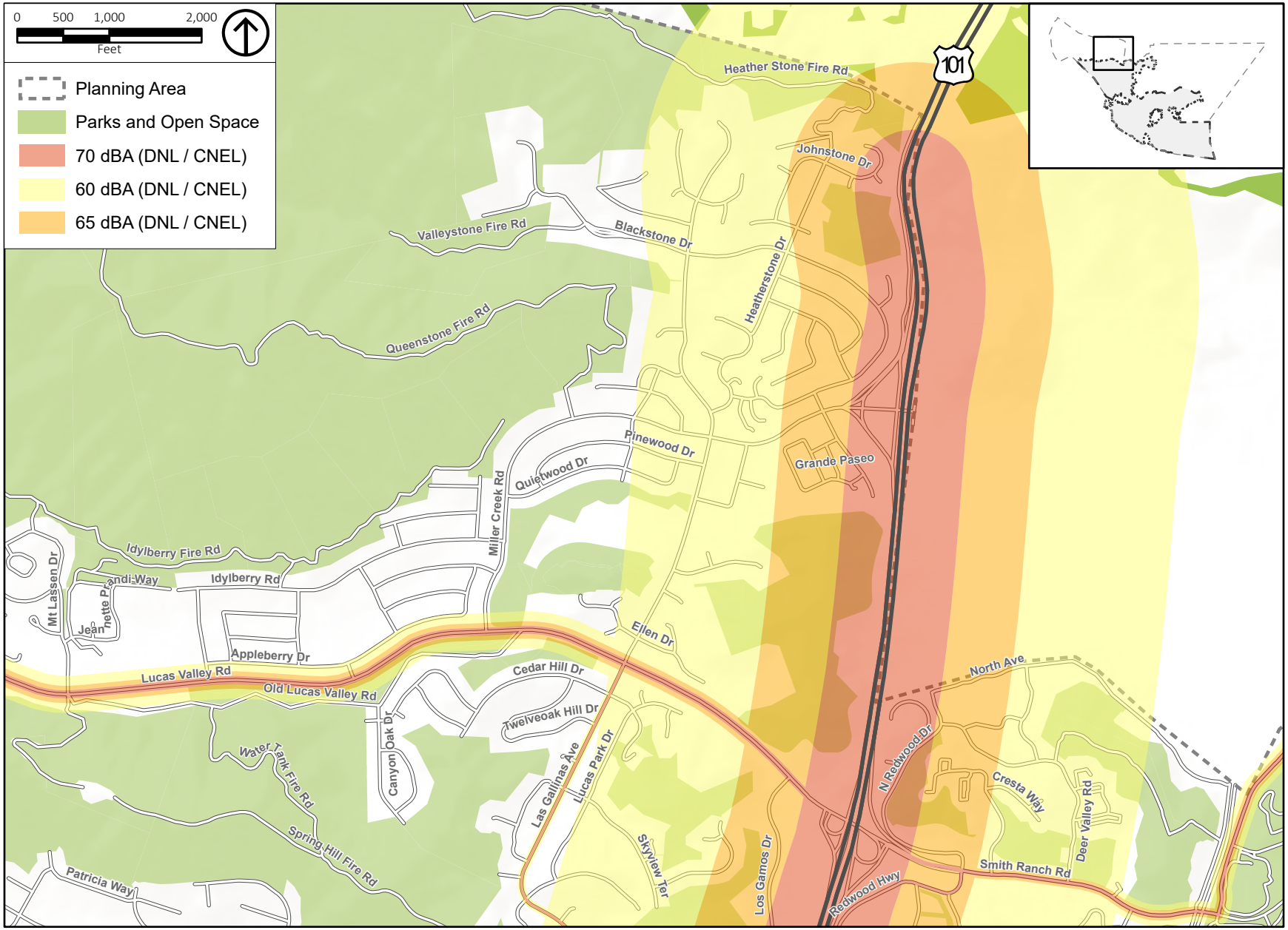
Aircraft noise in the EIR Study Area is characterized as rare but can be intrusive to nearby sensitive receptors. There is one airport in the EIR Study Area, the San Rafael Airport, which is in the northeastern portion of the EIR Study Area. The nearest heliport is the San Rafael Private Heliport located on Kerner Boulevard in San Rafael. The San Rafael Airport is a private airstrip with minimal air traffic. As shown on Figure 4.13-10, airport noise contours from 2003 do not extend much beyond the runway, and aircraft noise does not substantially affect nearby sensitive receptors. Figure 4.13-11 shows the San Rafael Private Heliport noise contours. The heliport is in a commercial area of the EIR Study Area.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

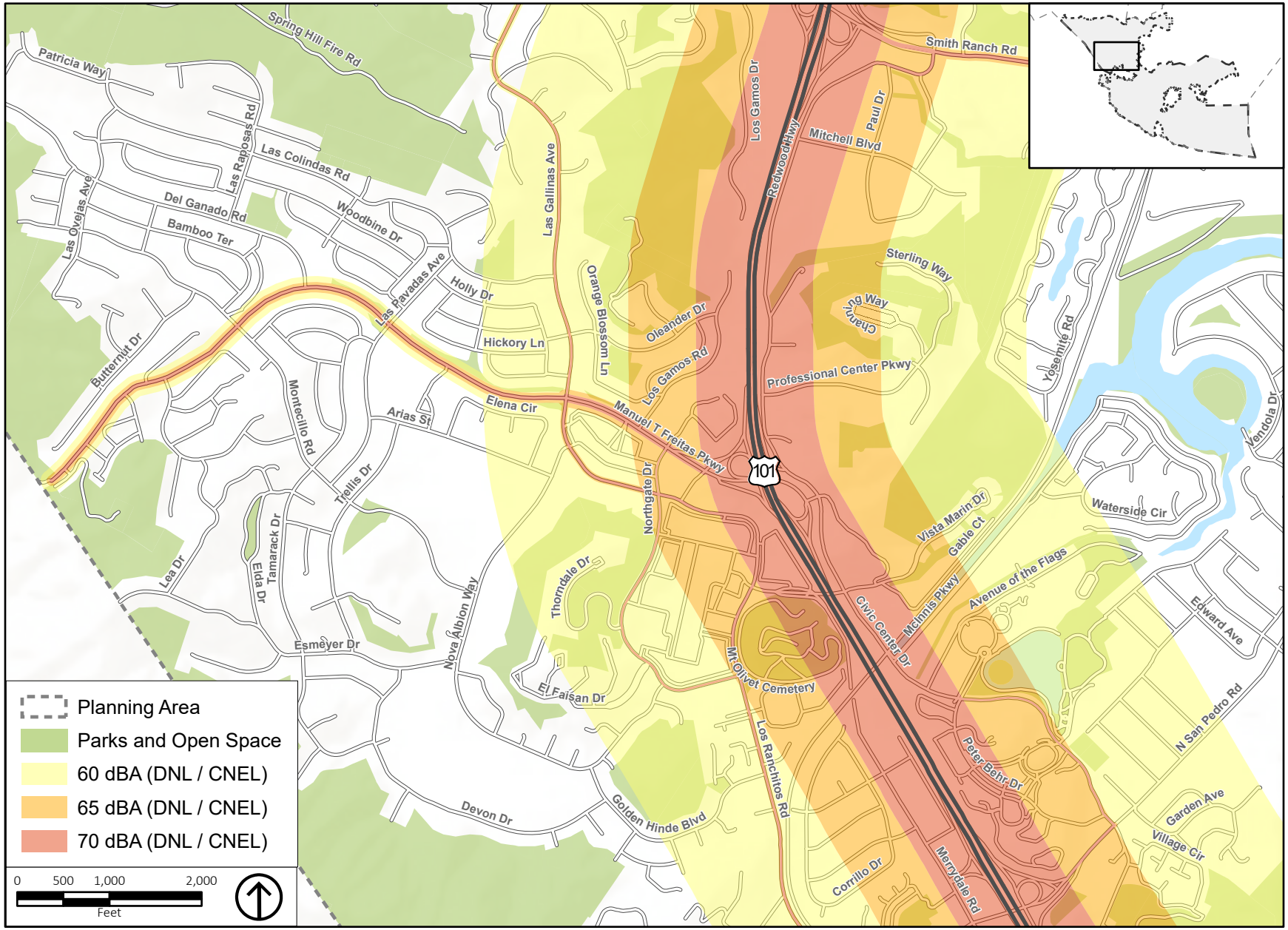
Figure 4.13-2

Existing Traffic Noise Contours-Planning Area



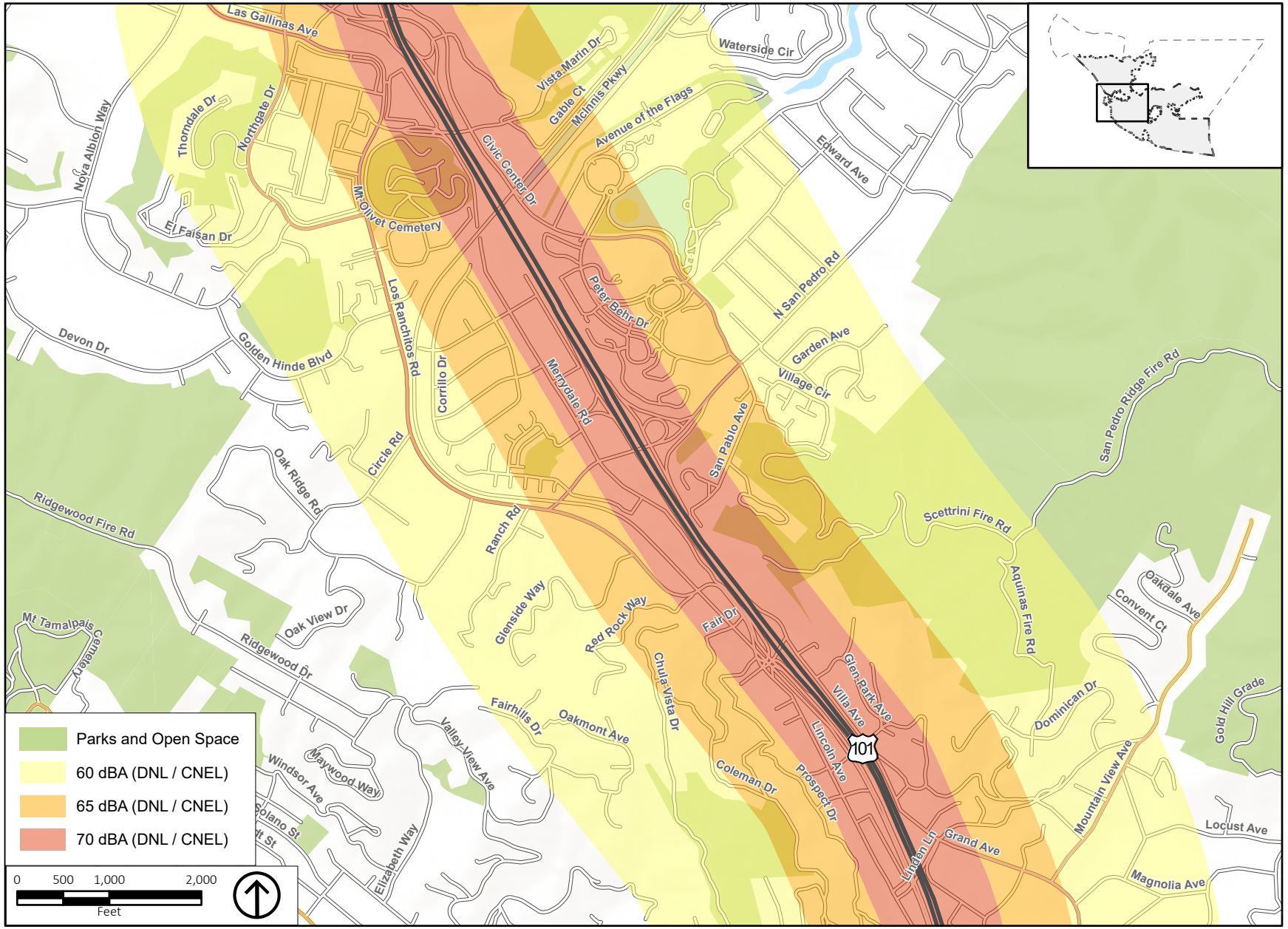
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-3
Existing Traffic Noise Contours-North



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

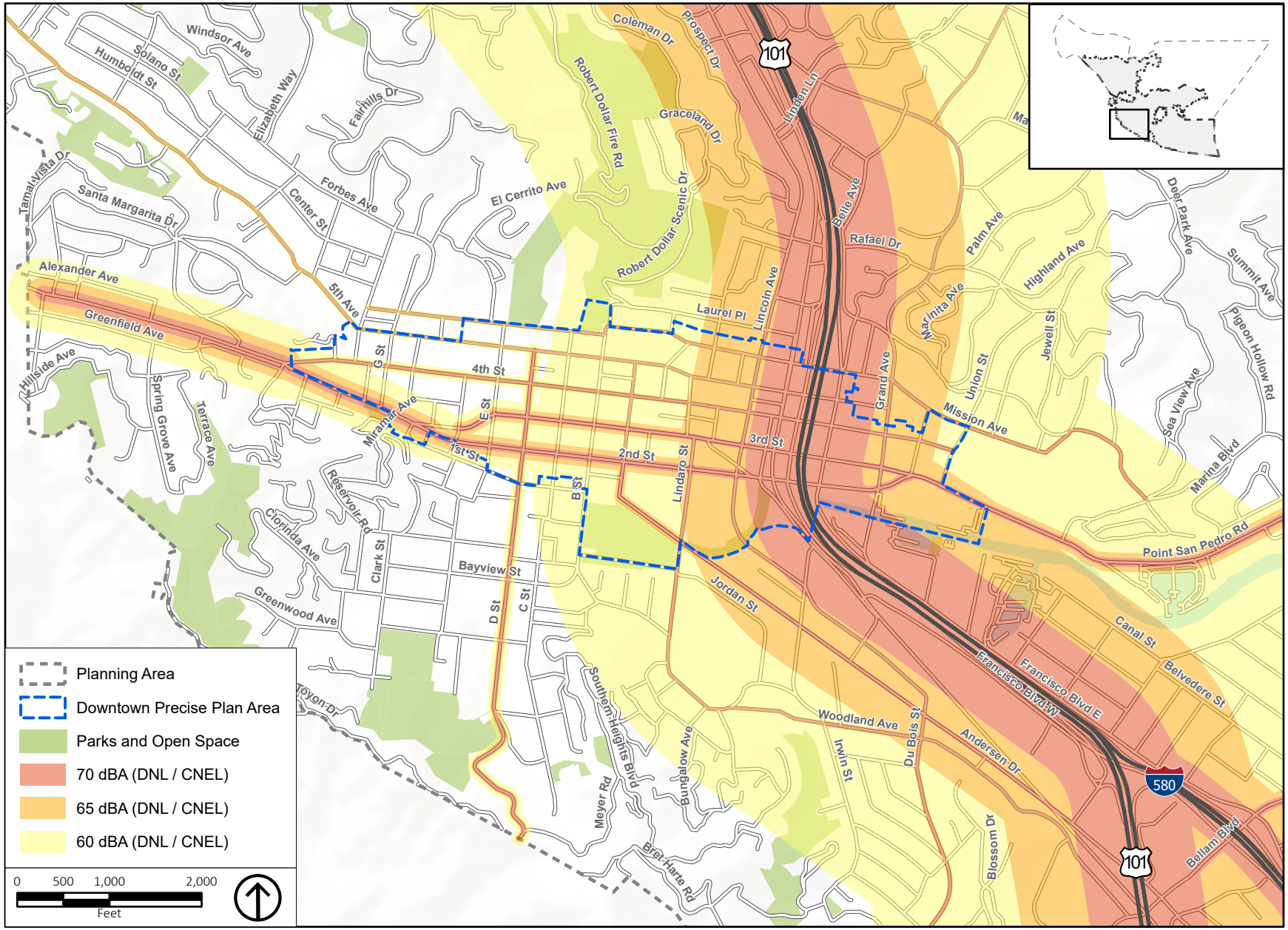
Figure 4.13-4
Existing Traffic Noise Contours-Northwest



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-5

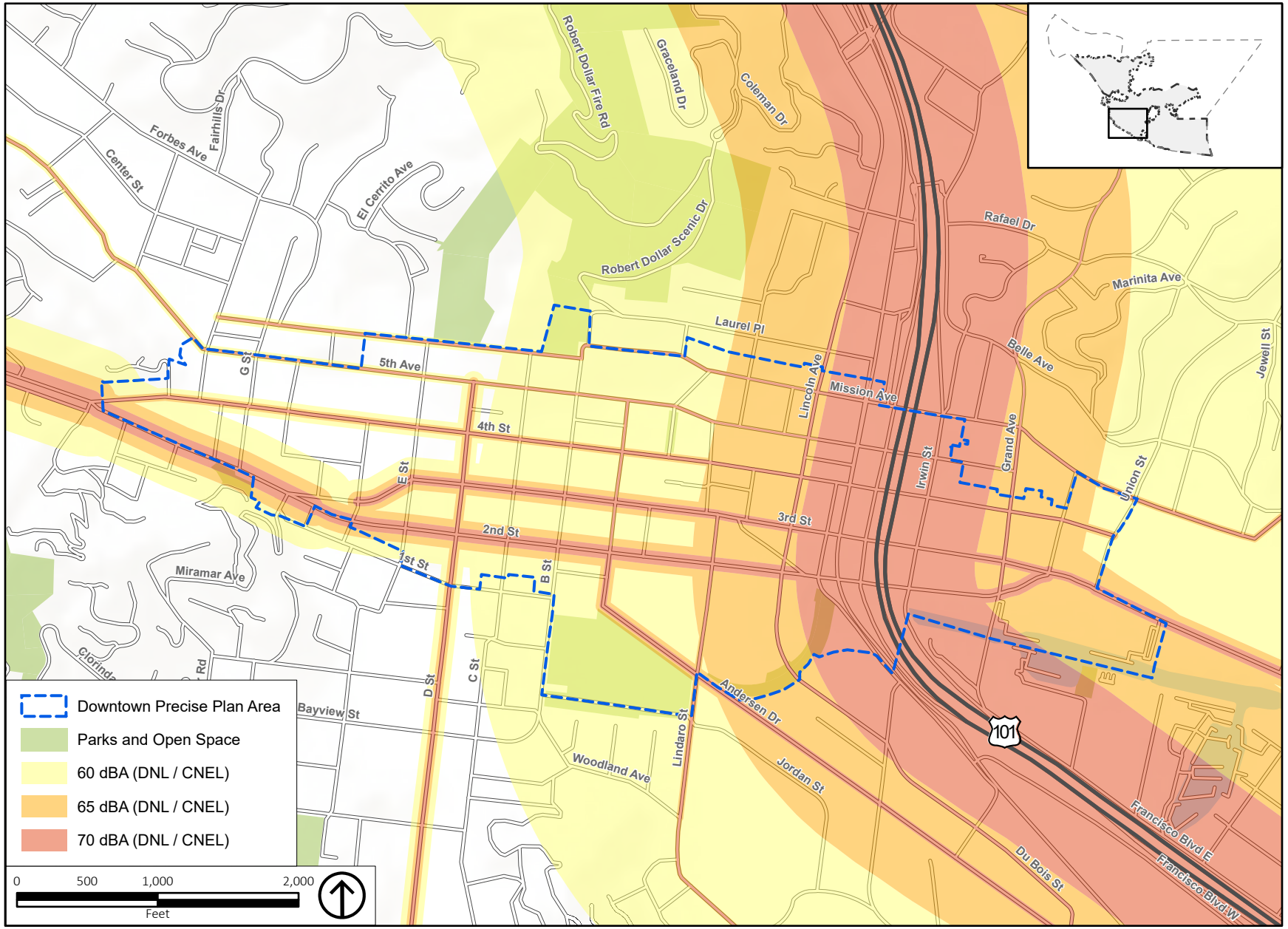
Existing Traffic Noise Contours-Central



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

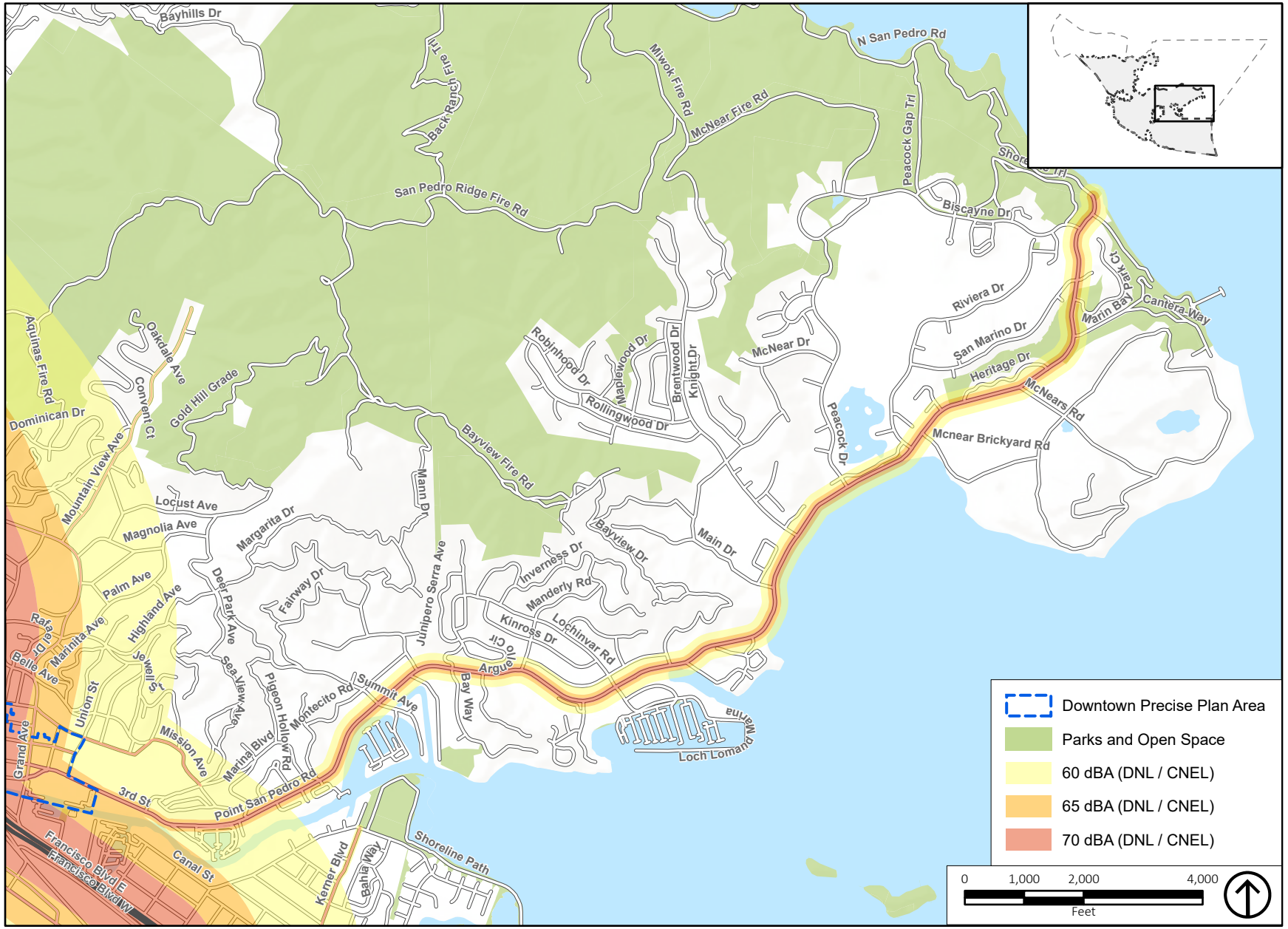
Figure 4.13-6

Existing Traffic Noise Contours-Southwest



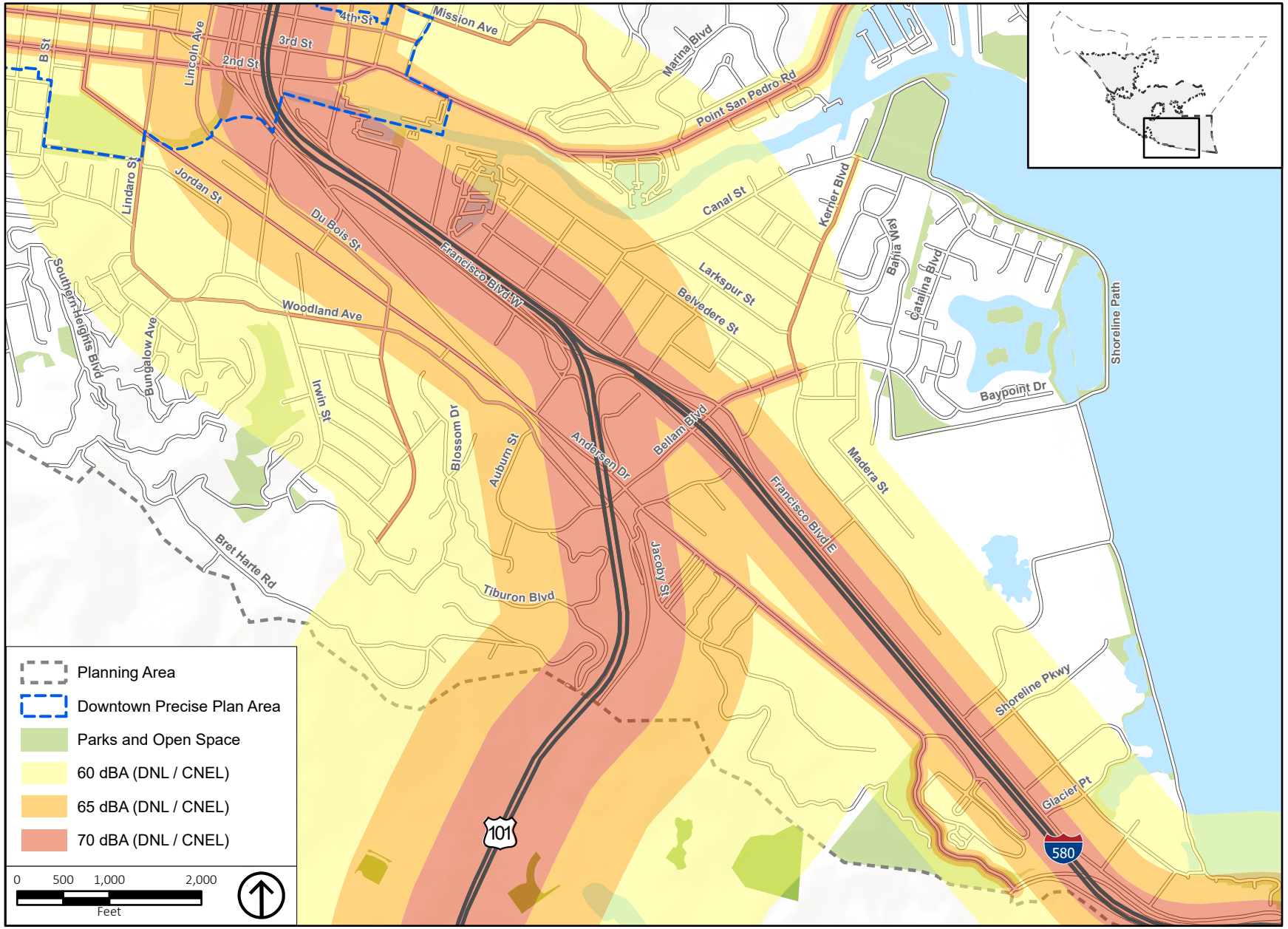
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-7
Existing Traffic Noise Contours -Downtown



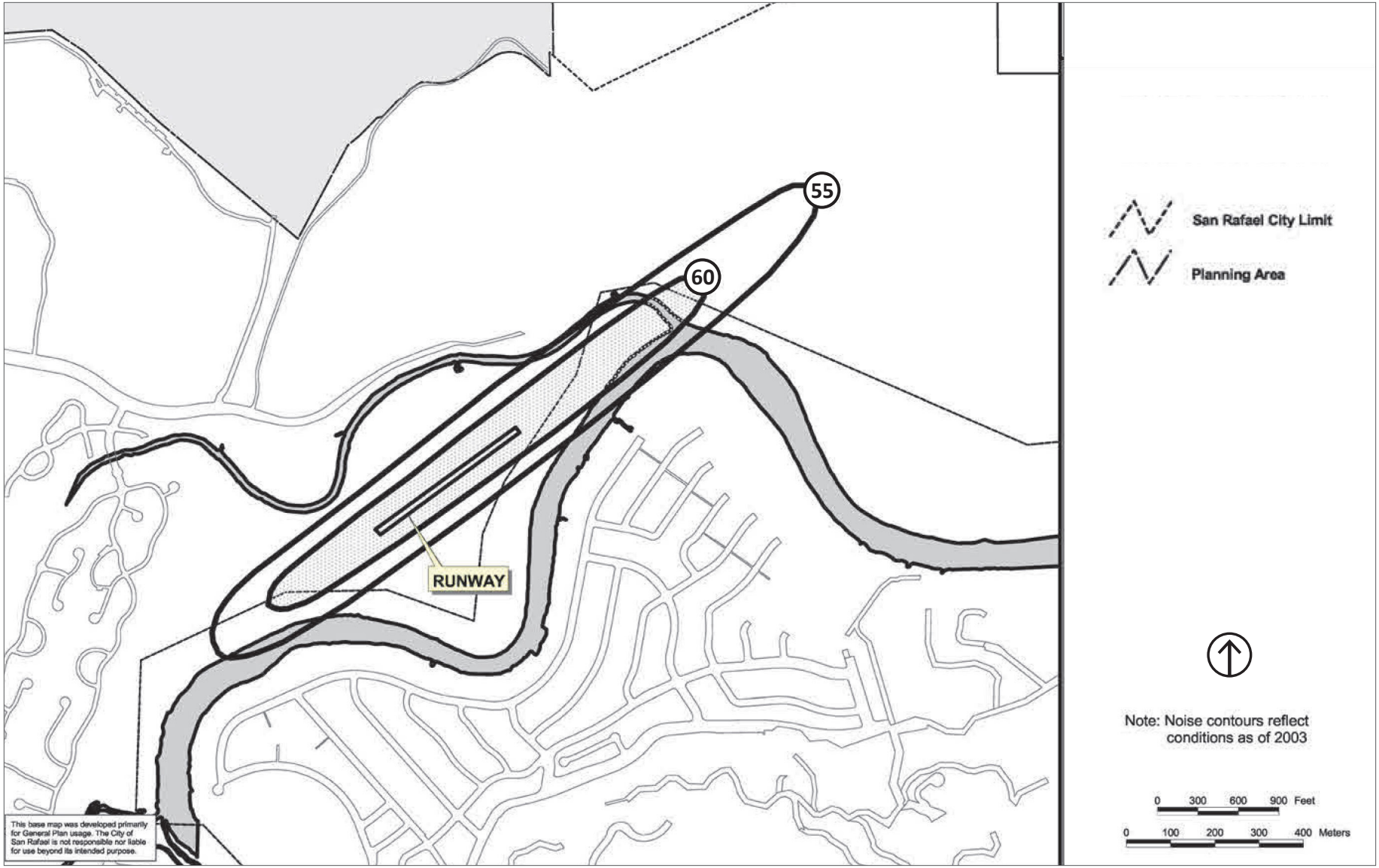
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-8
Existing Traffic Noise Contours-East



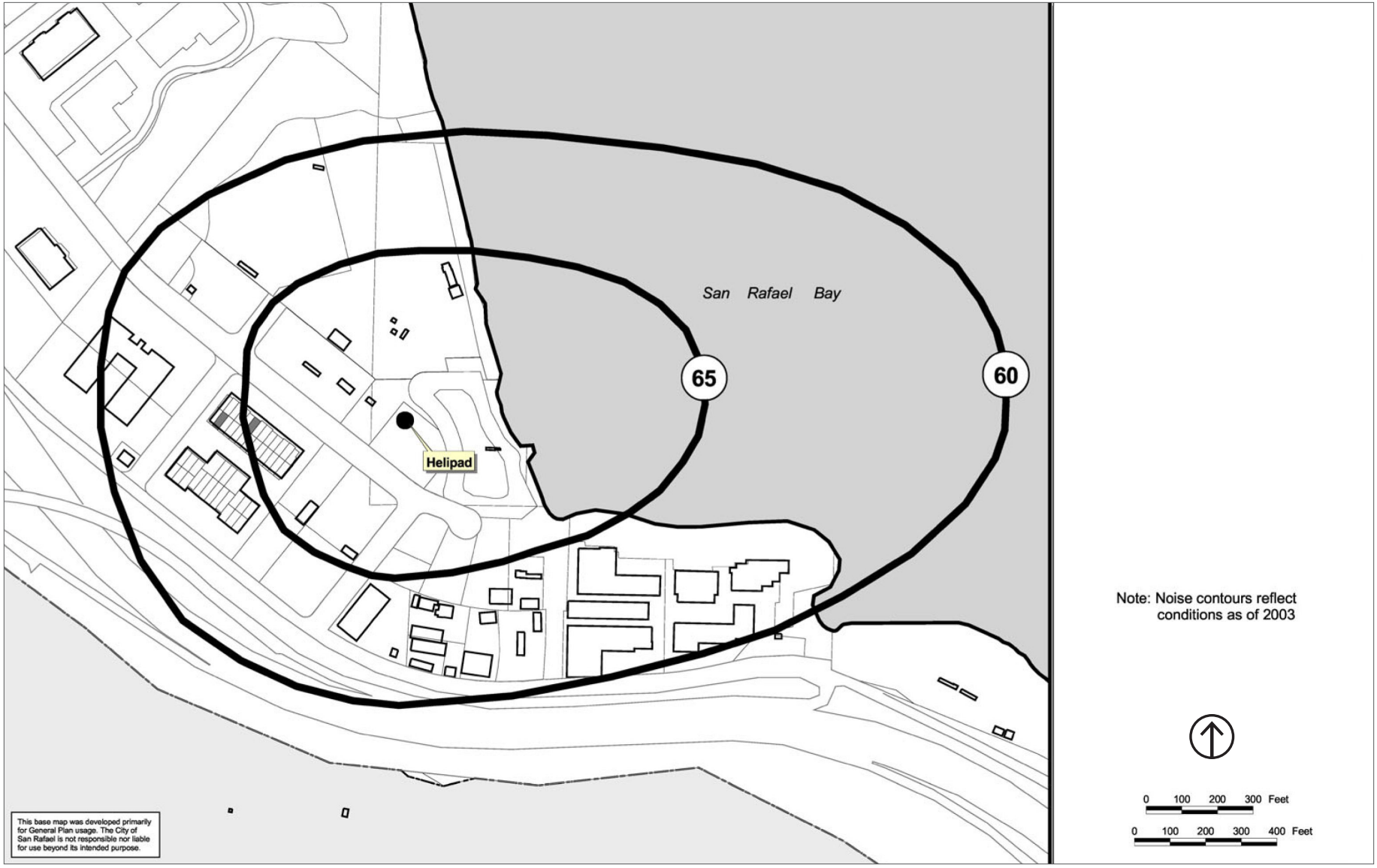
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-9
Existing Traffic Noise Contours-Southeast



Source: City of San Rafael General Plan 2020, Exhibit 32.

Figure 4.13-10
San Rafael Airport Noise Contours



Source: City of San Rafael General Plan 2020, Exhibit 33.

Figure 4.13-11
Heliport Noise Contours

Railroad Noise

The SMART rail is the only source of rail noise in the EIR Study Area. There is no freight service along the rail line. Due to the establishment of a Quiet Zone in Marin County, noise from the SMART rail is not substantial much beyond the rail right-of-way. Train operators are not required to sound their horn at grade crossings due to the Quiet Zone. However, the train operator may still sound their horn in the case of emergencies at their discretion. Ambient noise monitoring at the long-term monitoring location LT-2 indicates that the 60 L_{dn} noise contour from SMART rail activity does not extend beyond 50 feet from the railroad centerline. Although there were a few locations near the SMART tracks with ambient noise levels exceeding 60 L_{dn}, the higher ambient noise is associated with proximity to local roadways and US-101 rather than SMART rail activity alone.

Stationary Source Noise

Stationary sources of noises may occur on all types of land uses. Residential uses generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses generate noise from heating, ventilation, air conditioning (HVAC) systems, loading docks, and other sources. Industrial uses may generate HVAC systems, loading docks, and possibly machinery. Noise generated by residential or commercial uses are generally short and intermittent. Industrial uses may generate noise on a more continual basis due to the nature of the activities. Nightclubs, outdoor dining areas, gas stations, car washes, fire stations, drive-throughs, swimming pool and hot tub pumps, school playgrounds, athletic and music events, and public parks are other common noise sources.

Emergency backup generators are also a common outdoor noise source. As discussed in Section 4.13.1.4, Regulatory Framework, effective November 2019, the City has approved an ordinance allowing residents and businesses to use generators during power failures, even when the resulting noise levels exceed adopted limits. This is in response to recent public safety power shutoffs issued by Pacific Gas & Electric that were instituted for wildfire prevention in 2019 and are anticipated to continue to be used as a wildfire prevention mechanism in the future.

The San Rafael Rock Quarry and McNear Brickworks is a major stationary source of noise. Located in unincorporated Marin County adjacent to the city at 1000 Point San Pedro Road, noise sources from the quarry include on-site machinery, truck movements, periodic rock blasting, and on-road haul trucks traveling to and from the site. General Plan 2040 Program NH-5.6A seeks to minimize the effects of quarry noise through cooperative efforts with the County of Marin.

Existing Vibration

Existing sources of operational vibration in the EIR Study Area include vehicle traffic on roadways and the SMART rail. Caltrans has studied the effects of propagation of vehicle vibration on sensitive land uses and notes that “heavy trucks, and quite frequently buses, generate the highest earthborn vibrations of normal traffic.” Caltrans further notes that the highest traffic-generated vibrations are along freeways and state routes. Their study finds that “vibrations measured on freeway shoulders (five meters from the centerline of the nearest lane) have never exceeded 0.08 in/sec, with the worst combinations of heavy trucks and poor roadway conditions (while such trucks were moving at freeway speeds). This level coincides with the

maximum recommended safe level for ruins and ancient monuments (and historic buildings)."[3] The 2014 Draft EIR for SMART found that residences located more than 40 feet from the railroad centerline (outside the rail right-of-way) would not experience perceptible vibration.[4] Construction vibration levels have the potential to be significant when equipment such as impact and vibratory pile drivers, rock blasting, and vibratory rollers is used during project construction.

4.13.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would result in significant noise impacts if it would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.
2. Result in generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
4. Result in significant cumulative noise-related impacts.

4.13.2.1 CITY OF SAN RAFAEL NOISE LIMITS

Construction Noise

As discussed in Section 4.13.1.4, Regulatory Framework, under the subheading "San Rafael Municipal Code" the SRMC Section 8.13.050 establishes the construction noise thresholds that limits the noise level from construction activity to 90 dBA L_{max} outside the property line.[5] PlaceWorks interprets this to be at the property line of the nearest noise-sensitive receptor.

Stationary Noise

As with construction noise, the SRMC sets operational noise limits from stationary sources. The SRMC Section 8.13.040 operational noise limits are shown in Section 4.13.1.4, Regulatory Framework, under the subheading "San Rafael Municipal Code" in in Table 4.13-3. These limits are used to determine impact significance for operational noise from stationary noise sources.

[3] Caltrans, 2013, *Transportation and Construction Vibration Guidance Manual*.

[4] Sonoma-Marin Area Rail Transit, 2014, *Downtown San Rafael to Larkspur Extension Environmental Assessment*.

[5] Personal correspondence between Josh Carman, PlaceWorks, and Raffi Boloyan, Planning Manager, City of San Rafael, June 15, 2020, confirmed L_{max} is the appropriate noise level metric.

Mobile Noise

A project will normally have a significant effect on the environment related to mobile noise sources such as traffic if it will substantially increase the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually undetectable. A change of 5 dBA is readily audible to most people in an exterior environment. Based on this, the following thresholds of significance are used to assess mobile noise impacts from traffic at sensitive receptor locations:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA L_{dn} and higher
- Greater than 3 dBA increase for ambient noise environments of 60 to 64 dBA L_{dn}
- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA L_{dn}

4.13.2.2 FEDERAL TRANSIT ADMINISTRATION VIBRATION LIMITS

Vibration

As described in Section 4.13.1.3, Vibration Fundamentals, there are two types of vibration related impacts; vibration damage to buildings and vibration annoyance to people. The City does not have specific limits or thresholds for vibration.

Vibration Damage from Construction

The Federal Transit Administration (FTA) provides criteria for acceptable levels of groundborne vibration for various types of buildings identified as Category I, II, and III buildings based on the type of materials they are constructed from. These criteria are used for this analysis and shown in Table 4.13-6. A Category III, non-engineered timber and masonry buildings, threshold of 0.20 in/sec PPV would apply to typical residential structures.

TABLE 4.13-6 GROUNDBORNE VIBRATION CRITERIA: ARCHITECTURAL DAMAGE

Building Category	PPV (in/sec)
I. Reinforced concrete, steel, or timber (no plaster)	0.50
II. Engineered concrete and masonry (no plaster)	0.30
III. Nonengineered timber and masonry buildings	0.20
IV. Buildings extremely susceptible to vibration damage	0.12

Note: PPV = peak particle velocity
Source: Federal Transit Administration (FTA) 2018. *Transit Noise and Vibration Impact Assessment Manual*.

Vibration Annoyance from Operation

For vibration annoyance from operational sources, the FTA recommends the following criteria for frequent events: 65 VdB for highly sensitive uses with vibration-sensitive equipment (e.g., microscopes in hospitals and research facilities) and 72 VdB for residences.

4.13.3 IMPACT DISCUSSION

NOISE-1 **Implementation of the proposed project could result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the EIR Study Area in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.**

General Plan 2040: Construction Noise

Potential future development could result in two types of temporary noise impacts during construction.

- The transport of workers and movement of materials to and from the site could incrementally increase noise levels along local access roads.
- Noise would be generated from activities related to demolition, site preparation, grading, and/or physical construction.

Construction is performed in phases, each of which has its own mix of equipment, and, consequently, its own noise characteristics. Table 4.13-7 lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet between the equipment and noise receptor.

TABLE 4.13-7 CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Typical Max Noise Level (dBA Lmax) [a]	Construction Equipment	Typical Max Noise Level (dBA Lmax) [a]
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Notes:
[a] Measured 50 feet from the source.
Source: Federal Transit Administration (FTA) 2018. *Transit Noise and Vibration Impact Assessment Manual*.

As shown, construction equipment generates high levels of noise, with maximums ranging from 71 dBA to 101 dBA. Construction of individual developments associated would temporarily increase the ambient noise environment and would have the potential to affect noise-sensitive land uses in the vicinity of an individual project. According to SRMC Section 8.13.050, construction activities are exempt from the noise standards between 7:00 a.m. and 6:00 p.m. Monday through Friday, 9:00 a.m. to 6:00 p.m. on Saturdays, and no construction activities are to take place on Sundays and holidays unless approved by the City. Construction activities are exempt provided noise levels do not exceed 90 dBA L_{max}.

Implementation of the proposed General Plan 2040 anticipates an increase in development intensity to accommodate new population and employment growth. Construction noise levels are highly variable and dependent upon the specific locations, site plans, and construction details of individual projects. Significant noise impacts may occur from operation of heavy earth-moving equipment and truck haul operations associated with construction of individual development projects, particularly if construction techniques such as impact or vibratory pile driving are proposed. The time of day that construction activity is conducted would also determine the significance of each project, particularly during the more sensitive nighttime hours. However, construction would be localized and would occur intermittently for varying periods of time.

The proposed Noise (N) Element contains a goal, policies, and programs that require local planning and development decisions to consider noise-related impacts, including during construction. The following General Plan 2040 goal, policies, and program would minimize potential adverse noise-related impacts:

Goal N-1: Acceptable Noise Levels. Protect the public from excessive, unnecessary, and unreasonable noise.

- Policy N-1.9: Maintaining Peace and Quiet. Minimize noise conflicts resulting from everyday activities such as construction, sirens, yard equipment, business operations, night-time sporting events, and domestic activities.
  - Program N-1.9B: Construction Noise. Use the environmental review process to identify measures to reduce the exposure of neighboring properties to excessive noise levels from construction activity.

In most cases, construction of individual developments associated with implementation of the proposed General Plan 2040 would temporarily increase the ambient noise environment in the vicinity of each individual project, potentially affecting existing and future nearby sensitive uses. The implementation of construction best management practices throughout the entire active construction period would also help to ensure that construction noise is minimized to the extent feasible. Some common construction best management practices include requiring projects to:

- Utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) wherever feasible on equipment and trucks used for project construction shall.
- Require the contractor to use impact tools (e.g., jack hammers and hoe rams) that are hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.

- Locate stationary equipment such as generators and air compressors as far as feasible from nearby noise-sensitive uses.
- Locate stockpiling as far as feasible from nearby noise-sensitive receptors.
- Limit construction traffic shall be limited—to the extent feasible—to haul routes approved in advance of issuing building permits by the City.
- Require the telephone numbers of the authorized representatives for the City and the contractor that are assigned to respond in the event of a noise or vibration complaint to be displayed on construction signs posted at the construction site. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City.
- Post signs at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes.
- Require the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only, to the extent feasible. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.
- Erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors), as necessary and feasible, to maintain construction noise levels at or below the performance standard of 90 dBA L_{max} and/or when the anticipated construction duration is greater than is typical (two years or greater). Barriers shall be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier.

While the City has established noise limits during the construction phase of potential future projects and General Plan Program N-1.9B, Construction Noise, requires the City to use the environmental review process to identify measures to reduce the exposure of neighboring properties to excessive noise levels from construction activity, these do not address the use routine construction best management practices that would further ensure that noise impacts from construction are reduced to acceptable levels. Therefore, construction noise impacts associated with implementation of the proposed General Plan 2040 are considered *potentially significant.*

Impact NOISE-1: Construction activities associated with potential future development could expose sensitive receptors in close proximity to a construction site to noise that exceed the City's noise limits established in San Rafael Municipal Code Chapter 8.13, Noise.

Mitigation Measure NOISE-1: To ensure receptors that are sensitive to construction noise are not exposed to unacceptable construction noise levels as defined in San Rafael Municipal Code Chapter 8.13, Noise, for discretionary development projects that are subject to CEQA the City shall amend Program N-1.9B (Construction Noise) as follows:

- Modified Program: Construction Best Management Practices. The City shall establish a list of construction best management practices to be implemented during the construction phase and incorporated into San Rafael Municipal Code Chapter 8.13, Noise. The City of San Rafael Building Division shall verify that construction best management practices, as appropriate, are on the demolition, grading, and construction plans prior to issuance of demolition, grading and/or building permits.

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Construction Noise

Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would result in the construction of future projects that could expose sensitive receptors to noise that exceed the City's noise limit. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce noise from construction; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, impacts would be *less than significant*.

Significance with Mitigation: Less than significant.

General Plan 2040: Operational Noise

Traffic Noise

Future development from implementation of the proposed General Plan 2040 would cause increases in traffic along local roadways. Traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction Model. Traffic volumes for existing and 2040 conditions were obtained from Fehr & Peers (see Appendix H, Noise Data, of this Draft EIR). The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic volumes, vehicle speeds, car/truck mix, number of lanes, and road width.

Table 4.13-8 presents the noise level increases on roadways over existing conditions at 50 feet from the centerline of the nearest travel lane. Figures 4.13-12 through 4.13-19 show the 60, 65, and 70 dBA L_{dn} noise contours from roadways and highways.

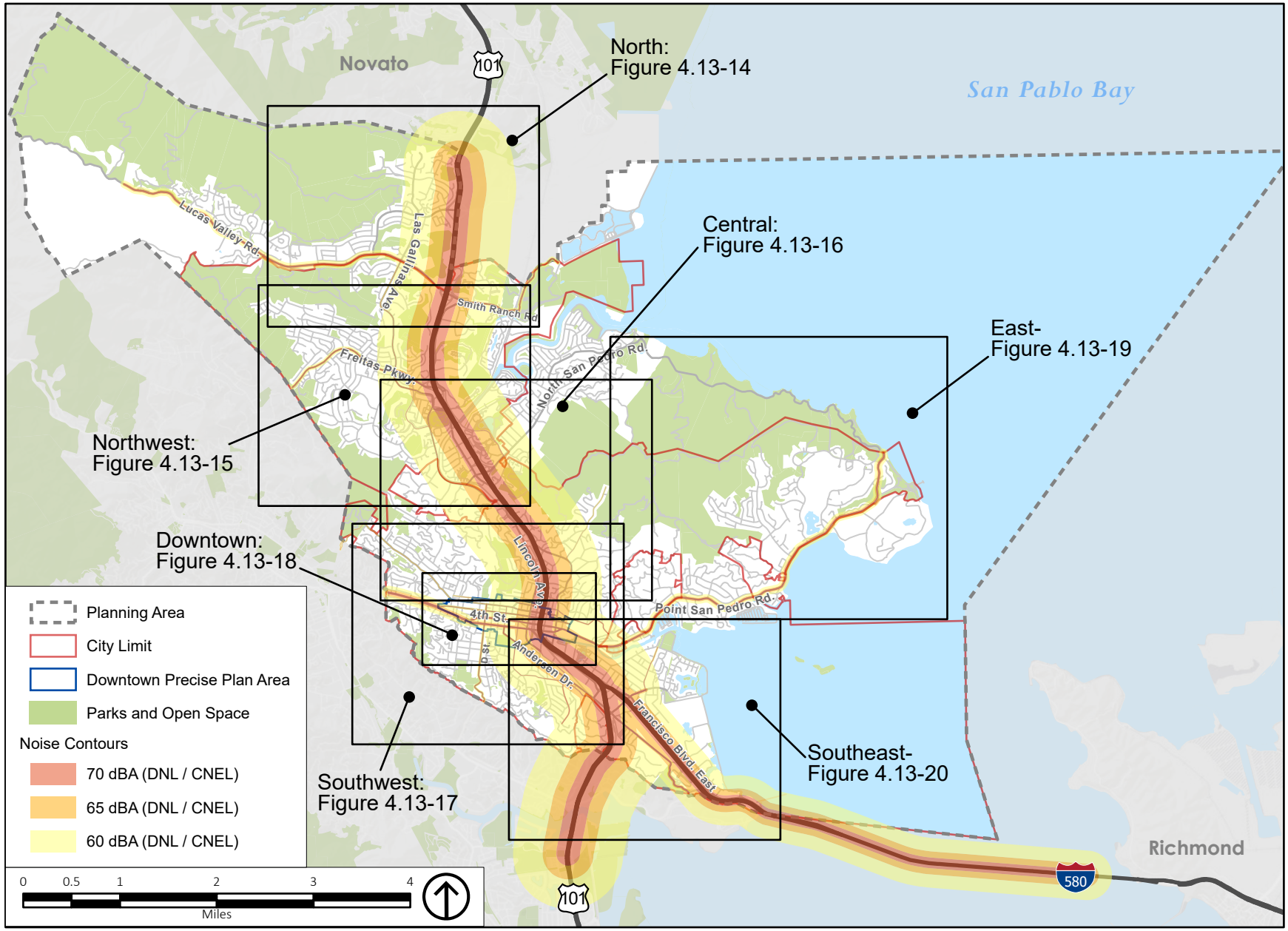
As shown in Table 4.13-8, traffic noise increases along roadways are generally in the range of 0 to 1.5 dBA CNEL with implementation of the proposed 2040 General Plan, and therefore, traffic noise increases would be *less than significant*.

Increases over 1.5 CNEL are indicated in a few locations, but these areas are subject to a higher threshold of significance (see Section 4.13.2.1, City of San Rafael Noise Limits, under the subheading "Traffic Noise") based on existing ambient noise levels, and thus would result in a *less than significant impact*.

TABLE 4.13-8 TRAFFIC NOISE INCREASES IN THE EIR STUDY AREA

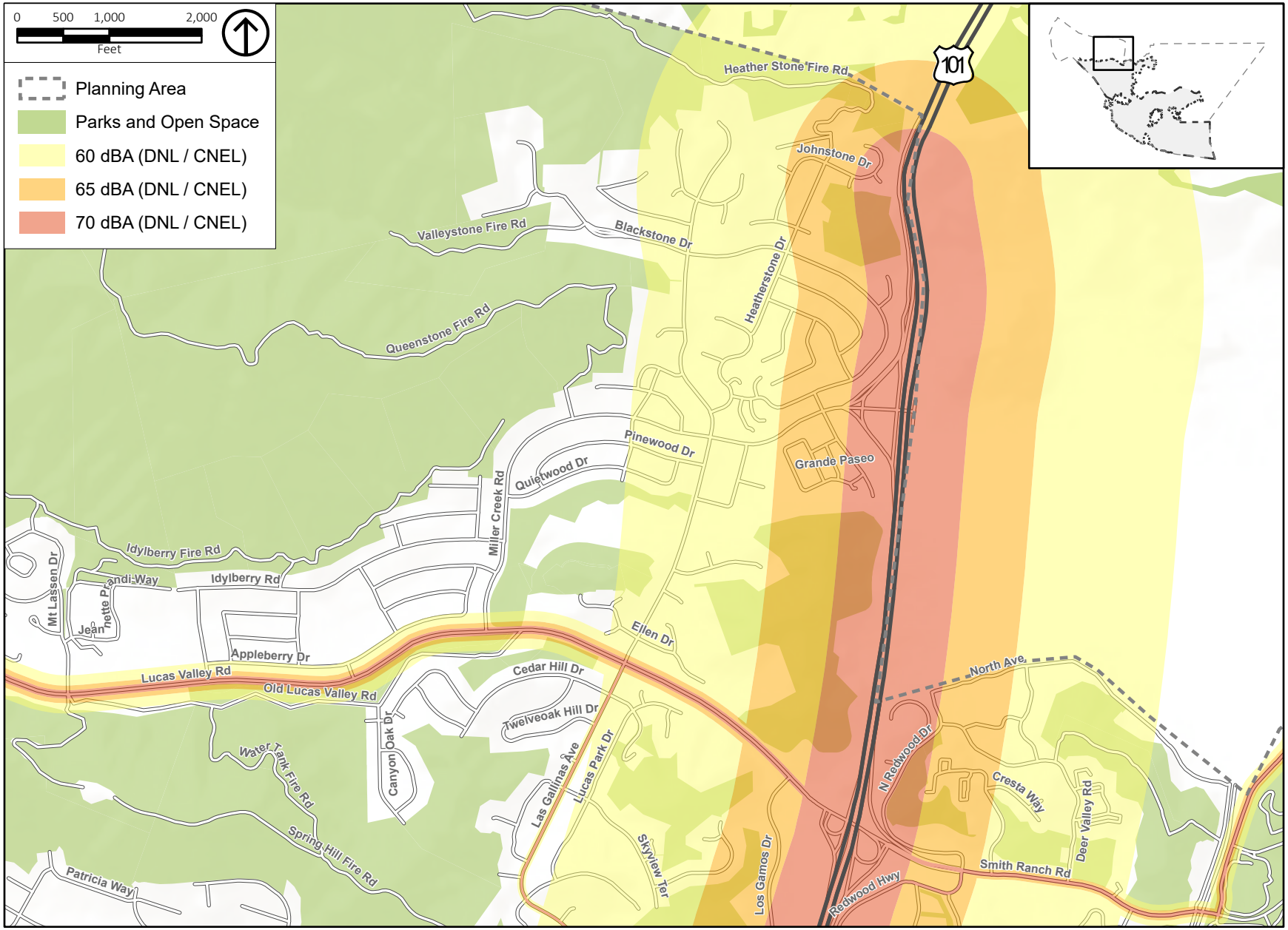
Roadway Segment	Existing L_{dn} (dBA) at 50 Feet	2040 General Plan L_{dn} (dBA) at 50 Feet	Increase	Threshold	Significant?
2nd St from 2nd-4th-Marquard to Hayes St	71.8	72.4	0.6	1.5	no
2nd St from Hayes St to Grand Ave	69.8	70.3	0.5	1.5	no
3rd St from Shaver St to Union St	67.5	68.4	0.8	1.5	no
3rd St from Union St to Mooring St	68.7	68.7	0.0	1.5	no
4th St from Ross Valley to 2nd-4th-Marquard	73.4	73.4	0.0	1.5	no
4th St from 2nd-4th-Marquard to Grand Ave	61.6	61.7	0.1	3	no
5th Ave from H St to Grand Ave	57.5	58.0	0.5	5	no
A St from 2nd St to 5th St	57.4	57.6	0.1	5	no
Andersen Dr from 2nd St to Bellam Blvd	65.2	65.5	0.3	1.5	no
Andersen from Bellam to Sir Francis Drake	69.2	69.3	0.0	1.5	no
Bellam from Andersen to Kerner	70.2	70.4	0.2	1.5	no
Civic Center Dr from Freitas to Merrydale O/C	63.9	64.9	1.0	3	no
Civic Center from Merrydale O/C to N San Pedro	59.5	61.0	1.6	5	no
D St from 4th to Bayview	62.9	63.0	0.1	3	no
Francisco Blvd East from Grand Ave to Bellam	65.8	66.3	0.5	1.5	no
Francisco East from Bellam to Main	67.2	68.0	0.9	1.5	no
Francisco West from 2nd St to Andersen	59.5	61.1	1.6	5	no
Freitas from Montecillo to Las Gallinas	65.8	66.2	0.4	1.5	no
Freitas from Las Gallinas to Del Presidio	69.3	70.2	1.0	1.5	no
Grand Ave from Villa to Mission Ave	58.0	58.3	0.3	5	no
Grand Ave from Mission to 2nd St	62.0	62.0	0.0	3	no
Hetherton from Mission to 2nd St	68.0	69.2	1.1	1.5	no
Irwin from Mission to 2nd St	67.2	68.1	0.9	1.5	no
Kerner from Canal to Bellam	61.0	61.0	0.0	3	no
Las Gallinas from Lucas Valley to Freitas	59.1	59.5	0.4	5	no
Las Gallinas from Freitas to Northgate	62.8	63.8	1.0	3	no
Lincoln from US-101 SB-Hammondale to Mission	62.3	63.8	1.4	3	no
Lincoln from Mission to Irwin	61.6	64.0	2.5	3	no
Lindaro from 3rd to Andersen	60.5	60.9	0.4	3	no
Los Ranchitos from Northgate to N San Pedro	60.0	60.9	0.9	3	no
Los Ranchitos from N San Pedro to Lincoln	59.9	62.1	2.3	5	no
Lucas Valley from Las Gallinas to US-101 SB Ramps	69.1	69.2	0.1	1.5	no
Mission from H St to Lincoln	57.9	58.4	0.5	5	no
Mission from Lincoln to Grand Ave	60.7	62.9	2.2	3	no
N San Pedro from Los Ranchitos to Civic Center	62.4	63.1	0.7	3	no
Northgate from Freitas to Los Ranchitos	56.9	57.9	1.0	5	no
Point San Pedro from Mooring to end	69.7	69.8	0.1	1.5	no
Redwood Highway from Smith Ranch to Freitas	63.9	63.9	0.0	3	no
Smith Ranch from US-101 NB Ramps to Silvera	65.5	65.5	0.0	1.5	no
Woodland from Lindaro to Irwin	58.1	59.4	1.3	5	no
Woodland from Irwin to Bellam	61.3	62.6	1.3	3	no

Source: Based on FHWA's traffic noise prediction model methodology using roadway volumes, vehicle mix, time of day splits, and number of lanes provided by Fehr & Peers, 2020 (see Appendix H, Noise Data, of this Draft EIR).



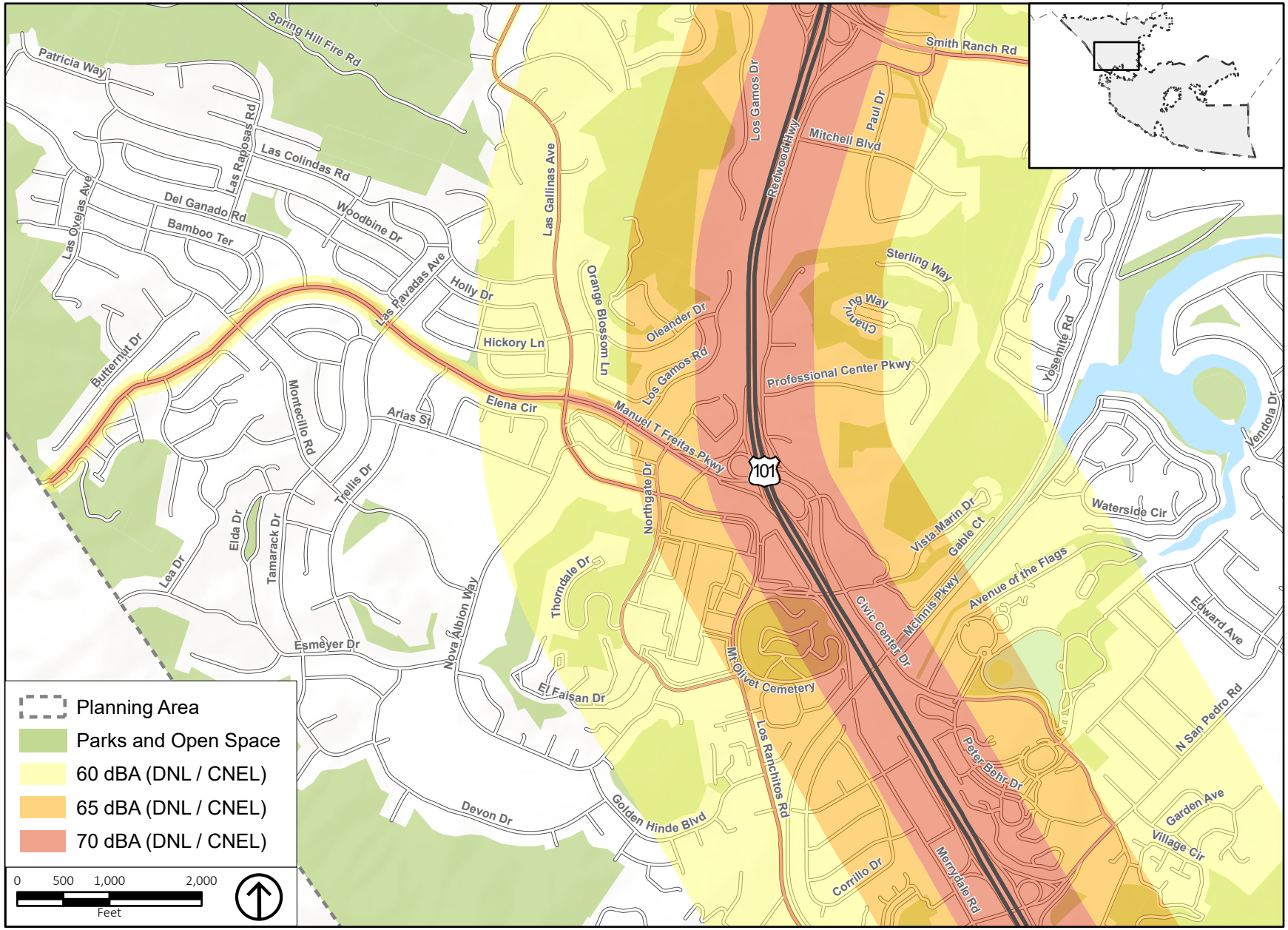
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-12
2040 Traffic Noise Contours-Planning Area



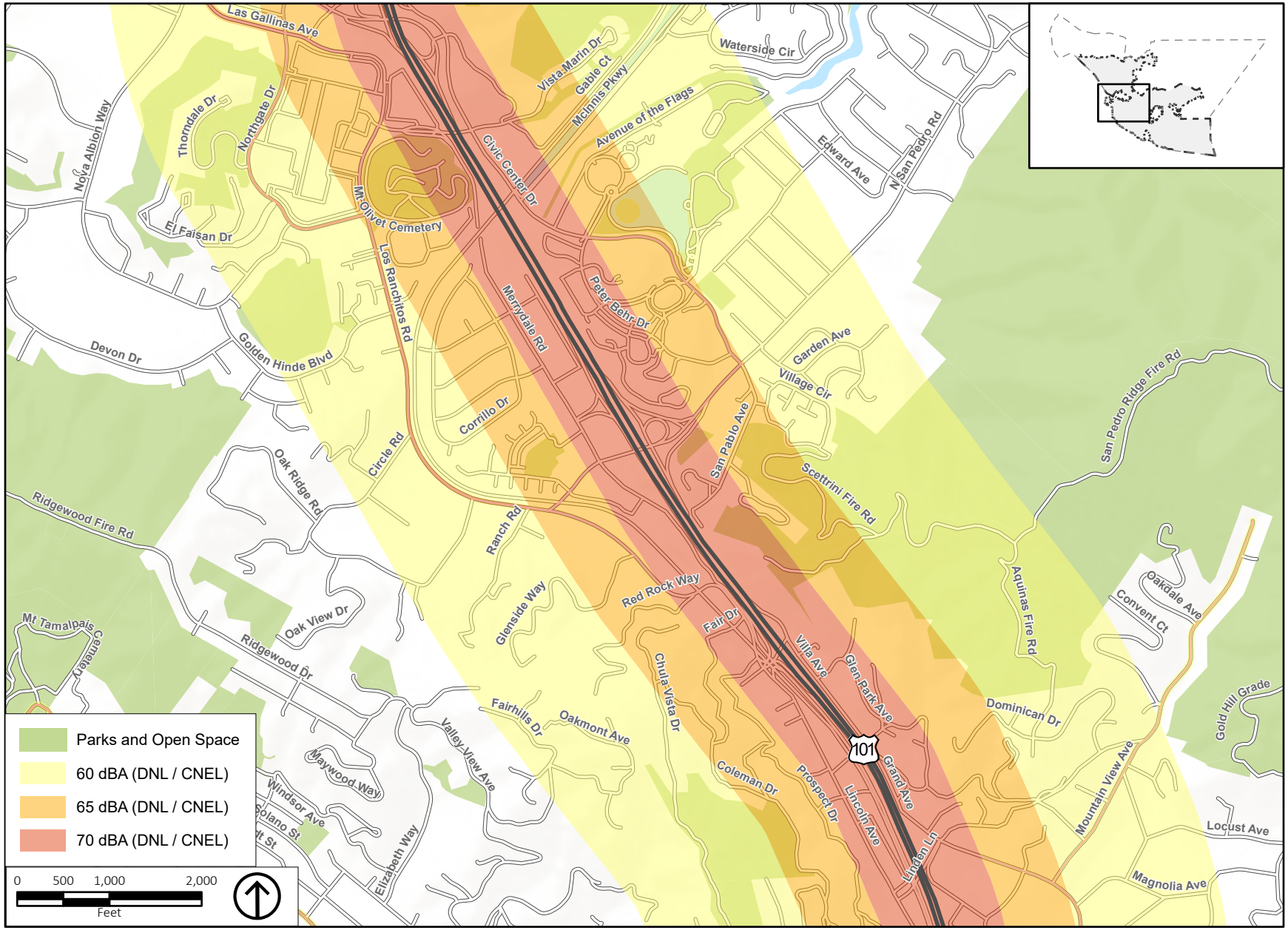
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-13
2040 Traffic Noise Contours-North



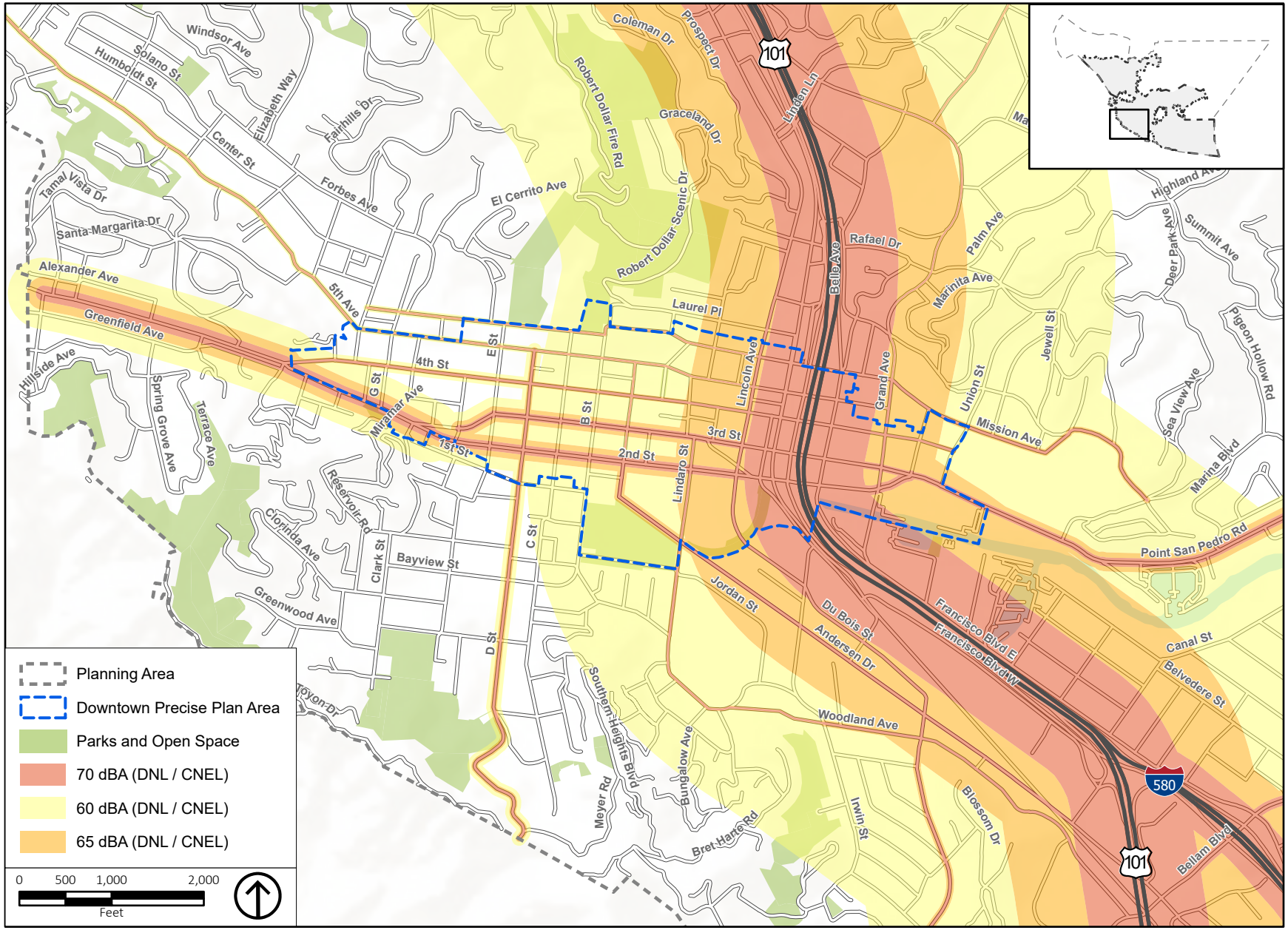
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-14
2040 Traffic Noise Contours-Northwest



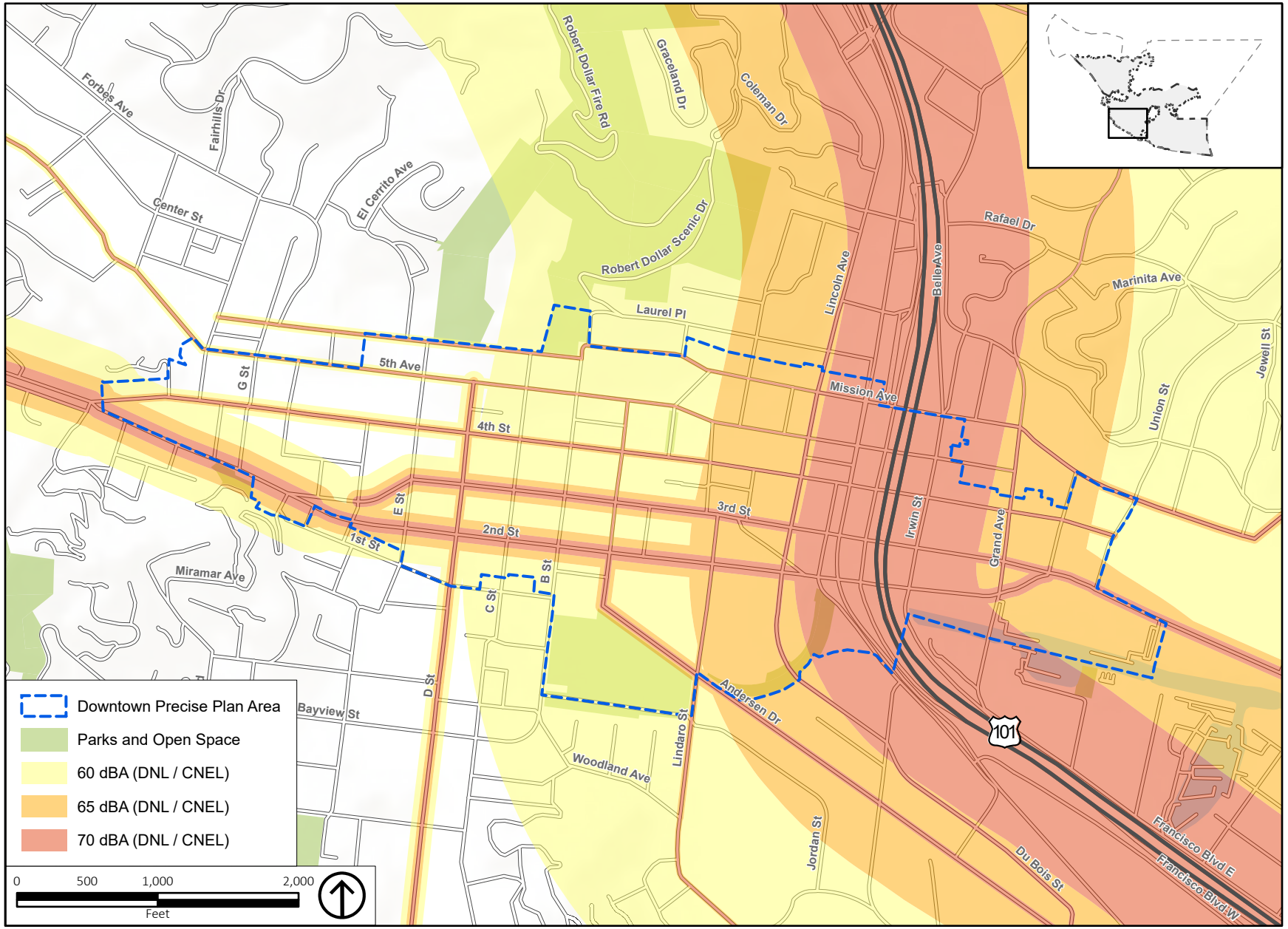
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-15
2040 Traffic Noise Contours-Central



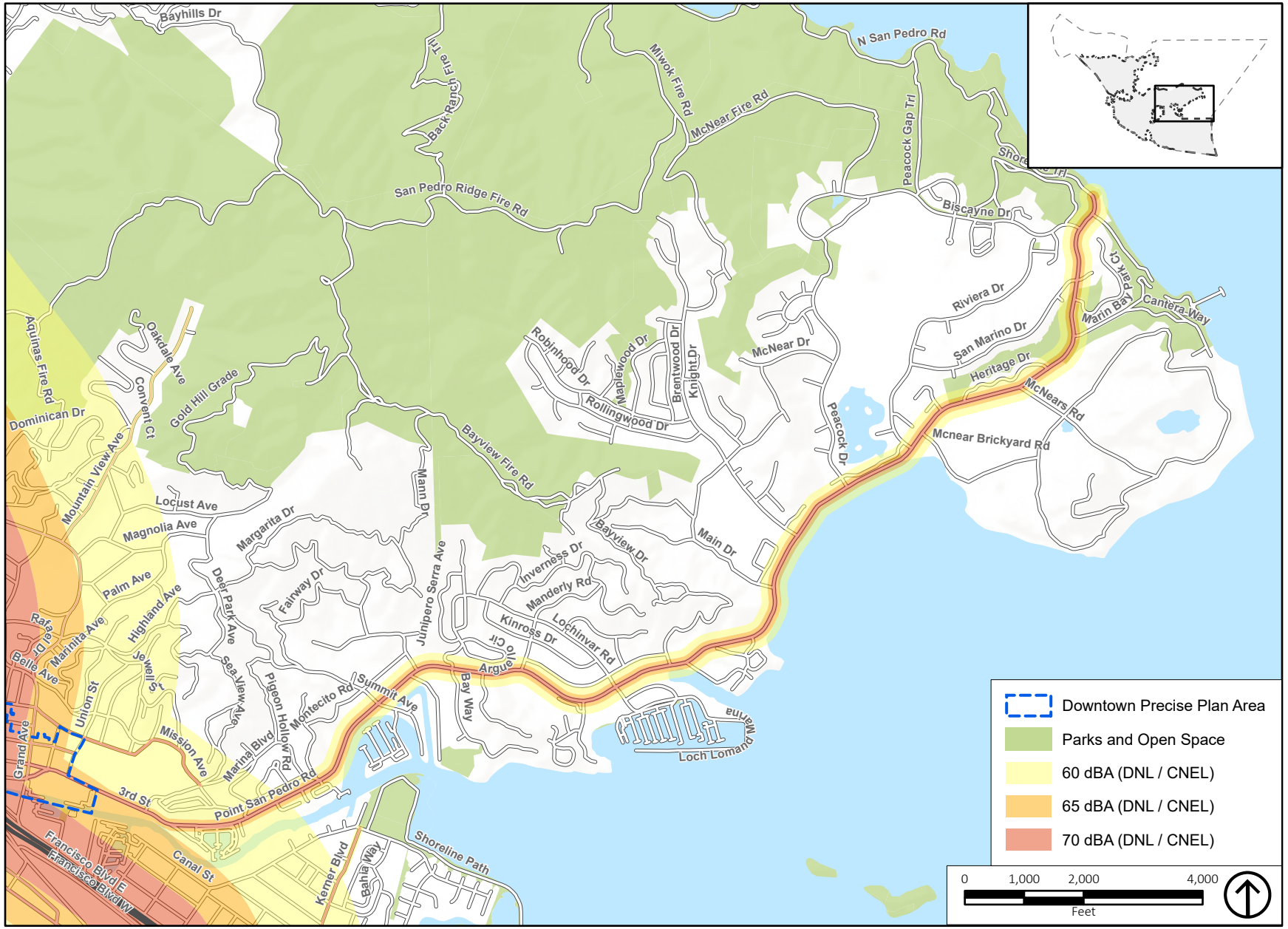
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-16
2040 Traffic Noise Contours-Southwest



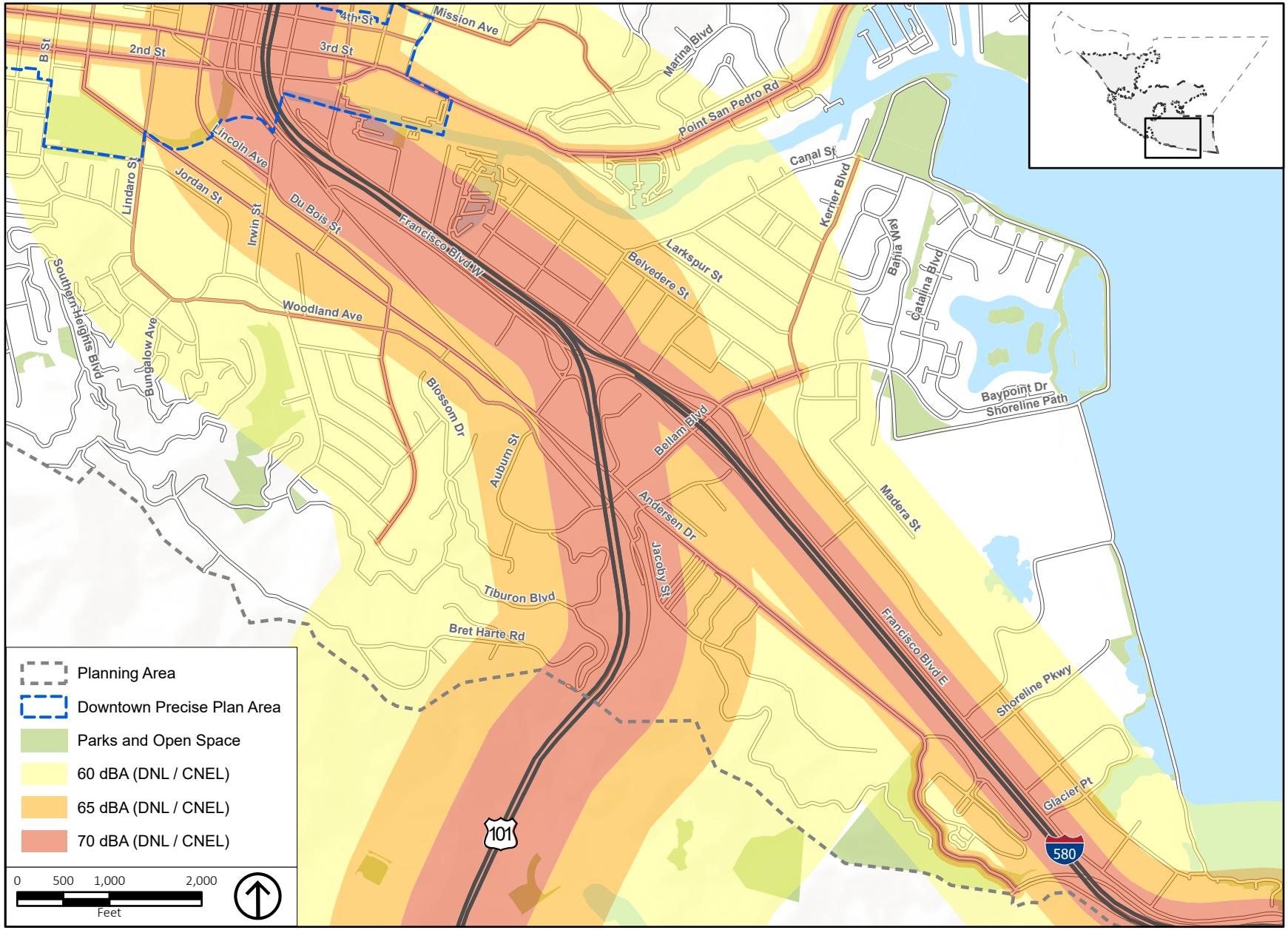
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-17
2040 Traffic Noise Contours -Downtown



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-18
2040 Traffic Noise Contours-East



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.13-19
2040 Traffic Noise Contours-Southeast

The proposed Noise (N) Element contains a goal, policies, and a program that require local planning and development decisions to consider noise-related impacts from transportation. The following General Plan 2040 goal, policies, and programs would further minimize potential adverse noise-related impacts from traffic:

Goal N-1: Acceptable Noise Levels. Protect the public from excessive, unnecessary, and unreasonable noise.

- Policy N-1.2: Maintaining Acceptable Levels of Noise. Use the following performance standards to maintain an acceptable noise environment in San Rafael:
  - New development shall not increase noise levels by more than 3 dB Ldn in a residential area, or by more than 5 dB Ldn in a non-residential area.
  - New development shall not cause noise levels to increase above the "normally acceptable" levels shown in Table N-1.
  - For larger projects, the noise levels in (a) and (b) should include any noise that would be generated by additional traffic associated with the new development.
  - Projects that exceed the thresholds above may be permitted if an acoustical study determines that there are mitigating circumstances (such as higher existing noise levels) and nearby uses will not be adversely affected.
- Program N-1.3C: Noise Barriers. Where appropriate, use absorptive noise barriers to reduce noise levels from ground transportation and industrial noise sources. A barrier should provide at least L_{dn} 5 dB of noise reduction to achieve a noticeable change in noise levels.
- Policy N-1.4: Sound Walls. Discourage the use of sound walls when other effective noise reduction measures are available. Vegetation, berms, and the mitigation measures in Policy N-1.3 are the preferred methods of absorbing sound along roads, rail, and other transportation features. Where there are no other feasible options (for example, along many sections of US Highway 101), the City will review and comment on sound wall design. Any sound walls should be aesthetically pleasing, regularly maintained, and designed to minimize the potential displacement of sound.
- Policy N-1.6: Traffic Noise. Minimize traffic noise through land use policies, law enforcement, street design and improvements, and site planning and landscaping.
- Program N-1.6A: Interagency Coordination. Work with Caltrans, Marin County, the Transportation Authority of Marin, and other agencies to achieve noise reduction along freeways and major arterials in San Rafael. This shall include noise mitigation measures in any redesign plan for the I-580/US 101 interchange.
- Program N-1.6B: California Vehicle Code. Enforce applicable sections of the California Vehicle Code relating to noise.
- Program N-1.6C: Paving and Transit Improvements. Pursue cost-effective paving technologies to minimize traffic noise and support the use of quieter buses and other mass transit vehicles. Noise reduction should be considered an important benefit as the City and its transit service providers transition to electric vehicles.

Rail Noise

Due to the establishment of a Quiet Zone in Marin County, noise from the SMART rail is not substantial much beyond the rail right-of-way. Train operators are not required to sound their horn at grade crossings due to the Quiet Zone. However, the train operator may still sound their horn in the case of emergencies at their discretion. Ambient noise monitoring at the long-term monitoring location LT-2 indicates that the 60 L_{dn} noise contour from SMART rail activity does not extend beyond 50 feet from the railroad centerline. Furthermore, the proposed Noise (N) Element contains a goal, policy, and program that require local planning and development decisions to consider noise-related impacts from rail. The following General Plan 2040 goal, policy, and program would further minimize potential adverse noise-related impacts from trains.

Goal N-1: Acceptable Noise Levels. Protect the public from excessive, unnecessary, and unreasonable noise.

- Policy N-1.8: Train Noise. Work with Sonoma Marin Area Rail Transit (SMART) to minimize noise and vibration associated with train service and to reduce the potential for impacts on nearby residences.
  - Program N-1.8A: Quiet Zones. Maintain the Marin County designated "Quiet Zone" along the rail line. The Zone ensures that train horns are not sounded except when trains are leaving the station, or if there is an emergency.

Stationary Source Noise

Stationary sources of noises may occur on all types of land uses. Residential uses would generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses would generate noise from HVAC systems, loading docks, and other sources. Industrial uses may generate noise from HVAC systems, loading docks, and possibly machinery. Noise generated by residential or commercial uses is generally short and intermittent. Industrial uses may generate noise on a more continual basis. Nightclubs, outdoor dining areas, gas stations, car washes, fire stations, drive-throughs, swimming pool pumps, school playgrounds, athletic and music events, and public parks are other common noise sources. Stationary noise sources are controlled by SRMC Chapter 8.13, Noise. Furthermore, the proposed Noise (N), Land Use (LU), Parks, Recreations and Open Space (PROS), and Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider noise-related impacts from stationary sources. The following General Plan 2040 goals, policies, and programs would further minimize potential adverse noise-related impacts from stationary sources.

Goal N-1: Acceptable Noise Levels. Protect the public from excessive, unnecessary, and unreasonable noise.

- Policy N-1.3: Reducing Noise Through Planning and Design. Use a range of design, construction, site planning, and operational measures to reduce potential noise impacts.
  - Program N-1.3A: Site Planning. Where appropriate, require site planning methods that minimize potential noise impacts. By taking advantage of terrain and site dimensions, it may be possible to arrange buildings, parking, and other uses to reduce and possibly eliminate noise conflicts. Site planning techniques include:
    - Maximizing the distance between potential noise sources and the receiver.

  - Placing non-sensitive uses such as parking lots, maintenance facilities, and utility areas between the source and receiver.
  - Using non-sensitive uses such as garages to shield noise sensitive areas.
  - Orienting buildings to shield outdoor spaces from noise sources.
  - Incorporating landscaping and berms to absorb sound.
- Program N-1.3B: Architectural Design. Where appropriate, reduce the potential for noise conflicts through the location of noise-sensitive spaces. Bedrooms, for example, should be placed away from freeways. Mechanical and motorized equipment (such as air conditioning units) should be located away from noise-sensitive rooms. Interior courtyards with water features can mask ambient noise and provide more comfortable outdoor spaces.
- Program N-1.3C: Noise Barriers. Where appropriate, use absorptive noise barriers to reduce noise levels from ground transportation and industrial noise sources. A barrier should provide at least L_{dn} 5 dB of noise reduction to achieve a noticeable change in noise levels.
- Policy N-1.9: Maintaining Peace and Quiet. Minimize noise conflicts resulting from everyday activities such as construction, sirens, yard equipment, business operations, night-time sporting events, and domestic activities.

In addition, the General Plan 2040 includes programs that support a reduced noise environment, such as Programs LU-2.7A, PROS-1.13B, and EDI-2.5A.

Land Use Compatibility

As a result of the Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal. 4th 369 (No. S 213478), December 17, 2015), it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, while the noise from existing sources is taken into account as part of the baseline, the direct effects of exterior noise from nearby noise sources relative to land use compatibility of a future project as a result of General Plan buildout is typically no longer a required topic for impact evaluation under CEQA. Generally, no determination of significance is required with the exception of certain school projects, projects affected by airport noise, and projects that would exacerbate existing conditions (i.e., projects that would have a significant operational impact). As required by General Plan 2040 Policy N-1.1, the noise and land use compatibility standards would be applied in land use decisions, including maintaining the maximum noise standards for outdoor and common use areas, as specified in General Plan 2040 Program N-1.1A. At the discretion of the San Rafael Building Division, requirements may include, but not necessarily be limited to, acoustical studies that show noise reduction features, acoustical design in new construction, and other methods that provide compliance with the California Building Code (adopted in SRMC Chapter 12.12, California Building Code) and City provisions for acceptable indoor and outdoor noise levels.

Significance without Mitigation: Less than significant.

Downtown Precise Plan: Operational Noise

As previously stated, roughly half of the anticipated potential future development by 2040 is expected to occur within the boundaries of the Downtown Precise Plan Area. As with the previous discussion for potential future development in other parts of the city, the operation of future projects in the Downtown Precise Plan Area would be required to comply with the General Plan goals, policies, and programs that would minimize operational noise impacts associated with traffic, trains, stationary uses, and land use compatibility. Future development in the Downtown Precise Plan Area would also be required to comply with the California Building Code (adopted in SRMC Title 12, Building Regulations) and City provisions for acceptable indoor and outdoor noise levels Therefore, impacts from development in the Downtown Precise Plan Area are likewise *less than significant*.

Significance without Mitigation: Less than significant.

NOISE-2 Implementation of the proposed project could result in generation of excessive groundborne vibration or groundborne noise levels.

General Plan 2040: Construction Vibration

Construction of future projects within the EIR Study Area could generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibration that spreads through the ground and diminishes with distance from the source. The effect on buildings in the vicinity of a construction site varies depending on soil type, ground strata, and the type of materials the buildings constructed from. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can cause architectural damage but can annoy people in buildings close to the construction site. Table 4.13-9 lists typical vibration levels for construction equipment in terms of Peak Particle Velocity (PPV), which as previously described is the peak rate of speed at which soil particles move due to ground vibration. PPV is measured in inches per second or in/sec.

TABLE 4.13-9 VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate PPV Vibration Level at 25 Feet (inches per second)
Pile Driver, Impact (Upper Range)	1.518
Pile Driver, Impact (Typical)	0.644
Pile Driver, Sonic (Upper Range)	0.734
Pile Driver, Sonic (Typical)	0.170
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Notes: Peak Particle Velocity (PPV) is the peak rate of speed at which soil particles move (e.g., inches per second or in/sec) due to ground vibration.
Source: Federal Transit Administration, 2018.

As shown in Table 4.13-9, vibration generated by construction equipment has the potential to be substantial, since it has the potential to exceed the FTA criteria for architectural damage (e.g., 0.12 in/sec PPV for fragile or historical resources, 0.20 in/sec PPV for non-engineered timber and masonry buildings, and 0.30 in/sec PPV for engineered concrete and masonry).

The proposed Noise (N) Element contains a goal, policy, and program that would require local planning and development decisions to consider vibration-related impacts. The following General Plan 2040 goal, policy, and program would minimize potential adverse noise-related impacts from construction vibration.

Goal N-1: Acceptable Noise Levels. Protect the public from excessive, unnecessary, and unreasonable noise.

- Policy N-1.11: Vibration. Ensure that the potential for vibration is addressed when transportation, construction, and non-residential projects are proposed, and that measures are taken to mitigate potential impacts.
  - Program N-1.11A: Vibration-Related Conditions of Approval. Adopt standard conditions of approval to reduce the potential for vibration-related construction impacts for development projects near sensitive uses such as housing and schools. Vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects.

While General Plan Program N-1.11A requires the City to adopt standard conditions of approval to reduce the potential of vibration related construction impacts near sensitive receptors, it does not include performance standards because the City has no adopted thresholds for vibration impacts. As described in Section 4.13.2.2, Federal Transit Administration Vibration Limits, establishes vibration limits from construction activities in order for impacts to be less than significant on a project-by-project basis. Therefore, without modifications to Program N-1.11A impacts are considered *potentially significant*.

Impact NOISE-2a: Construction activities associated with potential future development could generate excessive short-term vibration levels during project construction.

Mitigation Measure NOISE-2a: To ensure receptors, both buildings and people, that are sensitive to vibration from construction noise are not exposed to unacceptable vibration levels from discretionary development projects that are subject to CEQA the City shall revise General Plan Program N-1.11A (Vibration-Related Conditions of Approval) to support Policy N-1.11 (Vibration) be implemented as part of the project approval process. Revisions to Program N-1.11A are shown in double-underlined text:

- Modified Program N-1.11A: Construction Vibration-Related Conditions of Approval. Adopt standard conditions of approval in San Rafael Municipal Code Chapter 8.13, Noise, that require the Federal Transit Administration (FTA) criteria for acceptable levels of groundborne vibration for various types of buildings be applied to reduce the potential for vibration-related construction impacts for development projects near sensitive uses such as older or historically significant buildings and structures, housing, and schools. If vibration levels exceed the FTA limits, the condition of approval shall identify alternative uses, such as drilling piles instead of pile driving and static rollers instead of vibratory rollers. Construction vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects.

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Construction Vibration

As discussed in Chapter 4.5, Cultural Resources, of this Draft EIR, the Downtown Precise Plan Area has a 200-year legacy of being the cultural hub of Marin County and includes most of the historic buildings in the city. Because roughly half of the anticipated potential future development by 2040 is expected to occur within the boundaries of the Downtown Precise Plan Area, there is the potential for future projects to cause adverse impacts to buildings or structures that are identified as being extremely susceptible to vibration damage during the construction phase. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce vibration from construction; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. As with the previous discussion for potential future development in other parts of the city, future projects in the Downtown Precise Plan Area would be required to comply with the General Plan goal, policy, and program in the Noise Element that would require local planning and development decisions to consider vibration-related impacts and with the short-term vibration condition of approval to reduce vibration impacts to sensitive buildings and structures during construction following the adoption of the condition of approval as required by Mitigation Measure NOISE-2a. Therefore, impacts from potential future development in the Downtown Precise Plan Area would be likewise *less than significant* with implementation of Mitigation Measure NOISE-2a.

Significance with Mitigation: Less than significant.

General Plan 2040: Operational Vibration

Commercial and industrial operations in the EIR Study Area would generate varying degrees of ground vibration, depending on the operational procedures and equipment. Such equipment-generated vibrations would spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the vibration source varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. As discussed above, the 2014 Draft EIR for SMART found that residences located more than 40 feet from the railroad centerline (outside the rail right-of-way) would not experience perceptible vibration.[6]

Like construction vibration, the City does not have any adopted standards for operational vibration. As described in Section 4.13.2.2, Federal Transit Administration Vibration Limits, establishes vibration limits from operational activities in order for impacts to be less than significant on a project-by-project basis. For vibration annoyance from operational sources, the FTA recommends the following criteria for frequent events: 65 VdB for highly sensitive uses with vibration-sensitive equipment (e.g., microscopes in hospitals and research facilities) and 72 VdB for residences. Therefore, without a Program to address vibration from opertion impacts are considered *potentially significant*.

[6] Sonoma-Marin Area Rail Transit, 2014, *Downtown San Rafael to Larkspur Extension Environmental Assessment*.

Impact NOISE-2b: Operational activities associated with potential future development could generate excessive long-term vibration levels.

Mitigation Measure NOISE-2b: To ensure receptors that are sensitive to operational vibration from commercial or industrial uses are not exposed to unacceptable vibration levels from discretionary development projects that are subject to CEQA the City shall, shall adopt the following General Plan Program to support Policy N-1.11 (Vibration) be implemented as part of the project approval process:

- New Program: Adopt standard conditions of approval in San Rafael Municipal Code Chapter 8.13, Noise, that require the Federal Transit Administration (FTA) criteria for acceptable levels of groundborne vibration from commercial or industrial uses to reduce long-term vibration impacts at existing or potential future sensitive uses such as uses with vibration-sensitive equipment (e.g., microscopes in hospitals and research facilities) or residences. Operational vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects.

Significance with Mitigation: Less than significant.

Downtown Precise Plan: Operational Vibration

Like construction impacts, the impacts from future projects in the Downtown Precise Plan Area could result in vibration-related impacts during operation to the numerous historic buildings located in this area of which some could be identified as being extremely susceptible to vibration damage. As with development in other parts of the city, future projects in the Downtown Precise Plan Area would be required to comply with the General Plan goal, policy, and program in the Noise Element that requires local planning and development decisions to consider vibration-related impacts as well as with and with the long-term vibration condition of approval to reduce vibration impacts to sensitive buildings and structures during operation following the adoption of the condition of approval as required by Mitigation Measure NOISE-2b. Therefore, long-term vibration impacts from the operation of potential future development in the Downtown Precise Plan Area are likewise *less than significant* with implementation of Mitigation Measure NOISE-2b.

Significance with Mitigation: Less than significant.

NOISE-3 Implementation of the proposed project could expose people residing or working within two miles of a private airstrip or airport to excessive noise levels.

General Plan 2040

As discussed in Section 4.13.1.5 under "Aircraft Noise," the San Rafael Airport is a private airstrip with minimal air traffic. As shown on Figure 4.13-10, airport noise contours do not extend much beyond the

runway, and airport noise does not significantly affect nearby sensitive receptors (i.e., all residences are outside of the 55 and 60 dBA L_{dn} noise contours).

The proposed Noise (N) Element contains one goal and policy that would require local planning and development decisions to consider noise-related impacts from the San Rafael Airport. The following General Plan 2040 goal and policy would minimize potential adverse noise-related impacts from the airport.

Goal N-1: Acceptable Noise Levels. Protect the public from excessive, unnecessary, and unreasonable noise.

- Policy N-1.7: Aviation-Related Noise. To the extent allowed by federal and state law, ensure that the noise impacts of any changes in facilities or operations are considered when granting or modifying use permits at the San Rafael Airport in North San Rafael and the heliport in East San Rafael.

Because the proposed General Plan 2040 would not cause a direct increase in flights and all residences are outside of the 55 and 60 dBA L_{dn} noise contours, impacts from future potential projects in the EIR Study Area would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Like potential future development in other parts of the city, potential future development in the Downtown Precise Plan Area is outside of the 55 and 60 dBA L_{dn} noise contours, and impacts from potential future projects in this area would likewise be *less than significant*.

NOISE-4 Implementation of the proposed project could result in a cumulatively considerable impact to noise impacts.

The analysis of the proposed project, discussed above, addresses cumulative impacts with regard to noise, groundborne noise, and vibration. Although multiple simultaneous nearby noise sources may, in combination, result in higher overall noise levels, this effect is captured and accounted for by the ambient noise level metrics that form the basis of the thresholds of significance for noise analysis. Any measurement of sound or ambient noise, whether for the purpose of evaluating land use compatibility, establishing compliance with exterior and interior noise standards, or determining point-source violations of a noise ordinance, necessarily will incorporate noise from all other nearby perceptible sources.

Additionally, although noise attenuation is influenced by a variety of topographical, meteorological, and other factors, noise levels decrease rapidly with distance, and vibration impacts decrease even more rapidly. Therefore, site-level cumulative noise or vibration impacts across city boundaries occur only infrequently. The city of San Rafael shares borders with other incorporated and unincorporated communities and similarly urbanized areas, which makes cross-border cumulative noise and vibration impacts possible. Nevertheless, given the Noise Element policies and SRMC requirements discussed above, it is unlikely that operations-related noise would, in combination with noise sources from adjacent

cities, result in cumulative noise impacts. Additionally, because any noise measurements taken in conjunction with Noise Element policies or SRMC requirements would necessarily account for noises received from outside the boundaries of the city of San Rafael, the ongoing implementation of these policies and regulations under the proposed project would serve to prevent site-based cumulative noise impacts. Furthermore, impacts related to construction and operational noise were found to be less than significant with implementation of Mitigation Measure NOISE-1, NOISE-2a and NOISE-2b.

Similarly, the noise contours and traffic-related noise levels developed for the proposed project include and account for regional travel patterns as they affect traffic levels in San Rafael. Noise contours were based upon both existing and projected future traffic volumes that incorporate cumulative regional effects and trends. Existing noise contours were derived from traffic volumes based on counts of current traffic, and these traffic counts inherently include cumulative traffic, as generated by regional trips. With regard to future noise, projected noise contours were determined using projected 2040 traffic volumes; these data account for growth in San Rafael under the proposed project as well as anticipated regional growth. The future noise modeling that served as the foundation for the overall project analysis was therefore based on future, cumulative conditions. Additionally, the proposed Mobility (M) Element, which would be adopted as part of the proposed project, contains goals, policies, and programs that would require local planning and development decisions to consider reductions in vehicle trips by providing for a circulation system that accommodates alternative modes of transportation. Additionally, the proposed project includes an update to the City's Zoning Ordinance for the Downtown Precise Plan Area that would promote travel patterns oriented to pedestrian, transit, and bicycle use; thus further reducing noise from motorized transportation sources.

Impacts NOISE-1 through NOISE-3 therefore encompass and address cumulative noise impacts from implementation of the proposed project. As discussed under Impact NOISE-1, NOISE-2a, and NOISE-2b, with the uniform application of pertinent policies and programs of the General Plan, as well as all mitigation measures, the proposed project would not result in a cumulatively considerable impact related to noise and vibration and cumulative impacts would be *less than significant.*

Significance with Mitigation: Less than significant.

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4.14 POPULATION AND HOUSING

This chapter describes existing population and housing characteristics within the Environmental Impact Report (EIR) Study Area and evaluates the potential environmental consequences of potential future development that could occur by adopting and implementing the proposed project. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project.

4.14.1 ENVIRONMENTAL SETTING

4.14.1.1 REGULATORY FRAMEWORK

State Regulations

California Housing Element Law

California Housing Element Law[1] includes provisions related to the requirements for housing elements of local government General Plans. Among these requirements, some of the necessary parts include an assessment of housing needs and an inventory of resources and constraints relevant to the meeting of these needs. Additionally, in order to assure that counties and cities recognize their responsibilities in contributing to the attainment of the State housing goals, this section of the Government Code calls for local jurisdictions to plan for and allow the construction of a share of the region's projected housing needs, known as the Regional Housing Needs Allocation (RHNA). The City of San Rafael's 2015–2023 Housing Element Update was adopted in January 2015.

Regional Regulations

Plan Bay Area

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, *Plan Bay Area* is the regional transportation plan/sustainable community strategy for the nine-county Bay Area region. *Plan Bay Area* lays out a development scenario for the nine-county Bay Area that works to align transportation and land use planning in order to reduce vehicle miles traveled through modified land use patterns, as mandated by the Sustainable Communities and Climate Protection Act (Senate Bill 375). The current *Plan Bay Area* projects growth and development patterns through 2040 and is currently being updated to extend to 2050.

While *Plan Bay Area* 2040 distributes future growth across the Bay Area region in order to meet its GHG emissions reduction, housing, and other performance targets, it is not intended to override local land use control. Cities and counties are ultimately responsible for the manner in which their local communities continue to be built out. For this reason, cities and counties are not required to revise their land use

[1] Government Code Section 65580-65589.8.

policies and regulations, including their general plans, to be consistent with the regional transportation plan or an alternative planning strategy.

As described in Chapter 4, Environmental Analysis, *Plan Bay Area* designates Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) throughout the region. PDAs are areas along transportation corridors which are served by public transit that allow opportunities for development of transit-oriented, infill development within existing communities that are expected to host the majority of future development. TPAs are similar in that they are formed within one-half mile around a major transit stop such as a transit center or rail line. Overall, over two-thirds of all regional growth by 2040 is allocated to PDAs and TPAs. As shown on Figure 4-1, the EIR Study Area has three PDAs. The PDAs include the North San Rafael PDA, Southeast San Rafael/Canal PDA, and Downtown San Rafael SMART Station PDA and TPA.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to population and housing are primarily in the Land Use (LU) Element, Neighborhoods (N) Element, and Housing (H) Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended or substantially changed, and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Policy Amendments, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact under Section 4.14.3, Impact Discussion, later in this chapter.

San Rafael Municipal Code

Besides the General Plan, the City of San Rafael Municipal Code (SRMC) is the primary tool that regulates physical development in San Rafael. The SRMC contains all ordinances for the city and identifies land use categories, site development regulations, and other general provisions that ensure consistency between the General Plan and proposed development projects. The SRMC is organized by title, chapter, and section.

Title 14 of the SRMC sets forth the City's Zoning Ordinance, the primary purpose of which is to "promote and protect the public health, safety, peace, comfort and general welfare" of the City of San Rafael, with specific purposes listed under:

- Section 14.01.030, Purposes. The Zoning Ordinance is the mechanism used to implement the land use goals, policies, and programs of the General Plan and to regulate all land use within the city. The Zoning Ordinance describes zoning designations and contains the zoning map and development standards for the zoning designations.
- Chapter 14.04, Residential Districts. This chapter serves to protect and provide a variety of housing opportunities and types, and to promote residential development compatible with environmental constraints and nearby development.

- Chapter 14.05, Commercial and Office Districts. This chapter lists the specific purposes of the Commercial and Office Districts. It includes several districts in the Downtown Precise Plan that allow for residential mixed-use development.

4.14.1.2 EXISTING CONDITIONS

This section describes the existing population and housing conditions in San Rafael, as well as Marin County as a whole, to provide context for the analysis of the proposed project in this EIR.

Population

San Rafael is the largest city in Marin County and has experienced the fastest rate of population growth in the county since 1960. The population in the EIR Study Area reached 75,751 by 2020, including roughly 60,000 people in the city limits and 15,000 in the unincorporated area. Historically, growth in San Rafael has fluctuated significantly, increasing by 90 percent in the 1960s during a period of rapid growth and development, compared to relatively static growth of less than 3 percent from 2000 to 2010. Comparatively, the overall population of Marin County grew from 252,409 in 2010 to 262,240 in 2019, which represents a growth rate of 4 percent. The second largest city in Marin County is Novato, with 54,115 residents. The remaining nine cities in Marin County vary in size, ranging between 2,000 and 15,000 people.[2]

Housing

In 2020, the EIR Study Area had 29,529 housing units with a 5.1 percent vacancy rate.[3] Of the occupied housing units, 52 percent are owner occupied and 48 percent are renter occupied. Marin County's vacancy rate and housing tenure is higher than San Rafael's—7.2 percent, with 63 percent owner occupied units and 37 percent renter occupied units.[4]

Approximately 46 percent of San Rafael's homes are detached single-family homes while 10 percent are attached. Multi-family homes make up 42 percent of housing units in the city, and mobile homes make up 2 percent. These housing unit types are different from the countywide breakdown, which is 61 percent detached single-family homes, 10 percent attached single-family homes, 27 percent multifamily, and 2 percent mobile homes.

Employment

The city of San Rafael accounts for over one-third of the total jobs in Marin County. Major employment sectors in the city include education, health and social services, and research and development.

[2] State of California, Department of Finance, *Report E-5, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2019, with 2010 Benchmark*, Table 2: City/County Population and Housing Estimates.

[3] State of California, Department of Finance, *Report E-5, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2019, with 2010 Benchmark*, Table 2: City/County Population and Housing Estimates.

[4] State of California, Department of Finance, *Report E-5, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2019, with 2010 Benchmark*, Table 2: City/County Population and Housing Estimates

Compared to the county, San Rafael has a higher concentration in jobs in the public administration, transportation, warehousing, and utilities sectors. In 2020, San Rafael has approximately 44,200 jobs, an increase of 1.8 percent from 2010. By comparison, Marin County has approximately 124,700 jobs in 2020, of which approximately 80,500 jobs are outside of San Rafael.[5]

4.14.1.3 GROWTH PROJECTIONS

The *Plan Bay Area* includes growth projections to 2040 at 10-year benchmark intervals. Projections are calculated using several sources, including assessments of historical growth, population estimates released by the State Department of Finance, and General Plan buildout projections established by local jurisdictions. As shown in Table 4.14-1, the *Plan Bay Area* projections anticipate that San Rafael's population would increase with a growth rate of 16 percent between 2010 and 2040. The growth projections anticipate the number of housing units to increase by 9 percent, with jobs projected to increase by 13 percent. Total jobs in Marin County are projected to increase by 11 percent over the same time period. Jobs in San Rafael are expected to increase to approximately 42 percent of the county total. However, the forecasts shown in Table 4.14-1 were created with a 2010 baseline, and therefore some of the growth anticipated has already occurred.

TABLE 4.14-1 PLAN BAY AREA REGIONAL PROJECTIONS FOR SAN RAFAEL AND MARIN COUNTY

					Change 2010–2040	
	2010	2020	2030	2040	Number	Percent
San Rafael City Limit						
Total Population	57,850	60,060	64,220	66,880	9,030	16%
Housing Units [a]	23,735	24,035	25,320	25,870	2,135	9%
Total Jobs	43,430	47,835	48,650	49,050	5,620	13%
Marin County						
Total Population	252,920	265,875	274,530	282,670	29,750	12%
Housing Units [a]	111,200	112,540	114,030	115,470	4,270	4%
Total Jobs	121,785	129,900	133,480	134,960	13,175	11%

Notes:
[a] Includes both multifamily and single-family dwelling units.
Source: *Plan Bay Area* 2040 Projections, http://projections.planbayarea.org/, 2020.

[5] California Economic Development Department, 2020, Marin County Profile.

Priority Development Areas

As previously stated, overall, over two-thirds of all regional growth by 2040 is allocated to PDAs and TPAs.[6] As described in Chapter 4, Environmental Analysis, and shown on Figure 4-4, the Downtown San Rafael SMART Station PDA and TPA is partially located in the Downtown Precise Plan Area. ABAG indicates that this PDA is expected to absorb about 40 percent of the city's household growth in the next 20 years, although General Plan 2040 is anticipating an even higher capture rate.[7] As shown in Table 4.14-2, the total population in this PDA is expected to increase by 49 percent while housing units and jobs are anticipated to increase by 46 percent and 10 percent, respectively.

TABLE 4.14-2 PLAN BAY AREA REGIONAL PROJECTIONS FOR DOWNTOWN SAN RAFAEL SMART STATION PDA

			Change 2010 to 2040	
	2010	2040	Number	Percent
Total Population	4,390	6,550	2,160	49%
Housing Units [a]	1,785	2,600	815	46%
Total Jobs	9,100	10,000	900	10%

Notes:
[a] Includes multifamily and single-family dwelling units.
[b] Assumes 2.46 persons per household in 2010 and 2.56 persons per household in 2040.
Source: *Plan Bay Area* 2040 Projections, http://projections.planbayarea.org/, 2020.

Since the adoption of *Plan Bay Area* 2040 and its associated growth projections, two new PDAs were designated in the EIR Study Area. As shown on Figure 4-2 and Figure 4-3 in Chapter 4, Environmental Analysis, these PDAs are located in northern and southeastern San Rafael. They are described as follows:

- Northgate PDA. This is the northernmost PDA in the Terra Linda neighborhood of San Rafael. The Northgate PDA includes the Northgate Mall, Northgate I Centre, Northgate III, and the Las Gallinas office and gas station areas.
- Southeast San Rafael/Canal PDA. This is the southernmost PDA in San Rafael and includes the southeast part of the city, including the Canal neighborhood.

The new designations mean that the Northgate and the Southeast San Rafael/Canal PDAs will be included in *Plan Bay Area* 2050 and will therefore be eligible to apply for MTC funding to conduct focused land use planning and policy development in the designated areas. No direct development or land use changes which would result in direct development are proposed as part of General Plan 2040. Further, because these PDAs were designated after the adoption of *Plan Bay Area* 2040, there were no growth projections available at the time the proposed project was being conducted. However, because *Plan Bay Area* anticipates the majority of growth in the Bay Area will occur in PDAs, both these PDA areas are anticipated

[6] Bay Area Air Quality Management District, 2017, Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed March 18, 2019.

[7] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017, *Plan Bay Area* 2040 Plan.

to experience growth through the proposed project's 2040 horizon year. Population projections for the Northgate PDA and the Southeast San Rafael/ Canal PDA are anticipated to become available in 2021.

These PDA designations were sought in response to requests received from neighborhood representatives to pursue a deeper dive planning effort for these two areas. These representatives have requested that the General Plan 2040 incorporate programs that would commit to pursuing funding and development of a Specific, Precise or Neighborhood Plan for the Canal neighborhood and North San Rafael. In addition, community members have indicated that funding and developing a Specific/Precise Plan for their respective areas should be identified as a high priority, short-term program in the General Plan 2040. The General Plan 2040 Neighborhood Element will incorporate these programs.

Regional Housing Needs Allocation

As the San Francisco Bay Area's regional agency, MTC/ABAG calculates the RHNA for jurisdictions in Marin County, including San Rafael. Table 4.14-2 shows the RHNA for the current planning period, which is the number of housing units the city of San Rafael would need to accommodate by 2023. As shown in Table 4.14-2, the housing unit allocations are categorized by household size and income. The household income categories are as follows:

- Very Low Income: Households making less than 50 percent of the are median income.
- Low Income: Households making between 50 and 80 percent of the area median income.
- Moderate Income: Households making between 80 and 120 percent of the area median income.
- Above Moderate Income: Households making more than 120 percent the area median income.

Household median income is calculated based on household size. In 2014 the median income for a single-person household was $72,100. The median income for a family of three in 2014 was $92,700, and the median income for a family of six in 2014 was $119, 500.

TABLE 4.14-3 SAN RAFAEL REGIONAL HOUSING NEEDS ALLOCATION

	Dwelling Units by Income Category				
RHNA Planning Period	Very Low Income	Low Income	Moderate Income	Above Moderate Income	Total
2015 to 2023	240 [a]	148	181	438	1007

Notes:
[a] 120 of these are designated for "Extremely Low Income"
Source: City of San Rafael 2015-2023 Housing Element Update.

4.14.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would result in significant population and housing impacts if it would:

1. Induce substantial unplanned population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.
3. Result in cumulative impact related to population and housing.

4.14.3 IMPACT DISCUSSION

POP-1	**Implementation of the proposed project could induce substantial unplanned population growth either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).**

General Plan 2040

As described in Chapter 3, Project Description, of the Draft EIR, the proposed General Plan 2040 is a high-level policy document that will replace the existing General Plan 2020 as the city's overarching policy document that defines a vision for future change and sets the "ground rules" for growth. The proposed General Plan 2040 considers growth over a 20-year period but does not include specific development proposals. The General Plan is the policy document that projects the amount of reasonably foreseeable growth given past growth trends and the ability of existing services and infrastructure to support future growth. Potential future development in the city is projected to occur primarily in TPAs and PDAs on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, and in areas with close proximity to public transportation. Given that future growth would occur in areas currently served by public services and infrastructure, implementation of the proposed General Plan 2040 would require less investment in infrastructure than if development was to occur on "greenfield" sites. Therefore, the proposed General Plan 2040 would not induce substantial, unplanned population growth directly or indirectly in any particular location but instead includes policy guidance for expected incremental growth through 2040.

The EIR Study Area has a population of approximately 75,751 with 29,529 housing units as of 2020. The proposed General Plan 2040 estimates an overall increase of 4,460 housing units and 8,910 residents in the EIR Study Area by 2040. This equates to a 15 percent increase in housing units and a 12 percent increase in total population over the 20-year horizon of the proposed General Plan. However, approximately 20 percent of the total 4,460 housing units anticipated by 2040 are units already accounted for in the City's development pipeline, including projects that are under review or approved. Approximately 23 percent of this residential growth would come from the city's 2015-2023 RHNA allocation of 1,007 units, which is growth dictated by the California Housing Law and not by the City. Moreover, the city's preliminary RHNA for 2023–2031 is nearly 3,000 units, indicating the need to plan for development that exceeds the *Plan Bay Area* 2040 housing forecasts. As shown in Table 4.14-2, regional projections for San Rafael anticipate a 9 percent increase in housing units and an 16 percent increase in population, and development potential under the proposed General Plan 2040 would result in a 15 percent increase in housing units and a 12 percent increase in total population. Therefore, implementation of the proposed General Plan 2040 would slightly exceed current regional projections for

housing by 6 percent based on these factors alone. By comparison, total population is anticipated to be 4 percent below regional projections due to differing household sizes. Potential future development would primarily occur as infill development in designated PDAs and TPAs, which is consistent with the infill focus of *Plan Bay Area.* Therefore, implementation of General Plan 2040 itself would not introduce a substantial number of unplanned population in the EIR Study Area and is instead the overriding policy document that plans for such growth. Furthermore, the revised growth projections from General Plan 2040 will be integrated into the next round of regional growth projections. At the time the proposed General Plan 2040 was being drafted, *Plan Bay Area* projections through 2050 were being updated but the data were unavailable.

As determined in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, there are no existing infrastructure deficiencies identified in the EIR Study Area, and no future deficiencies are likely to occur as a result of the growth anticipated in the proposed General Plan 2040. Further, Chapter 4.15, Public Services and Recreation, of this Draft EIR determined that population growth as a result of implementation of the proposed General Plan 2040 would not result in a public service deficiency or necessitate the construction of new emergency service facilities. All potential future development would be required to comply with any required site-specific infrastructure improvements and to pay any project-specific impact fees. Therefore, implementation of the proposed General Plan 2040 would not induce substantial unplanned population growth and would not necessitate the construction of additional infrastructure, and the impact is *less-than-significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

A total of 49 percent of the housing units and population growth by 2040 is expected in the Downtown Precise Plan Area, including an estimated 2,200 housing units and 3,570 residents. Existing development includes 1,571 housing units and 2,315 residents within the Downtown Precise Plan Area. As discussed above, growth in the EIR Study Area was projected in *Plan Bay Area* and includes the growth in the Downtown Precise Plan Area. While half the anticipated growth in the EIR Study area is anticipated in the Downtown Precise Plan Area, the Downtown Precise Plan is almost entirely within the Downtown San Rafael PDA and TPA which, as described, are areas of the city that are served by local and regional public transportation. As shown in Table 4.14-2, *Plan Bay Area* projected growth of 815 housing units and 2,160 residents in the Downtown San Rafael SMART Station PDA alone, which exceeds the growth allowed in the proposed Downtown Precise Plan. However, as identified, areas designated a PDA or a TPA by *Plan Bay Area* are expected to absorb the majority of future residential development in the Bay Area due to their proximity to public transportation and such growth in the Downtown Precise Plan Area would not be entirely unexpected or unplanned. Development in the PDA is consistent with the regional planning objectives established for the Bay Area. Further, this additional growth would come incrementally over a period of approximately 20 years and a policy framework is in place to ensure adequate planning occurs to accommodate it.

Therefore, implementation of the proposed Downtown Precise Plan would not induce substantial unplanned population growth in the Downtown Precise Plan Area, and same as the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

POP-2 Implementation of the proposed project could displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

General Plan 2040

Implementation of the proposed General Plan 2040 would result in an increase of 4,460 housing units in the EIR Study Area over a 20-year horizon. As identified in Impact Discussion POP-1, approximately 20 percent of the total 4,460 housing units anticipated by 2040 are units already accounted for in the City's development pipeline because they have been approved or are under project review. Potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development, and would therefore not necessitate future infrastructure improvements. Because potential future development of housing units could occur through redevelopment activities, it is possible that construction activities could displace an unknown amount of existing residents or housing. Further, it is possible that potential future nonresidential development could displace existing residential development through conversions or redevelopment.

The proposed General Plan 2040 includes the Equity, Diversity, and Inclusivity (EDI) Element and the Housing (H) Element, both of which contain goals, policies, and programs addressing residential displacement in the EIR Study Area. The following goals, policies, and programs would reduce the amount of displacement that could occur in the EIR Study Area:

Goal EDI-3: Housing Stability. Improve housing stability for all San Rafael residents, particularly those with low or very low incomes.

- Policy EDI-3.1: Preventing Displacement. Prevent the displacement of lower income residents from their homes due to rising costs, evictions without cause, and other economic factors that make it difficult for people to stay in San Rafael.
  - Program EDI-3.1A: Anti-Displacement Strategies. Evaluate anti-displacement strategies in future plans or programs that could result in the direct removal of affordable housing units, the displacement of tenants, or economic hardships due to rapid rent increases
  - Program EDI-3.1B: Renter Protection Measures. Continue to explore and promote measures to protect San Rafael renters and facilitate positive communication between landlords and tenants.

Goal H-2: A Diverse Housing Supply. It is the goal of San Rafael to have an adequate housing supply and mix that matches the needs of people of all ages, income levels, and special requirements.

- Policy H-7: Protection of the Existing Housing Stock. Continue to protect existing housing from conversion to nonresidential uses. Ensure that affordable housing provided through government subsidy programs, incentives, and deed restrictions remains affordable over the required time period, and intervene when possible to help preserve such housing.

- Program H-7B: Preserving Existing Rental Housing Affordable to Low Income Households At Risk of Conversion. Eight assisted rental projects in San Rafael (totaling 291 units) are technically at-risk of conversion to market rate prior to 2025. However, all eight projects are owned and managed by non-profit organizations with a public purpose to maintain affordable housing for low income and special needs populations. The majority of these developments receive Federal and State funding, rather than local funding, and therefore are not subject to the City's rent and income monitoring requirements. The City will however monitor each project's potential affordability expiration, and contact the non-profit owners within one year of the expiration date to address any future loss of funding which may put these units at risk.
- Program H-7C: Preserving Existing Rental Housing Affordable to Low Income Households through Ongoing Affordability Restrictions. The City of San Rafael and the former Redevelopment Agency is responsible for the annual monitoring of over 1,400 units in forty one publicly and privately owned rental developments. In addition, City policies have resulted in the development of 115 affordable ownership units. All of these rental and ownership units have long term affordability covenants.
- Program H-7D: BMR Resale Regulations. Continue to require resale controls on ownership Below Market Rate (BMR) units to assure that units remain affordable to very low, low, and moderate-income households. Continue to monitor database with Marin Housing.
- Program H-7E: Retention of Mobilehomes and Preservation of Existing Mobilehome Sites. Retain where possible this type of housing, which includes the 400-home Contempo Marin and the 30-home B-Bar-A mobilehome park, and its affordability by continuing to implement the Mobilehome Rent Stabilization Ordinance. Mobilehomes typically provide lower cost housing by the nature of their size and design.

Potential future development as a result of implementation of the proposed General Plan 2040 is anticipated to increase density and utilization of infill or underutilized sites in existing urban areas in the EIR Study Area. Therefore, redevelopment could potentially result in temporary displacement of people. However, displacement in the EIR Study Area would only be considered substantial in cases where major development such as a freeway or a large-scale redevelopment would result in the displacement of large amounts of existing housing. While the proposed General Plan 2040 does focus on infill development which may occur as redevelopment, the proposed General Plan does not include any large-scale development that would be considered to result in substantial displacement of existing housing. Further, redevelopment in the EIR Study Area would occur on sites that are vacant and/or underutilized, and small levels of displacement that may occur would be addressed through compliance with proposed goals, policies, and programs. Therefore, any potential displacement of persons in the EIR Study Area would not be substantial in number, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As described in Chapter 3, Project Description, of this Draft EIR, approximately half of the development anticipated in the EIR Study Area by 2040 would occur in the Downtown Precise Plan Area. Because the Downtown Precise Plan Area is urban and largely built out, it is anticipated that this increase in housing units would occur primarily through redevelopment or infill development on vacant and/or underutilized

sites. While potential future development in the Downtown Precise Plan Area could result in the temporary displacement of persons on a project site, the proposed Downtown Precise Plan would not result in large-scale redevelopment projects that would cause substantial displacement. Similar to the proposed General Plan 2040, short-term displacement that may occur in the Downtown Precise Plan Area would be addressed through compliance with proposed goals, policies, and programs, and therefore impacts would be *less than significant*. Moreover, Chapter 7 of the Downtown Precise Plan is an "anti-displacement strategy" that includes specific measures to minimize displacement and provide new housing opportunities for persons living in Downtown San Rafael.

Significance without Mitigation: Less than significant.

POP-3 Implementation of the proposed project could result in a cumulatively considerable impact to population and housing.

The context for the cumulative population and housing impacts would be potential future development under the proposed project combined with development on lands adjacent to the city. As described in Impact Discussions POP-1 and POP-2, implementation of the proposed project would not induce a substantial amount of unplanned population growth or growth for which inadequate planning has occurred, or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. The proposed and existing General Plan goals, policies, and programs, and implementing Zoning Ordinance would provide adequate planning to accommodate the proposed new increase in growth in the study area. Therefore, the proposed project would not result in a cumulatively considerable impact to mineral resources and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

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4.15 PUBLIC SERVICES AND RECREATION

This chapter describes existing public services, parks, and recreation within the Environmental Impact Report (EIR) Study Area and evaluates the potential environmental consequences of potential future development that could occur by adopting and implementing the proposed project. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts.

4.15.1 FIRE PROTECTION SERVICES

4.15.1.1 ENVIRONMENTAL SETTING

This section describes regulations, resources, facilities, equipment, response times, and budget for fire protection services. The analysis in this section is based on the *Community Services Background Report: San Rafael General Plan 2040* prepared by the San Rafael Community Development Department in February 2020. Information was provided through correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and Deputy Fire Chief Robert Sinnott.

Regulatory Framework

State Regulations

California Government Code

Section 65302 of the California Government Code requires General Plans to include a Safety Element, which must include an assessment of wildland and urban fire hazards. The Safety and Resilience Element of the existing General Plan 2020 and the proposed General Plan 2040 satisfies this requirement.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education.

California Building Code

The State of California provides a minimum standard for building design through Title 24 of the California Code of Regulations (CCR), commonly referred to as the California Building Code (CBC). The CBC is in Part 2 of Title 24. The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local City building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the installation of sprinklers in all high-rise buildings and other facilities; the establishment of fire resistance standards for fire doors, building materials, and particular types of

construction in high fire hazard severity zones; requirements for smoke-detection systems and exiting requirements; and the clearance of debris.

California Fire Code

The California Fire Code incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. The California Fire Code is the official fire code for the State of California (State) and all political subdivisions. It is found in Title 24 of the CCR, Part 9, and, like the CBC, it is revised and published every three years by the California Building Standards Commission. Also like the CBC, the California Fire Code is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions.

The California Fire Code is a model code that regulates minimum fire safety regulations for new and existing buildings, facilities, storage, and processes, including emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire-resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Unified Hazardous Waste and Hazardous Materials Management Program

The routine management of hazardous materials in California is administered under the Unified Hazardous Waste and Hazardous Materials Management Program (Unified Program). San Rafael's hazardous materials programs are administered and enforced under the Unified Program. The California Environmental Protection Agency has granted the City's responsibilities to the Marin County Department of Public Works, Waste Management Division, including implementation and enforcement of hazardous material regulations under the Unified Program as a Certified Unified Program Agency.

Local Regulations

Marin County Code of Ordinances

The Marin County Code of Ordinances (MCCO) is organized by title, chapter, and section. It contains all ordinances for the County. Most provisions relating to fire protection services are included in Title 16, Fire, which establishes the jurisdiction of the Marin County Fire Department (MCFD). Services of the MCFD include response to all types of fires and other emergencies in County unincorporated areas, fire prevention, investigation, emergency medical services, and management of the wildland-urban interface, including areas within the EIR Study Area. Title 16, Fire, of the MCCO includes the following two chapters related to adoption and amendments to adopted codes:

- Chapter 16.16: Adoption of California Fire Code and International Fire Code, which adopts prescriptions regulating governing conditions hazardous to life and property from fire or explosion. This includes the 2019 Fire Code, which consists of portions of the 2018 International Fire Code as amended by the California Building Standards Commission.

- Chapter 16.17: Urban-Wildlife Interface Code, which adopts the 2003 edition of the International Urban-Wildland Interface Code. This code governs the mitigation of wildfire hazards to life and property from the intrusion of fire from wildland exposures.

MCCO Title 19, Marin County Building Code, adopts the 2019 CBC and the 2018 International Building Code to promote healthy, safe, and sustainable communities. Title 19 includes building regulations related to the fire resistance of buildings.

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to fire protection are primarily in the Housing, Economic Vitality, Circulation, and Safety and Resilience Elements. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of updated goals, policies, and programs is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.15.1.4, Impact Discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives pertaining to fire protection. The SRMC is organized by title, chapter, and section. Most provisions related to fire protection are included in Title 4, Fire. Title 4 adopts the 2016 California Fire Code and the 2015 International Fire Code for the purpose of prescribing regulations governing conditions hazardous to life and property from fire or explosion, those certain codes which contain building standards and fire safety standards. A number of local amendments to the California Fire Code have been adopted in the SRMC, including requirements for properties in the wildland-urban interface, vegetation clearance standards, prohibitions on parking on private access ways, requirements for visible address numbers on all buildings, and requirements for hydrant upgrades. The SRFD typically calculates required fire flow in accordance with Uniform Fire Code and Insurance Services Office guidelines. Peak-load requirements vary based on building construction, size, type and location, and may be modified by the addition of fire alarm or sprinkler systems.

Essential Public Safety Facilities Strategic Plan

The *San Rafael Essential Public Safety Facilities Strategic Plan* (EPSFSP), adopted by the City Council in July 2015, provides guidance on future replacement, or the seismic upgrading, of the City's essential facilities, including fire stations, to ensure that the essential facilities within the city are capable of serving the citizens in the event of an emergency. The EPSFSP includes suggested improvements, estimates of costs, design and construction schedules, and identifies a range of funds for the implementation of the EPSFSP. The EPSFSP outlines several major projects recommended for either replacement or renovation, which have largely been completed or are under construction. The EPSFSP is a tool in prioritizing and informing the capital development decisions funded through the Measure E sales tax initiative. New and upgraded facilities as a result of the EPSFSP are described in Section 4.15.1.2, Existing Conditions.

4.15.1.2 EXISTING CONDITIONS

The analysis in this section is based on the *Community Services Background Report: San Rafael General Plan 2040* prepared by the San Rafael Community Development Department in February 2020. Information was provided through correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and Deputy Fire Chief Robert Sinnott.

Service

Fire services in the EIR Study Area are provided jointly by the SRFD, MCFD, and CAL FIRE. The SRFD provides fire protection within the city limits, as well as primary fire protection to the unincorporated neighborhoods of Country Club, Bayside Acres, Los Ranchitos, the small area adjacent to the Mount Tamalpais Cemetery in Sun Valley, California Park, and Santa Venetia. SRFD additionally serves as the primary fire department for the Marinwood Community Services District, in addition to providing paramedic services to unincorporated areas within the EIR Study Area via a joint powers agreement with the County of Marin. Fire departments across Marin County have joint powers agreements and standard mutual aid agreements with one another to increase aid during fire emergencies across the county. San Rafael Fire provides initial fire attack and medical rescue service for China Camp State Park, which is in the eastern portion of the EIR Study Area. MCFD responds to major incidents in the State Park and takes control upon response.[1]

Refer to Chapter 4.18, Wildfire, of this Draft EIR for detailed information on fire hazard severity zones, the wildland-urban interface, and wildfire prevention within the EIR Study Area.

Staffing and Responsibility

Preventing and extinguishing structural fires, protecting life and property safety, and reducing fire losses is an essential part of SRFD's mission. The SRFD employs a total of 69 uniformed emergency personnel, in addition to one fire chief, two administrative staff, one emergency manager, one household hazardous waste coordinator, and four part-time inspectors. The SRFD includes a Fire Prevention Bureau that issues fire permits for construction, operations, and inspections, as well as manages the City's Vegetation Management Program, which was designed in cooperation with local businesses and homeowners to ensure vegetation is adequately cleared to reduce fire risks throughout the EIR Study Area. The SRFD Fire Marshal works closely with the City's Code Enforcement Officer and inspectors to ensure all structures meet California Fire Code standards. The SRFD also provides fire response and rescue services for both urban and wildland fires within the county.

Water Supply

The City's development review process requires consultation with the Marin Municipal Water District (MMWD) to ensure adequate water supply necessary for a fire emergency. The City maintains local hydrants while the MMWD is responsible for fire flow. SRFD typically calculates required fire flow in accordance with Uniform Fire Code and Insurance Services Office guidelines. Peak load requirements vary

[1] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.

based on building construction, size, type, and location, and may be modified by the addition of fire alarm or sprinkler systems. Fire flow requirements are met in most of the EIR Study Area; deficient areas are identified by the MMWD Engineering Department, ranked along with others in the service area, and scheduled for upgrade based on need and funding availability.[2]

Hazardous Materials Services

As described in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, San Rafael's hazardous materials programs are administered and enforced under the Unified Program. The California Environmental Protection Agency has granted San Rafael's hazardous materials responsibilities to the Marin County Department of Public Works Waste Management Division, which includes implementation and enforcement of hazardous material regulations under the Unified Program as a Certified Unified Program Agency.

The SRFD holds responsibility for monitoring the storage and use of hazardous materials, including inspections of businesses. SRFD issues permits for hazardous materials use and requires a written Hazardous Materials Management Plan as part of each development permitting process. Each Hazardous Materials Management Plan must demonstrate the safe storage and handling of hazardous materials during both construction and operation of a development project.

The Marin Household Hazardous Waste Facility (MHHWF), located at 565 Jacoby Street in San Rafael, provides a hazardous material drop-off location for all residents that reside in, and all businesses located in, Marin County. The MHHWF is jointly operated by the SRFD and Zero Waste Marin. Through this partnership, San Rafael and Zero Waste Marin manage the MHHWF program for every city in the county except Novato.

Paramedic Services

In San Rafael, every SRFD firefighter is a certified Emergency Medical Technician. The number has increased over time, in response to population growth and increased demand and at this time there is no deficiency in paramedic services. Currently, 62 of the 69 uniformed SRFD uniformed firefighting staff are Paramedic certified and the remaining seven are certified Emergency Medical Technicians. Each ambulance has two paramedics, and each engine or ladder truck has at least one paramedic on duty at all times. Thus, on each medical call at least three paramedics are on scene (an engine or ladder plus an ambulance).[3]

Emergency Preparedness

The City's Emergency Services Coordinator is responsible for managing the City's *Local Hazard Mitigation Plan* (LHMP) and enforcing the Marin County *Emergency Operations Plan* (EOP), described in further detail in Chapter 4.9, Hazards and Hazardous Materials, and in Chapter 4.18, Wildfire, of this Draft EIR. While the LHMP is administered at the local level, the EOP was developed and is administered at a

[2] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.
[3] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.

countywide level by the Marin County Office of Emergency Services, with the City's Emergency Services Coordinator serving as the local point of contact.

Call Volume

During calendar year 2019, the SRFD responded to 27 residential structure fires and 27 non-residential structure fires. The SRFD also responded to 22 vehicle fires, 16 outdoor property fires, 16 wildland fires, and 28 dumpster/rubbish fires. In the EIR Study Area, there were a total of 10,980 calls for service, including 7,048 for rescue, emergency medical services (EMS), ambulances, and similar services. There were also 664 false alarms, 39 mutual-aid responses, 185 hazardous response incidents, and 2,885 other miscellaneous incidents (e.g., animal rescue, smoke).

The national Insurance Services Office (ISO) provides a rating system to evaluate fire protection services in over 39,000 fire protection areas in the United States. The ratings are used in the insurance industry to calculate premiums for homes and business properties. The ratings range from 1 to 10, and the SRFD is rated Class 1, representing superior fire protection.[4] The SRFD currently conforms to the response time goal to be on scene within 5 to 7 minutes following a call for service, 90 percent of the time, established by the National Fire Protection Association Standard 1710.[5] New equipment and vehicles are periodically acquired to meet these standards, replace aging equipment, and obtain new technology.

Equipment and Facilities

As shown on Figure 4.15-1 and listed in Table 4.15-1, San Rafael has six existing fire stations, many of which have undergone major rehabilitation or have been fully replaced in recent years due to aging buildings and insufficient space. This work has been carried out under the EPSFSP. By 2020, the City had completed construction on three of the six SRFD projects outlined in the EPSFSP, including rebuilding of the Station 52 training center just outside the eastern boundary of the Downtown Precise Plan Area; completion of the new Station 57 adjacent to the Marin County Civic Center; and completion of Station 51, the City's Public Safety Center located in the Downtown Precise Plan Area. Station 54 located in the Canal Neighborhood and Station 55 located on the eastern portion of the city limits along Point San Pedro Road are scheduled for seismic and operational upgrades. Station 56 located in the Terra Linda neighborhood in northern San Rafael was constructed in 1996 and requires minor seismic, accessibility, and operational improvements, which are planned as part of the EPSFSP if funds remain after the completion of the Station 54 and Station 55 enhancements.

[4] https://www.isomitigation.com/ppc/program-works/, assessed on 10/29/2020.
[5] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.

TABLE 4.15-1 FIRE STATIONS IN SAN RAFAEL

Station Number	Address	Year Constructed or Renovated
Station 51 (Public Safety Center)	1375 Fifth Avenue	2020
Station 52 (Training Center)	52 Union Street	2019
Station 54	46 Castro Avenue	1964
Station 55	955 Point San Pedro Road	1966
Station 56	650 Del Ganado Road	1996
Station 57	3530 Civic Center Drive	2019

Note: The City of San Rafael also staffs the Marinwood Fire Station (Station 58) at 777 Miller Creek Road
Source: City of San Rafael Fire Department, 2020, https://www.cityofsanrafael.org/fire-stations/.

The SRFD administrative facilities are located within the Marin County office building, located at 1600 Los Gamos Drive in San Rafael. The building also houses the County Fire and Sheriff's offices, including the Regional Dispatch Center, which includes the SRFD.

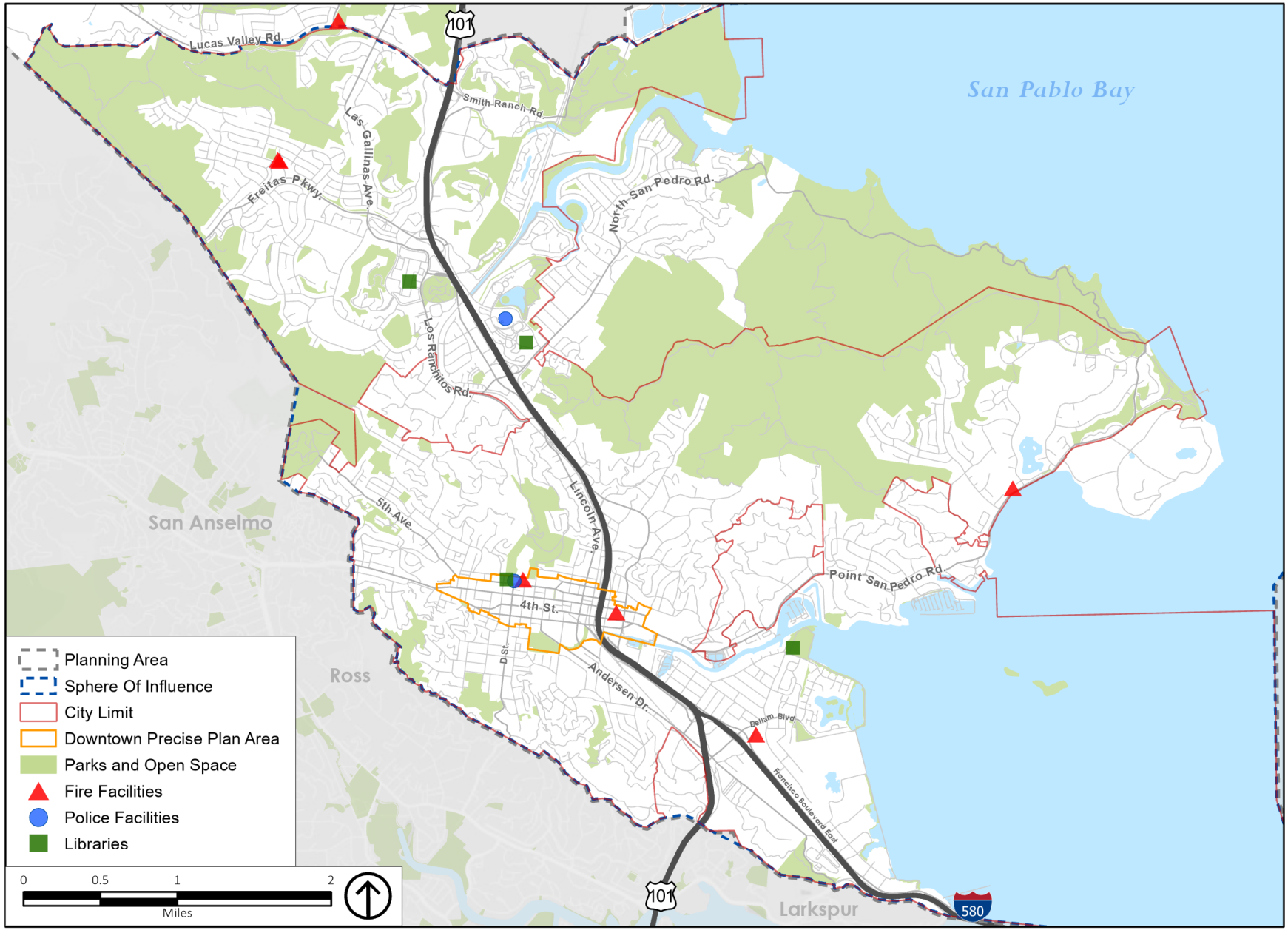
Budget

The San Rafael Municipal General Fund supports essential City services, including fire protection and hazardous materials management. In fiscal year 2019 to 2020, fire services accounted for roughly 24 percent of the City's Municipal General Fund expenditures, which included funding for employee salaries, purchasing of fire suppression equipment, and various other basic funding needs.[6] The City does not collect development impact fees for public safety facilities but does require developer improvements such as road widening and hydrants.

An annual $75.00 fire-flow parcel tax was approved by voters in 1996 to raise funds to improve fire flow and ensure the integrity of the water transmission system. In 2012, this fee was extended through 2031, allowing for the replacement of inadequate pipes as well as seismic improvements.

The City established the Essential Facilities Capital Projects Fund under Measure E, which was passed by voters in San Rafael in November 2013, to fund and implement the EPSFSP. This accounts for all major capital improvements to public safety facilities. The approval of Measure E in November 2013 extended an existing 0.5 percent transactions and use tax and added 0.25 percent sales tax for an additional 20 years. The new tax went into effect in April 2014. In anticipation of the additional revenue, the City Council directed staff in February 2014 to set aside the revenues from the added 0.25 percent tax to begin addressing the City's aging essential facilities, including critical improvements to public safety. Measure E revenues have raised approximately $3.7 million per fiscal year, which has been the source of funding for each essential facility upgrade since Measure E passed in 2013.

[6] City of San Rafael, 2019, Comprehensive Annual Financial Report for the Fiscal Year Ending June 30, 2019, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/11/2019-Comprehensive-Financial-Audit-Report.pdf, accessed on March 25, 2020.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.15-1
Public Services and Facilities Locations

4.15.1.3 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project would have a significant impact related to fire protection services if it would:

1. Result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.
2. Result in significant cumulative impacts with respect to fire protection services.

4.15.1.4 IMPACT DISCUSSION

PS-1	**Implementation of the proposed project could result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

General Plan 2040

Potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Such locations are currently served by the SRFD and potential future development or redevelopment in the EIR Study Area is not anticipated to expand SRFD's service area, which could increase response times or disrupt other performance objectives.

Buildout of the proposed General Plan 2040 is projected to occur over a 20-year horizon. An increase in demand for fire protection services would be incremental and is in line with anticipated population growth, which would also occur without adoption of the proposed General Plan 2040. All potential future development would be accommodated as needed by the SRFD, MCFD, and CAL FIRE, with response from other city and county jurisdictions under joint powers agreements, as needed. Because potential future development would occur in existing urban areas serviced by the SRFD, and because implementation of the proposed General Plan 2040 would occur over time and not all at once, the SRFD is expected to be able to maintain a Class 1 ISO rating despite the anticipated growth.

As described in Section 4.15.1.2, Existing Conditions, the City of San Rafael has been actively renovating existing and/or constructing new SRFD facilities, as outlined in the adopted EPSFSP. The EPSFSP identified deficiencies in public service facilities in the EIR Study Area and created a blueprint for the upgrading of those facilities to meet increased demand as the population increases. At the time this Draft EIR was drafted, three of the six facility upgrades identified in the EPSFSP had been completed, including the renovation of the Station 52 training center, the construction of the new Station 57, and the construction of the Station 51 Public Safety Center. The remaining three facilities included in the EPSFSP are existing

facilities that are identified as requiring seismic safety and other renovations, which will increase the service life of the buildings. If applicable, renovation activities as part of these projects would undergo review under CEQA prior to construction. Further, no construction of additional facilities is proposed as part of the General Plan 2040. Therefore, the existing fire facilities in the EIR Study Area, including the planned renovations of existing facilities, are adequate to meet the needs of the growing population and implementation of the proposed General Plan 2040 would not result in the need for new or physically altered fire protection facilities.

According to the SRFD, existing equipment and staffing levels would be adequate to accommodate growth anticipated under the proposed General Plan 2040 aside from the need for additional ambulance vehicles to meet an increase in emergency medical services demand. This is based on call trends that continue to show an increase in medical calls compared to others. Additionally, the Department continues to research an expansion of the ambulance program to include both advanced life support (ALS) paramedic ambulances and basic life support (BLS) ambulances staffed with emergency medical technicians (EMT's) This would increase the availability of the ALS ambulances for more critical emergencies. Procurement of additional ambulance vehicles and other vehicles and equipment would occur as needed through the City's annual budgeting process, which financially supports the procurement of needed equipment.[7]

The proposed Community Services and Infrastructure (CSI) Element contains goals, policies, and programs that require local planning and development decisions to consider and mitigate impacts that potential future development could have on public service facilities. The following goals, policies, and programs would serve to reduce impacts to public service facilities and services in the EIR Study Area:

Goal CSI-3: Exceptional Public Safety Services. Provide and maintain exceptional fire, public safety, and paramedic services.

- Policy CSI-3.1: Investment in Public Safety Services. Maintain cost-effective police, fire protection, and paramedic facilities, equipment, and services. Manage increases in costs through effective preventative measures, such as fire prevention and community policing.
  - Program CSI-3.1B: Capital Facilities. Complete improvements to essential public safety facilities made possible by voter-approved measures. Conduct periodic evaluations of facility and technology needs in the future to ensure that the Police and Fire Departments are equipped to respond to emergencies and deliver quality services.
  - Program CSI-3.1D: Vehicle and Equipment Maintenance. Maintain and upgrade vehicles and equipment as necessary.
- Policy CSI-3.2: Mitigating Development Impacts. Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public safety, fire prevention, and emergency access and response needs are considered and effectively addressed.
  - Program CSI-3.2B: Emergency Response Time. Use the development review process to identify appropriate measures to reduce fire hazards and ensure adequate emergency response capacity.

[7] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.

- Policy CSI-3.6: Mutual Aid. Maintain mutual aid agreements for police and fire service with other jurisdictions and community service districts to ensure that the capacity exists to adequately respond to local emergencies.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.1: Capital Investment. Provide for ongoing, preventative maintenance of infrastructure and timely replacement, repair, and upgrading of City equipment.
  - Program CSI-4.1A: Capital Improvement Programming. Maintain and regularly update a multi-year Capital Improvement Plan (CIP) covering City owned and operated infrastructure and public facilities. Seek the input of other local service providers (MMWD, LGVSD, etc.) when preparing the City's CIP and encourage these agencies to seek City input as they prepare their own CIPs.

Additionally, potential future development that may occur due to implementation of the proposed General Plan 2040 would be required to comply with Title 24 of the CCR and the City's Fire Code per SRMC Title 4, Fire Code. Compliance with the State's Title 24 and the City's Title 4 would ensure any new development proposed in the EIR Study Area meets the most current building and fire codes, thereby increasing safety of the buildings, and reducing the likelihood of a fire emergency, subsequently reducing demand on SRFD fire services.

The addition of the City's Public Safety Center and the recent reconstruction of Station 52 and the construction of the new Station 57, as well as the planned rehabilitation of Station 54 and Station 55, ensure that SRFD facilities are adequate to serve the anticipated buildout of the proposed General Plan 2040. Further, required compliance with State and local regulations for fire protection services, compliance with goals, policies, and programs, and the required fire department staff review of proposed development plans, would reduce any adverse impacts that potential future development could have on SRFD facilities. Additionally, SRFD has confirmed that facilities, staff, and equipment would be adequate to accommodate anticipated future growth. Additional ambulance coverage or a modification to the existing ambulance deployment program would continue to be researched by the SRFD, but no additional fire stations are planned at this time.[8]

In summary, because no new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives are required, impacts to the SRFD from the adoption and implementation of the proposed General Plan 2040, impacts are *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Like potential future development in the remainder of the city, potential future development in the Downtown Precise Plan Area would occur on a limited number of vacant parcels and in the form of

[8] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.

infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. The newly completed Public Safety Center Station 51, which includes fire facilities, is located in the northern portion of the Downtown Precise Plan Area, and would provide immediate response to calls from the Downtown Precise Plan Area. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to fire protection services. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to fire protection services; therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would also be *less than significant.*

Significance without Mitigation: Less than significant.

PS-2 Implementation of the proposed project could result in a cumulatively considerable impact to fire protection services.

As described in Section 4.15.1.2, Existing Conditions, the SRFD and other fire departments in Marin County provide services to each other as needed through joint powers agreements, automatic aid agreements, and mutual aid agreements.[9] As described in Impact Discussion PS-1, the SRFD, MCFD, and CAL FIRE, along with other county jurisdictions under the joint powers agreement, would be able to adequately serve future growth under the proposed project by existing and proposed staff, equipment, and facilities. In the event that the SRFD requires new equipment or staffing, the funds for such improvements would be provided through the annual budget process and would rely on the General Fund and other funding opportunities, such as State and federal grants.[10]As described in Impact Discussion PS-1, implementation of the proposed project would not create a need for new or physically altered facilities for the SRFD to provide fire protection services in the EIR Study Area. Compliance with State and local regulations, such as the proposed General Plan 2040 goals, policies, and programs listed in Impact Discussion PS-1, would ensure that fire protection services continue to adequately serve the EIR Study Area. Additionally, potential future development that may occur within and adjacent to the EIR Study Area would occur incrementally over the General Plan's 20-year buildout horizon, and therefore is not anticipated to substantially increase the population, thereby reducing the ability for fire districts and departments within the county to adequately serve residents. Further, because the proposed project is program level, and because potential future development would be required to undergo project review at the time of project application, each potential future development would be assessed for impacts to fire protection services. Therefore, the proposed project would not result in a cumulatively considerable impact to fire protection services and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

[9] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.
[10] Robert Sinnott, the Deputy Fire Chief of the San Rafael Fire Department (SRFD), November 2020.

4.15.2 POLICE SERVICES

4.15.2.1 ENVIRONMENTAL SETTING

This section describes regulations, resources, facilities, equipment, response times, and budget for police protection services. Information was provided through correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and Police Captain Glen McElderry, Chief Diana Bishop, Support Services Supervisor Charles Taylor, and Police Captain Dave Starnes, on January 30, 2020.

Regulatory Framework

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to police protection are primarily in the Safety and Resilience Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of updated goals, policies, and programs is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact in Section 4.15.2.4, Impact Discussion.

4.15.2.2 EXISTING CONDITIONS

The analysis in this section is based on the *Community Services Background Report: San Rafael General Plan 2040* prepared by the San Rafael Community Development Department in February 2020. Information was provided through a meeting and correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and San Rafael Police Department personnel, including Police Chief Diana Bishop, Captain Dave Starnes, Police Support Services Supervisor Charles Taylor, and Administrative Services Captain Glenn McElderry.

Service

Law enforcement services in the EIR Study Area are provided by the San Rafael Police Department (SRPD), the Marin County Sheriff's Office, and the California Highway Patrol. The SRPD has primary responsibility for areas within the City limits. The Marin County Sheriff's Office provides services to unincorporated neighborhoods within the EIR Study Area and the California Highway Patrol provides traffic enforcement in the unincorporated areas and on State and local freeways, including U.S. Highway 101 (US-101) and Interstate 580 (I-580) in the EIR Study Area. Mutual-aid agreements between these agencies allow for joint responses to major incidents.

Staffing

The national staffing average for cities with populations comparable to San Rafael is 16.1 sworn personnel per 10,000 residents and 20.7 total personnel per 10,000 residents.[11] SRPD has a total of 66 full-time sworn officers and 25 full-time non-sworn personnel, for a total staff of 91 persons.[12] This equates to 11.0 sworn officers per 10,000 residents[13] and 15.2 total personnel per 10,000 residents,[14] which is below the national staffing average for cities with populations of comparable size.

Department Organization

The SRPD is organized into two divisions, the Operations Division and Administrative Services Division. The Operations Division includes patrols, park rangers, downtown foot beats, and traffic enforcement. The Administrative Services Division includes records, dispatch personnel, training, crime prevention, community engagement, and detective units. Some police services are provided with field patrols on a geographic (or "beat") basis and other functions are organized on a citywide basis. Citywide services include crime prevention, investigations, community engagement, and traffic patrols.

Operations Division

The SRPD Operations Division provides uniformed police services 24 hours a day, including four patrol teams led by a single sergeant and supervised by two lieutenants, consisting of eight officers each. Two canine units and their partners are included on the teams. The patrols primarily engage in emergency response, crime suppression, traffic enforcement, and preliminary criminal investigation. A Special Operations Unit handles the Downtown Precise Plan Area, open space and marine areas, and street crimes. This unit includes the Downtown Footbeat team, the Ranger/Marine Program, the Street Crimes Unit, and Traffic Enforcement.

Administration Division

The SRPD Administration Division is responsible for recruitment, employment testing, background investigations, volunteers, the chaplain program, internal investigations, workers compensation claims, facility management, cost recovery, and crime analysis. Specific functions performed by the Administration Division include the Training Unit, the Criminal Investigations Unit, the Records Unit, the Dispatch Unit, the Property and Evidence Unit, and the Community Engagement Unit.

Call Volume

In 2019, SRPD received 21,735 calls to 9-1-1 and 76,874 administrative calls. This equates to an average of 1,035 calls to 9-1-1 a month or about 60 per day. In total, the SRPD receives between 800 and 1,000 calls a month. The SRPD received a total of 38,877 calls for service in 2019, which was a 0.2 percent decrease

[11] Governing, 2020, Police Employment, Officers Per Capita Rates for U.S. Cities, https://www.governing.com/gov-data/safety-justice/police-officers-per-capita-rates-employment-for-city-departments.html, accessed October 30, 2020.

[12] Diana Bishop, the Police Chief of the San Rafael Police Department (SRPD), November 2020.

[13] 59,800 current residents/10,000 = 5.98; 66 full-time sworn officers/5.98 = 11 full-time sworn officers to 10,000 residents.

[14] 59,800 current residents/10,000 = 5.98; 91 total staff/5.98= 15.21 total staff to 10,000 residents.

from 2018. As described in Section 4.15.1.2, Existing Conditions, for the Fire Protection Services, emergency calls are also responded to by the SRFD.

Equipment and Facilities

The SRPD headquarters is located at the newly completed Public Safety Center in the Downtown Precise Plan Area and the SRPD has two small field offices located in northern San Rafael and at the Albert Boro Community Center. The Public Safety Center is located across the street from the San Rafael City Hall and incorporates facility upgrades, including a temporary holding facility designed to separate detainees from civilian staff and expanded storage, evidence, crime lab, classroom, dispatch, and communication facilities. While the new Public Safety Center has been designed to meet the long-term needs of the SRPD, there is an ongoing need for training, new equipment and technology (including drones and automated license plate reader cameras), and resources to support crime prevention, response capacity, and investigations.[15]

Budget

The SRPD is funded by the City's Municipal General Fund, which supports essential City services such as police and fire protection, building and street maintenance, libraries, recreation, and parks and open space maintenance. Additional expenses are paid for by the Public Safety Fund, which is established for special police services and intended to be self-funding.[16] SRPD facilities, such as the new Public Safety Center project, are funded by Measure E funds, a 20-year sales tax extension, and increase approved by San Rafael voters in 2013.

4.15.2.3 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would have a significant impact related to police protection services if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.

2. Result in significant cumulative impacts with respect to police protection services.

[15] Glen McElderry, the Police Captain of the San Rafael Police Department (SRPD), November 2020.

[16] City of San Rafael, 2019, Comprehensive Annual Financial Report for the Fiscal Year Ending June 30, 2019, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/11/2019-Comprehensive-Financial-Audit-Report.pdf, accessed on March 25, 2020.

4.15.2.4 IMPACT DISCUSSION

PS-3	**Implementation of the proposed project could result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

General Plan 2040

Potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Such locations are currently served by the SRPD and potential future development or redevelopment in the EIR Study Area is not anticipated to expand SRPD's service area, which could increase response times or disrupt other performance objectives.

As described in Section 4.15.2.2, Existing Conditions, the new Public Safety Center was constructed to house several essential City facilities and includes a new police headquarters to replace the prior headquarters on the first floor of City Hall, which was inadequate to meet the needs of the SRPD. The Public Safety Center provides a facility that is adequate for both current and future needs of the SRPD. While, as discussed in Section 4.15.2.2, Existing Conditions, there is an ongoing need for training; new equipment and technology; and resources to support crime prevention, response capacity, and investigations, the current facilities are adequate to maintain acceptable service ratios, response times, or other performance objectives.

Buildout of the proposed General Plan 2040 is projected to occur over a 20-year horizon. While an increase in demand for police protection services would be gradual and is in line with incremental population growth, which would occur with or without adoption of the proposed General Plan 2040, the SRPD identified that their staffing level has substantially decreased since 2008–2009,[17]and an increase in population would result in a need for increased staffing. [18] As previously described, the SRPD staffing ratios for sworn officers to 10,000 residents and total staff to 10,00 residents is below the national staffing average (national average: 16.1 sworn personnel per 10,000 residents and 20.7 total personnel per 10,000 residents, compared to SRPD: 11 sworn officers per 10,000 residents[19] and 15.2 total personnel per 10,000 residents).[20]

As previously described, the SRPD is funded by the City's Municipal Fund and the Public Safety Fund, which potential future development would support through the payment of taxes and development fees, amongst other fees. Future development in San Rafael would be required to pay taxes and development

[17] Diana Bishop, the Police Chief of the San Rafael Police Department (SRPD), November 2020.

[18] Glen McElderry, the Police Captain of the San Rafael Police Department (SRPD), November 2020.

[19] 75,751 current residents/10,000 = 7.5751; 66 full-time sworn officers/7.5751 = 8.7 full=time sworn officers to 10,000 residents.

[20] 75,751 current residents/10,000 = 7.5751; 91 total staff/7.5751 = 12 total staff to 10,000 residents.

fees, amongst other fees, that would contribute to the Municipal Fund and Public Safety Fund to support the SRPD. Like the SRFD, procurement of additional police equipment would occur as needed through the City's annual budgeting process, which financially supports the procurement of needed equipment.

The proposed Community Services and Infrastructure (CSI) Element contains goals, policies, and programs that require local planning and development decisions to consider and mitigate impacts that potential future development could have on public service facilities. In addition to the goals, policies, and programs listed in Impact Discussion PS-1, the following policy and programs would serve to reduce impacts specific to SRPD facilities and services in the EIR Study Area:

Goal CSI-3: Exceptional Public Safety Services. Provide and maintain exceptional fire, public safety, and paramedic services.

- Policy CSI-3.1: Investment in Public Safety Services. Maintain cost-effective police, fire protection, and paramedic facilities, equipment, and services. Manage increases in costs through effective preventative measures, such as fire prevention and community policing.
  - Program CSI-3.1A: Police Department Strategic Plan. Develop a Strategic Plan for police services to evaluate trends, establish goals, prioritize future actions, determine budget needs, and align services with other City departments. The Plan should include a proactive response to issues related to social justice and compassionate law enforcement. Engage the community, including local businesses, in this process.
  - Program CSI-3.2A: Crime Prevention through Environmental Design. Design new public and private development to achieve "eyes on the street," including site planning, lighting, landscaping, and architectural design features that reduce the potential for crime.
- Policy CSI-3.4: Quality of Life Programming. Maintain programs to proactively address quality of life issues, such as peace disturbances, loitering, littering, and vandalism. Focus on personal contact with residents and businesses and build positive relationships with all segments of the community.

Consequently, compliance with local regulations, coupled with increased revenue to be generated by new development for investment in police staff and equipment, would enable continuation of current operating procedures. Because no new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives are required, impacts to the SRPD from the adoption and implementation of the proposed General Plan 2040, impacts are *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Like potential future development in the remainder of the city, potential future development in the Downtown Precise Plan Area would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. The SRPD provides police protection services in the entirety of the Downtown Precise Plan Area. The newly completed Public Safety Center is in the northern portion of the Downtown Precise Plan Area and houses the SRPD headquarters. The proposed

Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to police protection services. All potential future development would be required to comply with the proposed General Plan 2040 goals, policies, and programs listed above and would be required to comply with the same State and local regulations listed in Section 4.15.2.2. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

PS-4 Implementation of the proposed project could result in a cumulatively considerable impact to police services.

The geographic context for cumulative police service impacts would occur from potential future development within the EIR Study Area and adjoining jurisdictions. The 2040 General Plan does not include specific development projects, as it serves as a guide for future development in the City. Future development projects are currently and will continue to be assessed for impacts to police protection services.

It is unlikely that approval of the General Plan and certification of the EIR would immediately increase the degree or incidence of need for police protection services because anticipated growth under the proposed project is projected to occur incrementally throughout the 20-year buildout horizon. Additionally, compliance with the proposed General Plan 2040 goals, policies, and programs listed under Impact Discussion PS-3 would reduce the impact that potential future development could have on SRPD, the Marin County Sheriff Department, and the California Highway Patrol. Additionally, development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development and which are covered by existing police services. Therefore, the proposed project would not result in a cumulatively considerable impact to police protection services and cumulative impacts would be *less than significant*

Significance without Mitigation: Less than significant.

4.15.3 SCHOOLS

4.15.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

California Government Code, Section 65995(b), and Education Code Section 17620

Senate Bill (SB) 50 amended California Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess development fees

within school district boundaries. Government Code Section 65995(b)(3) requires the maximum square footage assessment for development to be increased every two years, according to inflation adjustments. According to California Government Code Section 65995(3)(h), the payment of statutory fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization...on the provision of adequate school facilities." The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Senate Bill 50

SB 50 (funded by Proposition 1A, approved in 1998) limits the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The current maximum allowable fee is $3.79 per square foot for residential development and $0.61 per square foot for commercial and industrial development. In setting the fees, school districts must prepare nexus studies to demonstrate a reasonable connection between new development and the need for school improvements. The fees may only be used to finance the construction or modernization of school facilities. The fee application level depends on whether State funding is available, whether the school district is eligible for State funding, and whether the school district meets certain additional criteria involving bonding capacity, year-round school, and the percentage of moveable classrooms in use.

Mitigation Fee Act (California Government Code 66000-66008)

Assembly Bill (AB) 1600, the Mitigation Fee Act, requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put.[21] The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied. This act became enforceable on January 1, 1989.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to schools are primarily in the Land Use, Neighborhoods, Parks and Recreation, Economic Vitality, and Governance Elements. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of updated goals, policies, and programs is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their

[21] California Legislative Information, California Law, Code Section Group, Government Code Sections 66000-66008, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=1.&title=7.&part=&chapter=5.&article= accessed on April 8, 2020.

effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.15.3.4, Impact Discussion.

4.15.3.2 EXISTING CONDITIONS

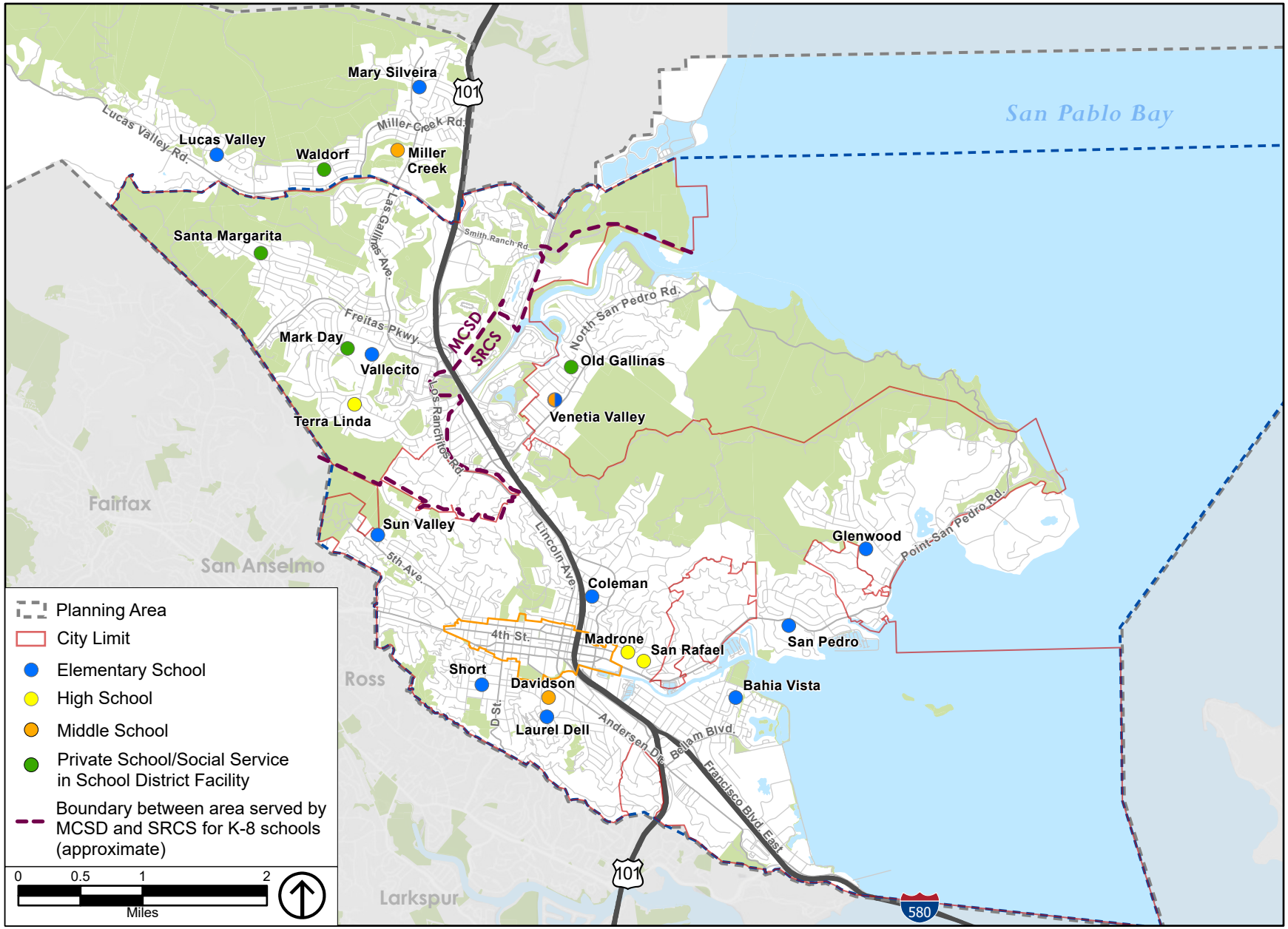
The analysis in this section is based on the *Community Services Background Report: San Rafael General Plan 2040,* prepared by the San Rafael Community Development Department in February 2020. Information was provided through correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and school district representatives, including Daniel Zaich, Senior Director of Capital Facilities at San Rafael City Schools, and Becky Rosales, Superintendent at Miller Creek School District (MCSD).

Overview

The EIR Study Area is served the San Rafael City Elementary School District, the San Rafael City High School District, and the MCSD, shown on Figure 4.15-2. The Downtown Precise Plan Area is served by the San Rafael City Schools (SRCS) districts. Under the San Rafael City Charter, SRCS includes a separate elementary school district and high school district, which accounts for two of the three school districts in the EIR Study Area. The SRCS elementary school district covers the southern portion of the EIR Study Area, while the SRCS high school district covers the entire EIR Study Area. Both districts also encompass portions of unincorporated Marin County.[22] Both the SRCS elementary and high school districts are governed by the same five-member Board of Trustees. The MCSD serves elementary and middle school students in the northern part of the EIR Study Area, including the unincorporated neighborhoods of Los Ranchitos, Lucas Valley, and Marinwood. Students graduating from MCSD middle schools populate high schools operated by SRCS.

The names, locations, and grades of each school in the three school districts are shown in Table 4.15-2. The 11 kindergarten through eighth-grade properties within the SRCS district include a cumulative total of 462,892 square feet of building space on about 75 acres of land. SRCS additionally owns two closed school campuses. One of the two closed campuses has been repurposed as a children's center and the other remains unoccupied. The three high schools operated by SRCS include a total of 487,783 square feet of building space on about 60 acres of land. Two of the high schools, San Rafael High School and Madrone Continuation School, share a campus to the east of the Downtown Precise Plan Area boundary. The SRCS corporation yard and maintenance building are also located on this campus. Terra Linda High School in northern San Rafael also houses the SRCS administrative offices. The MCSD office is in northern San Rafael, on a former elementary school site. Total enrollment for the 2018 to 2019 school year was 4,614 students for the SRCS elementary and middle schools, 2,640 students for the SRCS high schools, and 1,982 students for the MCSD elementary and middle schools. The total number of kindergarten level through twelfth-grade public school students in the EIR Study Area for the 2018 to 2019 school year was 9,236 students. These figures exclude students attending private schools.

[22] The SRCS Elementary School District also serves unincorporated neighborhoods, including Santa Venetia, Country Club, and Bayside Acres. It also serves San Quentin Village and a small portion of Larkspur. The High School District serves these areas and also serves Terra Linda, Marinwood, and other parts of northern San Rafael.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.15-2
School District Boundaries and Locations of Schools

TABLE 4.15-2 SAN RAFAEL SCHOOL DISTRICTS AND SCHOOLS

School Name	Location	Grade
San Rafael City Schools		
Bahia Vista Elementary School	125 Bahia Vista Way	K-5
Coleman Elementary School	800 Belle Avenue	K-5
Glenwood Elementary School	25 W Castlewood Drive	K-5
Laurel Dell Elementary School	225 Woodland Avenue	K-5
San Pedro Elementary School	498 Point San Pedro Road	K-5
Short Elementary School	35 Marin Street	K-5
Sun Valley Elementary School	75 Happy Lane	K-5
Davidson Middle School	280 Woodland Avenue	6-8
Venetia Valley School	177 N San Pedro Road	K-8
San Rafael High School	153 3rd Street	9-12
Madrone Continuation School	185 Mission Avenue	9-12
Terra Linda High School	320 Nova Albion Way	9-12
Miller Creek School District		
Vallecito Elementary School	50 Nova Albion Way	K-5
Mary Silveira Elementary School	375 Blackstone Drive	K-5
Lucas Valley Elementary School	1175 Idylberry Road	K-5
Miller Creek Middle School	2255 Las Gallinas Avenue	6-8
Waldorf School[a]	755 Idylberry Road	K-8
Mark Day School[a]	39 Trellis Drive	K-8
Santa Margarita School[b]	1055 Las Ovejas Avenue	K-8
Privately Owned Schools (partial list)		
Montessori Terra Linda School	610 Del Ganado Road	K-6
Saint Isabella School	1 Trinity Way	K-8
Saint Raphael School	1100 Fifth Street	K-8
Gate Academy	1 St. Vincents Drive	K-8
Marin Montessori Junior High	1 St. Vincents Drive	6-8
Marin Academy	1600 Mission Avenue	9-12
Brandeis Marin	180 North San Pedro Road	K-8

Notes:
a. This school is owned by the Miller Creek School District but is operated privately.
b. This school is a Children's Center owned by Miller Creek School District but is operated privately.
Source: City of San Rafael, 2020.

Enrollment Trends

Table 4.15-3 shows enrollment trends at SRCS elementary and high schools, and at MCSD schools between 2014 and 2019, which indicates enrollment has been stable at the elementary and middle school level and has gradually increased at the high school level. The number of students in the SRCS and MCSD elementary schools declined by less than one percent over the five-year period, while the number of high school students increased by 11.63 percent.

TABLE 4.15-3 SCHOOL ENROLLMENT BY DISTRICT, 2014 TO 2019

School Year	SRCS- Elementary and Middle School	SRCS- High School	MCSD
2014 to 2015	4,635	2,365	1,999
2015 to 2016	4,749	2,420	1,989
2016 to 2017	4,758	2,519	1,982
2017 to 2018	4,730	2,648	1,984
2018 to 2019	4,614	2,640	1,982
Percent Change	*-0.45 percent*	*+11.63 percent*	*-0.85 percent*

Source: California Department of Education Data Quest, 2020.

Facility Improvements and Funding

Facility conditions in both SRCS and MCSD schools were assessed through two plans, the *SRCS Master Facilities Plan*, and the *MCSD Facilities Master Plan*, prepared in 2014. The two facility plans evaluated the condition of each school facility, identified needs for replacement and modernization, as well as for administrative and operational space, common spaces, and space for students with special needs. Additional goals in sustainability, technology, efficiency, and equity were evaluated. An important objective of the two facility plans was to establish parity among schools and recognize that some schools may be in greater need of additional amenities and new facilities than others. The two facility plans provided the foundation for voter-approved bond measures that are now facilitating capital improvements in all three districts. The plans identified a number of ways to meet these costs, including local general obligation bonds, proceeds from State bonds, grants, developer fees, and other sources.

San Rafael City Schools

The *SRCS Master Facilities Plan* found that SRCS has the capacity for 4,755 students in 187 standard classrooms serving grades kindergarten through eighth grade and 2,244 students in 96 classrooms serving grades 9 through 12. Based on 2018 to 2019 school year enrollment numbers shown in Table 4.15-3, the elementary and middle schools are operating at slightly below capacity, while the high schools are operating above capacity. The *SRCS Master Facilities Plan* explored different options for balancing enrollment and expanding campuses to avoid overcrowding. Such options include reopening closed campuses, expanding existing schools, and shifting students between campuses.

In November 2015, SRCS placed measures on the San Rafael ballot to raise bond money needed to meet the needs identified by the *SRCS Master Facilities Plan*. Voters subsequently approved Measures A and B, which approved the funding. Measure A included $108 million for updates to the SRCS elementary and middle schools, while Measure B included $161 million for the SRCS high schools. Among the funded projects are new high school science labs, updated core academic facilities, new classrooms, dedicated art and music spaces, and upgraded technology infrastructure. As of January 2020, most of these projects have been completed, with the remainder expected to be finished by early 2021. A description of each school facility, including completed or overdue modernization, is provided in the *Community Services Background Report: San Rafael General Plan 2040.*

Miller Creek School District

The *MCSD Facilities Master Plan* includes an assessment of Mary Silveira, Vallecito, and Lucas Valley Elementary Schools, as well as Miller Creek Middle School. The *MCSD Facilities Master Plan* identifies the needs for each campus, and for MCSD as a whole. Districtwide needs include replacement clock, bell, intercom, and alarm systems, aging utility services, and outdated data networks and technology. Modernization programs in the early 2000s alleviated these deficiencies to some extent, but additional work was deemed necessary in the *MCSD Facilities Master Plan*. MCSD also has a large number of portable classrooms due to insufficient space.

In 2014, MCSD placed measures on the San Rafael ballot to raise bond money needed to meet the needs identified by the *MCSD Facilities Master Plan*. Voters subsequently approved Measure C to approve the funding. The measure authorized $30 million in general obligation bonds to address deficiencies identified in the *MCSD Facilities Master Plan*. Funds have been used to update aging classrooms technology, update middle school science classrooms, upgrade electrical wiring, improve campus safety and security, and generally upgrade campus and classroom facilities. A description of each school facility, including completed or overdue modernization, is provided in the *Community Services Background Report: San Rafael General Plan 2040.*

Student Generation Factors

Student generation rates (or "yields") are used by school districts to estimate the probable number of students in a "typical" single-family or multi-family home. This data is used to estimate the expected impact of new housing units on school enrollment, which in turn helps inform facility planning and fee collection. The rates are typically based on data for student yields from existing homes in each district or based on State standards. As shown in Table 4.15-4, multi-family housing in San Rafael yields nearly twice the number of students per unit as single-family housing. The number of students per dwelling unit in San Rafael averages roughly 0.3 students per unit, compared to a 0.7 statewide yield.

TABLE 4.15-4 STUDENT GENERATION FACTORS FOR SAN RAFAEL CITY SCHOOLS

	Single-Family Units (students per new unit)	Multi-family Units (students per new unit)
SRCS Elementary Schools (K–5)	0.1069	0.2273
SRCS Middle Schools (6–8)	0.0453	0.0980
SRCS High School (9–12)	0.0769	0.1108
Total	**0.2291**	**0.4361**

Source. City of San Rafael, 2020.

School Impact Fees

SRCS and MCSD collect development impact fees based on forecasts calculated with projected increments of residential growth within the EIR Study Area. Fees are collected for new residential units and for residential additions of 500 square feet or more, commercial and industrial development, as well as development of new hotels.

The fees collected by SRCS are split into elementary school fees and high school fees. As of 2018, the elementary and middle school fees for both SRCS and MCSD were $2.62 per square foot for residential development and $0.42 per square foot for commercial and industrial development. The SRCS development impact fee is reduced to $0.245 per square foot for hotels and motels, and $0.14 per square foot for self-storage. The high school fees are $1.17 per square foot for residential development, $0.19 per square foot for commercial and industrial development, $0.124 per square foot for hotels and motels, and $0.06 per square foot for self-storage.

The actual cost of constructing facilities to serve new students exceeds the amount that would be generated by these fees. Other funding sources, such as local bond measures and State grants, are often sought to cover capital costs. Moreover, student enrollment is dynamic and depends on many factors besides new construction. This is particularly true in San Rafael, where enrollment declined dramatically in the 1980s, even as housing construction was robust. Enrollment has increased since 2010, largely due to an increase in household sizes and not because of new construction.

Fee Justification Study

In a 2018 Fee Justification Study, SRCS applied the student generation rates shown in Table 4.15-4 to ABAG/MTC projected increments of growth between 2018 and 2040. The intention behind the Fee Justification Study is to project student enrollment increases to ensure adequate funding is secured to accommodate that increase. The Fee Justification Study for the SRCS high school district identified the potential for 2,350 new residential units citywide, including 966 single-family units and 1,384 multifamily units, which resulted in a projection of 227 new high school students.

For kindergarten through eighth grade students, SRCS identified the potential for 660 single-family and 946 multi-family units. The number of units is lower than the high school forecasts because K through 8 students in a portion of the city are served by the MCSD. The projections indicated 286 kindergarten through fifth grade students and 123 students in grades six through eight at SRCS schools. Applying the same multipliers to the portion of San Rafael in the MCSD yields 132 kindergarten through fifth-grade students and 62 students in grades six through eight in the MCSD.

4.15.3.3 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would have a significant impact related to public school services if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives for public school services.
2. Result significant cumulative impacts with respect to public school services.

4.15.3.4 IMPACT DISCUSSION

PS-5	**Implementation of the proposed project could result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

General Plan 2040

This section reviews the need for existing school facilities to accommodate any increases in public school enrollment due to implementation of the proposed General Plan 2040. However, the California State Legislature, under SB 50, has determined that payment of school impact fees shall be deemed sufficient to provide full and complete school facilities mitigation. All potential future developments proposed as a result of implementation of the proposed General Plan 2040 would be required to pay school impact fees adopted by each school district. Based on SB 50, this requirement would fully mitigate the impacts of the proposed General Plan 2040 on school facilities.

San Rafael City Schools

Implementation of the proposed General Plan 2040 is projected to generate approximately 4,460 housing units in the EIR Study Area. This could potentially result in an increase of 1,014 students in elementary schools and 437 students in middle schools, using the generation factors outlined in Table 4.15-4.[23] However, both SRCS and MCSD serve elementary and middle school students in the EIR Study Area, and they would subsequently split the share of this student increase. As shown in Table 4.15-3, School Enrollment by District 2014 to 2019, there are a total of 6,596 students in elementary and middle school in the EIR Study Area. Of these students, 30 percent are within the MCSD, while 70 percent are in SRCS.[24] Therefore, using the same proportional distribution, as well as the approximate distribution of development opportunities in the city, SRCS' share of the additional students would be 710 elementary students and 306 middle school students. High school students are expected to increase by approximately 243 students.

With student enrollment in the elementary and middle schools nearing capacity and student enrollment in high schools exceeding capacity, the additional students would exacerbate the overall capacity pressure of existing SRCS facilities. To accommodate new students, the SRCS would need to either expand existing facilities or construct new schools. Such expansions and considerations for upgrading existing facilities has partly occurred, and continues to occur, as identified in the *SRCS Master Facilities Plan*, described in Section 4.15.3.2, Existing Conditions. The *SRCS Master Facilities Plan* explores different options for balancing enrollment and expanding campuses to avoid overcrowding. Such options include reopening

[23] Using student generation factors from Table 4.15-3, calculated as follows: (Elementary Schools- 0.2273 x 4,460 = 1,014); (Middle Schools- 0.0980 x 4,460 = 437); (High Schools- 0.1108 x 4,460 = 243).

[24] Calculated by adding the 4,614 elementary and middle school students in SRCS and the 1,982 elementary and middle school students in the MCSD, and then dividing the number of MCSD students by the total number of students (4,614 + 1,982 = 6,596 total students); ((1,982/6,596) x 100 = 30 percent).

closed campuses, expanding existing schools, and shifting students between campuses. Most of the improvements are likely to occur on existing sites. The SRCS would continue to collect development impact fees throughout implementation of the proposed General Plan 2040, meaning potential future development would incrementally pay for any needed facility upgrades and expansions, which would mitigate the impacts from the proposed General Plan 2040 per SB 50. Furthermore, Measures A and B have allowed many of the existing schools in the SRCS system to expand or modernize as needed, introducing additional capacity for students to each school. Because potential future development from the proposed General Plan 2040, and subsequent population increases would occur incrementally, SRCS schools would have capacity to serve additional students. Therefore, the impact to SRCS would be *less than significant*.

Miller Creek School District

As described above, implementation of the proposed General Plan 2040 could potentially result in an increase of approximately 304 elementary school students and 131 middle school students in the MCSD by 2040.[25] As student enrollment in the MCSD is nearing capacity, these additional students would create a capacity deficiency for the district. Similar to SRCS, the MCSD adopted the *MCSD Facilities Master Plan* in 2014 and had a bond measure (Measure C) approved by voters in 2014 to provide $30 million in general obligation bonds to address deficiencies identified in the *MCSD Facilities Master Plan*. Funds have been used to update aging classrooms and instructional technology; provide updated middle school science classrooms; upgrade electrical wiring, improve campus safety and security; and repair, construct, acquire, and equip classrooms, sites, and facilities. Similar to SRCS, new development projects pay development impact fees, subsequently relieving capacity issues, which is considered mitigation under SB 50. In addition, environmental impacts from construction of the new facilities would be evaluated by the district. Therefore, impacts resulting from the 2040 General Plan to the MCSD would be *less than significant.* Furthermore, the proposed Land Use (LU) Element and the proposed Community Services and Infrastructure (CSI) Element contain goals, policies, and programs that require local planning and development decisions to consider and mitigate impacts that potential future development could have on school facilities. The following goals, policies, and programs would serve to reduce impacts to school facilities in the EIR Study Area:

Goal LU-1: Well-Managed Growth. Grow and change in a way that serves community needs, improves fiscal stability, and enhances the quality of life.

- Policy LU-1.16: School Site Reuse or Redevelopment. In the event a school site is made available for reuse, work with the School District and surrounding community to determine the desired uses. Given the public ownership of the land, uses that provide a public benefit should receive priority. This includes affordable housing, childcare facilities, neighborhood parkland, and facilities that accommodate public and quasi-public uses, such as adult day care, education, recreation, arts and cultural programs.

[25] MCSD did not provide student generation factors. For the purposes of this EIR evaluation, student generation factors provided by SRCS in Table 4.15-3 are being applied, calculated as follows: (Elementary Schools- 0.2273 x 2,200 = 500.6); (Middle Schools- 0.0980x 2,200 = 215.60).

- Program LU-1.16A: Zoning for School Sites. Continue to implement school site reuse and redevelopment through zoning regulations and the development review process.

Goal CSI-1: Educational Excellence. Promote excellent schools and high-quality, equitable education.

- Policy CSI-1.5: Campus Land Use and Transportation Issues. Work with San Rafael City Schools, the Miller Creek School District, local private schools, and neighborhood organizations to address traffic, parking, and land use issues on and around school campuses.
  - Program CSI-1.5A: School Construction Projects. Coordinate with school personnel on campus construction, modernization, and improvement projects.
  - Program CSI-1.5B: Long-Range Planning and Development Review. Collaborate with schools on long range planning and development review, including collection of appropriate fees, enrollment projections, and planning for future improvements.

With the required payment of developer impact fees for new development pursuant to SB 50 and the implementation of the proposed General Plan 2040 goals, policies, and programs that support school facilities in the EIR Study Area, impacts to the SRCS and MCSD would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area is an existing urban area in the city of San Rafael where roughly half of the anticipated development by 2040 is expected to occur. Buildout of the Downtown Precise Plan is expected to result in an increase of approximately 2,200 residential units and 3,570 residents by 2040. If SRCS multipliers are applied to these unit counts, the population increase would result in an increase of 716 students to SRCS elementary and middle schools and 244 students to the SRCS high schools.[26] The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to school services. All potential future development would be required to comply with the proposed General Plan 2040 goals, policies, and programs listed herein and pay developer impact fees for new development pursuant to SB 50. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

PS-6 Implementation of the proposed project could result in a cumulatively considerable impact to school services.

As discussed in Section 4.15.3.2, Existing Conditions, and in Impact Discussion PS-5, a majority of schools in the EIR Study Area are close to or exceeding capacity, and additional student enrollment due to the

[26] Using student generation factors from Table 4.15-3, calculated as follows: (Elementary Schools- 0.2273 x 2,200 = 500); (Middle Schools- 0.0980 x 2,200= 216); (High Schools- 0.1108 x 2,200 = 244).

implementation of the proposed project would exacerbate the capacity issue. However, according to the *SRCS Master Facilities Plan* and the *MCSD Facilities Master Plan,* existing schools are slated to be expanded or renovated if they have not already been in the past several years. These projects would be funded by bond measures discussed in Impact Discussion PS-5 and development impact fees from potential future development, which would mitigate the current and future capacity issues per SB 50. Therefore, the proposed project would not result in a cumulatively considerable impact to school facilities and cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

4.15.4 LIBRARIES

4.15.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to libraries are primarily in the Neighborhoods and Culture and Arts Elements. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of updated goals, policies, and programs is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.15.4.4, Impact Discussion.

4.15.4.2 EXISTING CONDITIONS

The analysis in this section is based on the *Community Services Background Report: San Rafael General Plan 2040* prepared by the San Rafael Community Development Department in February 2020. Information was provided through correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and library representatives, including Susan Andrade-Wax, Director of Library and Recreation, and Henry Bankhead, Interim Library Director.

Services

San Rafael's public library system is operated by the City's Library and Recreation Department. The main branch is located adjacent to City Hall in the Downtown Precise Plan Area. There are two satellite branches, the Pickleweed branch located at the Albert Boro Community Center in eastern San Rafael and the Northgate Mall branch located at Northgate Mall in northern San Rafael. The libraries are managed by the City's Library and Recreation Department, which is also responsible for recreation programming, childcare, and arts services. In addition to the City Library system, the County of Marin operates the Civic Center Branch Library at the Marin County Civic Center Building in the EIR Study Area. All seven

independent public libraries, the Marin County Free Library, as well as the College of Marin and Dominican University, are connected through membership in the MARINet library consortium. The MARINet consortium operates an integrated online library system. The MARINet system provides for the shared use and delivery of all physical library materials as well as some shared e-resources and high-bandwidth network connectivity for the public library members. Each local library pays to be a member of MARINet based on their physical holdings, library budget, and circulation of materials, as defined in the MARINet Joint Powers Agreement (JPA).

Facilities

In 2017, the City completed a comprehensive evaluation of its library facilities and developed a vision for improvement. The process included extensive community input and a comparison of San Rafael's libraries relative to similarly sized San Francisco Bay Area cities. San Rafael has just 0.30 square feet of library space per resident, which is below cities such as South San Francisco, which has 0.64 square feet per resident, Alameda, which has 0.68 square feet per resident, Mountain View, which has 0.77 square feet per resident, and Palo Alto, which has 1.35 square feet per resident. Based on recommended national standards of roughly 0.7 square feet per capita, San Rafael would need an additional 50,000 square feet of library space.

Existing library facilities in San Rafael total approximately 20,000 square feet. The original Downtown Library opened in 1909 as a 5,160-square-foot facility, and later expanded to the current 14,800 square feet by 1976. The Pickleweed branch occupies 2,185 square feet, which primarily serves residents of the Canal neighborhood in eastern San Rafael. The Terra Linda branch was established in northern San Rafael in 2018 as a "pop-up" facility that occupies 3,000 square feet inside the Northgate Mall.

A 2017 assessment of library conditions concluded that, while the Northgate Mall branch is currently meeting the needs of the northern San Rafael communities, both the main branch in the Downtown Precise Plan Area and the Pickleweed branch in eastern San Rafael are deficient in meeting the needs of the City and adjacent neighborhoods.[27] The 2018–2019 San Rafael Public Library Facilities Planning Study looked at cost options for improving library facilities in Central San Rafael, North San Rafael, and an expansion of the Pickleweed branch in East San Rafael. A second study in 2019, the Existing Facilities Report, assessed the existing main branch for code compliance and the cost of essential improvements for meeting long-range needs.[28] These alternatives are discussed further under Impact Discussion PS-7.

Funding

The City's Municipal General Fund supports essential City services such as police and fire protection, building and street maintenance, libraries, recreation, and parks and open space maintenance. Current

[27] City of San Rafael, July 2019, San Rafael Public Library Facilities Planning Project Existing Facilities Report, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/09/Existing-Facilities-Report.pdf, accessed on December 2, 2020.

[28] Noll and Tam Architects, August 2019, San Rafael Public Library Facilities Planning Study, City of San Rafael, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/09/SRPL-Facilities-Planning-Study-August-2019.pdf, accessed on April 7, 2020.

services for the MARINet online library system, which links Marin County libraries, are paid for separately by each individual member's annual fee. Additionally, a library special parcel Tax Measure was instituted in 2010 and extended in 2017 to supplement library services. The parcel tax is intended to be used "to maintain library hours, equipment, materials, and services for children, teens, and adults."

4.15.4.3 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would have a significant impact related to library services if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for library services.
2. Result in significant cumulative impacts with respect to library services.

4.15.4.4 IMPACT DISCUSSION

PS-7	**Implementation of the proposed project could result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

General Plan 2040

Implementation of the proposed General Plan 2040 is anticipated to add an additional 8,910 residents to the EIR Study Area by 2040, which would subsequently increase the demand for library services. An overall increase in residents is expected to occur with or without implementation of the proposed General Plan 2040. Service growth under the proposed General Plan 2040 would occur incrementally throughout the 20-year horizon; therefore, potential impacts resulting from increased demand for library services would not occur immediately or at once. However, existing City library facilities have been identified as insufficient to meet existing populations, and a population increase would exacerbate this deficiency.

As discussed in Section 4.15.4.2, Existing Conditions, a 2019 Library Assessment was completed to identify possible solutions to expanding library facilities in the city. Alternative locations were proposed and assessed for each library branch, as well as the estimated funding cost each would require.[29]

The three options for relocating the main branch include expansion of the current facility adjacent to City Hall, a new facility at Boyd Park, or a renovated joint community center and library at Albert Park. All these sites are centrally located and relatively easy to access by a variety of travel modes. The expansion and

[29] Noll and Tam Architects, August 2019, *San Rafael Public Library Facilities Planning Study*, City of San Rafael, https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/09/SRPL-Facilities-Planning-Study-August-2019.pdf, accessed on April 7, 2020.

remodel of the existing facility would result in a 27,000-square-foot facility at a cost of $34 million. The Boyd Park option would result in a 20,000-square-foot facility for $23 million and would require the demolition of the existing tennis courts and the construction of underground parking. The Albert Park option, which was recommended by staff, would result in a 26,000-square-foot facility (plus another 17,700 square feet of renovated community center space) and would cost $43 million. This location has been determined to have the greatest potential to benefit the community and would enable "economies of scale" due to its co-location with the community center and recreation program space.

The three options for the Northgate Mall branch would include a permanent location at Northgate Mall, the MCSD administrative offices site, or the Terra Linda Community Center. The latter two options would likely require construction of a new building, whereas the former would repurpose existing space within Northgate Mall. The Northgate Mall option has been identified as the preferred option, as a permanent library of up to 11,000 square feet could be constructed within the mall by repurposing existing retail space for significantly less than the estimated $1 million to $5 million cost of complete refurbishment.

Improvements to the Pickleweed branch could occur by expanding the existing Albert Boro Community Center by approximately 5,000 square feet, creating a new 7,000-square-foot library. The expanded facility would include program space for children, teens, and senior activities. An additional 36 parking spaces would be provided. The cost of this option was estimated to be $7.4 million. A more cost-effective option included repurposing space in the existing Albert Boro Community Center for shared library and recreation use. This second alternative would be more affordable and would preserve a barbecue and picnic area in Pickleweed Park that would otherwise be displaced by the expanded building.

In addition to facility upgrades, improvements are needed to expand the diversity in collection formats and new technologies. As described previously, both the City's Municipal General Fund and a special annual parcel tax dedicated to public library services and facilities, equipment, and technology improvements would pay for these improvements.

The proposed Community Services and Infrastructure (CSI) Element contains a goal, policies, and programs that require local planning and development decisions to consider and mitigate impacts that potential future development could have on library facilities. The following goals, policies, and programs would serve to ensure adequate library facilities in the EIR Study Area:

Goal CSI-2: Modern, Welcoming Libraries that Meet Community Needs. Enhance library services and facilities to meet the informational and recreational needs of the community.

- Policy CSI-2.1: Library Facilities. Improve library facilities to meet current and future needs and recognize the changing role of libraries in community life.
  - Program CSI-2.1A: New Main Library. Fund, develop, and construct a new Main Library designed to provide adequate space for collection materials, City programs, public meeting rooms and technology, seating for visitors, and services for special user groups such as children and teens. Develop adaptive reuse plans for the historic Carnegie Library as part of library planning.
- Policy CSI-2.2: Branch Libraries. Expand community-based library services in East and North San Rafael to ensure that library services are accessible to everyone in the community.

- Program CSI-2.2A: Pickleweed and Northgate Libraries. Modernize and expand the Pickleweed and Northgate Libraries so they are adequately equipped to deliver the services needed in the surrounding communities.
- Program CSI-2.2B: School Libraries. Consider partnerships with the school district to make high school libraries available to the public.

In summary, the existing library system does not have adequate capacity to accommodate growth over the 20-year horizon of the proposed General Plan 2040 and the expansion of existing library facilities or the construction of new facilities would be required. Potential future development in the city, like existing development, would pay the required parcel taxes and other taxes that go to the General Fund and the special library fund to offset impacts to library services. New facilities that may be proposed over the lifetime of the proposed General Plan 2040 would be required to conduct their own individual environmental review, which would analyze each facility's impact on the physical environment. The estimated timing or location of such facilities, or the exact nature of these facilities are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, such impacts would be project-specific, and would require permitting and review in accordance with CEQA, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. In addition, proposed General Plan 2040 Program CSI-2.1A: New Main Library, requires the City to fund, develop, and construct a new Main Library designed to provide adequate space for collection materials, City programs, public meeting rooms and technology, seating for visitors, and services for special user groups such as children and teens, as well as to develop adaptive reuse plans for the historic Carnegie Library as part of library planning. This EIR is a programmatic document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is *less than significant*.

Significant with Mitigation: Less than Significant.

Downtown Precise Plan

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to library services. All potential future development would be required to pay parcel taxes as with development in the remainder of the City, which would offset their fair share of impact to the library system. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the proposed General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

PS-8 Implementation of the proposed project could result in a cumulatively considerable impact to libraries.

The geographic context for the cumulative library impacts would occur from potential future development under the proposed project, combined with impacts of development on lands adjacent to the city.

A significant cumulative environmental impact would result if this cumulative growth would exceed the ability of San Rafael libraries to adequately serve the EIR Study Area, thereby requiring construction of new facilities or modification of existing facilities. As described in Impact Discussion PS-7, existing facilities are already not meeting the demands of the city and the payment of taxes as well as the implementation of proposed General Plan 2040 Program CSI-2.1A: New Main Library, would ensure adequate library services over the course of the General Plan buildout. Therefore, the proposed project would not result in a cumulatively considerable impact to library services and cumulative impacts would be *less than significant.*

Significance with Mitigation: Less than significant.

4.15.5 PARKS AND RECREATION

4.15.5.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

The Quimby Act

The Quimby Act of 1975 authorizes cities and counties to pass ordinances requiring developers to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act sets a standard park space to population ratio of 3 acres of park space per 1,000 persons. Cities with an existing ratio of higher than three acres per 1,000 persons can set a standard of up to 5 acres per 1,000 persons for new development.[30] The calculation of a city's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for a recreation facility or park land, and the type of development project upon which the fee is imposed.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to parks and recreation are primarily in the Parks and Recreation Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended, substantially changed, or new policies would be added. A comprehensive list of updated goals, policies, and programs is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.15.5.2, Impact Discussion.

[30] California Government Code Section 66477, California Department of Parks and Recreation website, *Quimby Act 101: An Abbreviated Overview,* http://www.parks.ca.gov/pages/795/files/quimby101.pdf, accessed on December 7, 2015.

San Rafael Municipal Code

The SRMC, organized by title, chapter, and section, includes a provision related to parks and recreation in Title 15, Subdivisions. Specifically, Section 15.09, Park Dedication and In-Lieu Fees, of the SRMC dictates the method by which the City may require that new subdivisions include dedicated parkland, and by which the subdivider can opt to pay parkland in-lieu fees in place of dedicating a portion of their project to parkland. At the time of approval of the tentative map for a residential subdivision, the approving body shall determine the land required for dedication, or the amount of in-lieu fees to be paid. The park land dedication or in-lieu fee that is required to meet the provisions of this chapter is imposed as a condition of approval on the tentative map. At the time of final map or parcel map approval for recordation, the subdivider shall dedicate land, pay a fee in lieu thereof, or a combination of both, at the option of the city, for neighborhood and community park or recreational purposes at the time and according to the standards and formula. In-lieu fee amounts are determined prior to project approval and are generally equal to the value of the land and improvements, which would have been required for dedication. The value of the land shall be determined in accordance with the provisions of fair-market value per buildable parkland acre, decided by a licensed appraiser. The City's current parkland dedication requirement under this ordinance is 3 acres per 1,000 residents.

4.15.5.2 EXISTING CONDITIONS

The analysis in this section is based on the *Parks and Recreation Existing Conditions* report, prepared by the San Rafael Community Development Department in December 2019. Information was provided through correspondence between Barry Miller, San Rafael General Plan 2040 Project Manager, and Susan Andrade-Wax, Director of Library and Recreation.

The City of San Rafael Library and Recreation Department is one of several park service providers in the EIR Study Area. Other service providers include the County of Marin's Open Space District, the California Department of Parks and Recreation, the Marinwood Community Services District, SRCS, and MCSD. Public park services are supplemented by private facilities such as swim and racquet clubs, the Young Men's Christian Association (YMCA) and Osher Marin Jewish Community Center (Osher JCC), private golf courses, and community-run pools and play areas.

Parkland Facilities

Open space and parks make up the largest single category of land use in the EIR Study Area. Although both may be considered "parkland," the analysis in this Draft EIR distinguishes "parks" from "open space." Open space refers to space managed for resource conservation, hazard reduction, and scenic value, while parks refer to land that has been improved in such a way to support active recreation. Typical park improvements include sports fields, playgrounds, picnic areas, tennis courts, running tracks, recreation centers, and basketball courts. Larger parks support programmed services, such as classes, swim and tennis lessons, activities for children and seniors, and league sports. Programs and other recreational services are coordinated by the City's Library and Recreation Department.

For a complete list of all parkland in the EIR Study Area, as well as amenities offered at each park, the City has prepared the *Parks and Recreation Existing Conditions Report,* which is available at the City offices and

online via the City's website. The City has applied the parkland classifications used by the National Recreation and Park Association (NRPA) in this report and in General Plan 2040. Parkland classifications, as dedicated by the NRPA, include region-serving parks, community parks, neighborhood parks, pocket parks, special-use parks, and public-school facilities.

The EIR Study Area also includes many areas that are classified as passive open space that are operated by the Marin Open Space District, the State of California, and the City of San Rafael. Passive open space generally refers to open space areas that may be used for recreation such as hiking, mountain biking, or horseback riding. Such areas in the EIR Study Area include the Terra Linda Sleepy Hollow Open Space, and Harry Barbier Memorial Park. These locations include such amenities as staging areas, restrooms, and picnic grounds. Parkland by parkland type, as well as the operator and acreage of each parkland, is outlined in Table 4.15-5. The figures in this table are subject to change through the General Plan adoption process.

TABLE 4.15-5 EIR STUDY AREA PARKLAND OPERATORS AND ACREAGES (EXCLUDES DESIGNATED "OPEN SPACE" AREAS)

Parkland Type	Operator	Acreage
Region- Serving Park	County of Marin	92
Region- Serving Park	State of California	30
Community Parks	City of San Rafael	33.81
Community Parks	Marinwood CSD [a]	14.12
Neighborhood Parks	City of San Rafael	46.53
Neighborhood Parks	County of Marin CSA [b]	2.55
Neighborhood Parks	Marinwood CSD	1.22
Neighborhood Parks	Lucas Valley HOA [c]	1.52
Pocket Parks	City of San Rafael	2.27
Pocket Parks	County of Marin	0.72
Pocket Parks	County CSA	0.88
Special Use Parks	City of San Rafael	30.86
Special Use Parks	County of Marin	2.3
Public School Facilities	SRCS	50.56 (* counted at 50%)
Public School Facilities	MCSD	44.07 (* counted at 50%)
Total	—	**306.1**

Notes:
[a] CSD= Community Services District
[b] CSA= Community Services Area
[c] HOA= Homeowners Association
Note: Only 50% of the acreage shown for schools is counted in the "Total" row, recognizing that this land is only available for general public use on a limited basis.
Source: City of San Rafael, 2020.

Joint-Use Agreements

The City of San Rafael works with SRCS and MCSD to leverage their properties and facilities for public benefit. Many neighborhoods that lack neighborhood parks, or have small parks without sports fields, rely

on neighborhood schools for their recreational needs. For instance, facilities at high schools such as specialized swimming pools, tennis courts, and gymnasiums can be made available for public use.

SRCS has adopted provisions for the joint use of school facilities, which includes supervised recreational activities, such as sports league activities. The SRCS has a specific set of priorities for community use, including community-based youth programs, community recreational youth sports leagues, public agency adult recreation and activities, non-profit adult recreation, and individual family use for special events. Fees may be collected by SRCS for the use of their facilities.

The MCSD likewise allows joint use of its facilities, with a permitting process to use the facilities. Reservation of school grounds is only permitted after verifying with the school administrator that the space is available, and that the use would not interfere with regular school activities. Fees may be waived for certain groups, such as parent-teacher associations, scout troops, and parent/school clubs. Other groups are charged direct costs.

Private Facilities

Public recreational facilities in San Rafael are supplemented by private facilities. Such facilities include the Dominican University Conlan Center with regulation basketball and volleyball courts, a fitness center, and a swimming pool. Marin Academy in the Downtown Precise Plan Area includes a gymnasium, pool, and athletic fields. The Peacock Gap neighborhood has a private golf course. There are additional swim and racquet clubs throughout the EIR Study Area. Larger residential developments in San Rafael may include recreational facilities, such as swimming pools, community rooms, and tennis courts. These facilities are typically supported by Homeowner Associations or membership fees in owner-occupied developments or are passed along to tenants through rent in apartment communities.

Service Standards

Adequacy of a city's park system is most commonly measured by the number of acres of parkland per 1,000 residents. Most cities strive for a standard of 3 to 5 acres of active open space per 1,000 residents. For the purposes of calculating Quimby Act fees as described in the Regulatory Framework above, calculations typically count areas of parkland within a city's Planning Area, provided they are publicly accessible for community and neighborhood recreation. This includes parkland owned by other agencies, as well as school district properties, which are counted at 50 percent of their actual acreage. Based on 306.1 acres of parkland shown in Table 4.15-5, and the EIR Study Area's current population of 75,751 residents, the parkland ratio is 4.04 acres per 1,000 residents.[31]

Per capita standards generally do not count passive open space areas since they serve a different function than active parkland. If such areas were added to the inventory, the existing ratio in the EIR Study Area would be roughly 50 acres of open space per 1,000 residents, which is nearly five times the national average of 10.1 acres per 1,000 residents, according to the NRPA.

[31] 75,751 existing residents/1,000 = 75.751; 306.1 acres of existing park/75.751 = 4.04 acres of parkland per 1,000 residents

Planned Improvements

Planned parkland improvements are identified in the City's three-year capital improvement program. The list of needed improvements is informed by staff and community input, and by the results of a 2018 *Facilities Assessment Study*. Facilities such as play structures require periodic replacement due to wear and tear, while community centers require modernization, Americans with Disabilities Act (ADA) compliance upgrades, and repairs due to heavy use.

Recently completed projects include a new prefabricated restroom at Bret Harte Park, the new Albert Park playground, replacement of the Pickleweed Park playground, replacement of the Victor Jones playground, and interior restrooms at the San Rafael Community Center.

Funding

A variety of funding sources are used to cover parkland capital improvement costs. One such source is Measure A, a countywide 0.25-cent sales tax passed in 2012, managed by the County of Marin. Measure A has a nine-year term and is used to care for existing parks and open spaces, restore and protect farmland, and support regional and community parks. About 15 percent of the Measure A revenue stream is directed to local governments in Marin County.

Some of the City's Municipal General Fund is set aside in a Building Maintenance account, which supports parks, community centers, and other City buildings. The City's budget includes a bedroom tax fund, which includes money for neighborhood park maintenance and development, and a park capital projects fund, which is a repository for funds to be used for capital projects. The City may also apply for grants from the State and other entities. Gas tax revenues provided to the City by the State provide a supplemental funding source, although these funds are primarily intended for transportation projects.

Funding also comes from parkland dedication in-lieu fees, as outlined in Section 15.09 of the SRMC. In-lieu fees are paid on a project-by-project basis when a subdivider of residential property submitting a tentative map elects to pay an in-lieu fee instead of dedicating parkland within a proposed project.

The City also reviews more stable and reliable long-term funding sources for capital projects, including bond financing, grant funding, voter-approved taxes, and alternative funding mechanisms. Alternative mechanisms could include public-private partnerships, such as the unique arrangement between the City and Terrapin Crossroads at Beach Park. The park remains in public ownership, although it was leased to a restaurant/entertainment venue at $15,000 per year for seven years. However, any improvements made to the premises by Terrapin Crossroads in excess of $15,000 will be credited to the following year's lease payment. To date, Terrapin Crossroads has implemented over $100,000 in improvements and ongoing programming for community events, as well as activities such as bocce, volleyball, and a children's play area.

4.15.5.3 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would have a significant impact to parks and recreation if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities, need for new or physically altered parks and recreation facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.
2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated.
3. Result in significant cumulative impacts with respect to parks and recreation.

4.15.5.4 IMPACT DISCUSSION

PS-9	**Implementation of the proposed project could result in the need for new or physically altered park facilities or other recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

General Plan 2040

As discussed in Section 4.15.5.2, Existing Conditions, the EIR Study Area currently provides 4.04 acres of parkland per 1,000 residents, which exceeds its adopted standard of providing 3.0 acres of parkland per 1,000 residents.[32] However, implementation of the proposed General Plan 2040 could introduce up to 8,910 new residents, which would increase the demand for parks and recreational facilities.

The proposed Parks, Recreation, and Open Space (PROS) Element contains goals, policies, and programs that require local planning and development decisions to consider and mitigate impacts that potential future development could have on available parkland and the quality of facilities. The following goals, policies, and programs would serve to reduce impacts to such parks, recreation, and open space in the EIR Study Area:

Goal PROS-1: Quality Parks for All to Enjoy. Sustain high quality parks that meet the recreational needs of all those who live and work in San Rafael.

- Policy PROS-1.1: Park Classification. Maintain a system of community, neighborhood, pocket, and special use parks. These parks should be complemented by larger region-serving parks and open spaces, and by school recreation areas.
  - Program PROS-1.1A: Parks and Recreation Master Plan. Prepare a Parks and Recreation Master Plan, including citywide recommendations for park management, operations, facility development, potential acquisition, and recreation service delivery, as well as recommendations for each City-owned park.
  - Program PROS 1.1B: Capital Improvement Program. Use the Capital Improvement Program to identify funding sources and timing of parks and recreation capital projects.

[32] 75,751 existing residents/1,000 = 75.751; 306.1 acres of existing park/75.751 = 4.04 acres of parkland per 1,000 residents

- Policy PROS-1.2: Per Capita Acreage Standard. Maintain a citywide standard of 4.0 acres of improved park and recreation land per 1,000 residents.
  - Program PROS-1.2A: Municipal Code Amendment. Modify Chapter 15.09 of the Municipal Code to establish a general standard of 4.0 acres of improved parkland per 1,000. Adjust the formulas for dedication of land to reflect this standard.
  - Program PROS-1.2B: Park In Lieu Fees. Periodically adjust park in-lieu fees to reflect the prevailing costs of land and facilities. Any increases to existing fees should be developed through a public process in which potential cost impacts on development feasibility are disclosed and measures to offset impacts are considered.
- Policy PROS 1.3: Distribution of Parks. Strive for a balanced distribution of neighborhood and community parks across the city. When planning new parks, prioritize areas that lack existing parkland or outdoor space, and have higher needs due to higher housing densities and social and economic conditions.
  - Program PROS-1.3A: New Parks. Develop additional parks and playgrounds in areas with unmet needs and in areas experiencing growth. Opportunities to create new parks within new development and on underutilized public land should be pursued.
  - Program PROS-1.3B: Parks on Former School Sites. Work with San Rafael City Schools and the Miller Creek School District to identify ways to acquire on-site recreational facilities in the event that school properties are closed, leased, or offered for sale.
- Policy PROS-1.6: Park Improvements. Regularly upgrade and modernize San Rafael's parks to meet the recreational needs of the community and replace aging or deficient facilities.
  - Program PROS-1.6A: Needs Assessment. Conduct a needs assessment as part of a Parks and Recreation Master Plan. Recreational facility needs should be periodically reevaluated in response to trends, demographics, and changing conditions
  - Program PROS-1.6B Park Improvements. As part of the Parks and Recreation Master Plan, prepare plans to improve neighborhood and community park facilities. Seek funding to implement these plans.
- Policy PROS-1.7: Athletic Field Design. Encourage athletic field design which maximizes versatility, cost-efficiency, and the ability to use fields year-round.
  - Program PROS-1.7A: Field Improvements. Evaluate local athletic fields as part of a Parks and Recreation Master Plan. Develop design and capital facility recommendations for athletic fields based on the findings.
- Policy PROS-1.12: Joint Use. Encourage formal agreements with the School Districts that allow for the joint development, maintenance and use of school facilities for recreational use when schools are not in session. Agreements shouldalso address access to school parking lots for sporting events and other measures to minimize the impacts of joint use on nearby neighborhoods.
  - Program PROS-1.12A: Joint Use Agreements. Work with SRCS and MCSD to formalize joint use agreements for parks, playgrounds, sports fields, and other school facilities.
- Policy PROS-1.13: Recreational Facilities in Development Projects. Encourage, and where appropriate require, the construction of on-site recreational facilities in multi-family, mixed use, and office projects to supplement the facilities available in City parks.

    - Program PROS-1.13A: Onsite Recreation Facilities. Continue to implement zoning regulations that require appropriate recreational facilities for residents in new development.
- Policy PROS-1.14: Commercial Recreation. Encourage private sector development of complementary recreational facilities to serve community needs, such as commercial recreation and athletic field facilities, swim clubs, tennis clubs, marinas, and gyms and health clubs.
    - Program PROS-1.14A: Commercial Recreation. Consider amending the zoning ordinance to allow a floor area ratio exemption for on-site recreational facilities open to the public.

Policy PROS-1.2 would increase the current parkland standard to 4.0 acres per 1,000 residents. With the projected addition of 8,910 residents by 2040 without adding any news parks, the City's parkland ratio would be 3.61 acres of parkland per 1,000 residents.[33] To achieve the proposed standard, the City would need to add 37 acres of parkland. Program PROS-1.1A, which, amongst other things, would require the City to look at the potential acquisition of parkland as part of the Park and Recreation Master Plan process, and recreation service delivery, as well as recommendations for each City-owned park. Program PROS-1.3A would require the City to develop additional parks and playgrounds in areas with unmet needs and in areas experiencing growth. Program PROS-1.3B would require the City to work with San Rafael City Schools and the Miller Creek School District to identify ways to acquire on-site recreational facilities in the event that school properties are closed, leased, or offered for sale. Implementation of these programs, combined with the ongoing collection of impact fees, would help to ensure that the proposed new service level is achieved and maintained.

While the City is currently above the existing 3.0 acres per 1,000 acres of parkland standard for parkland adopted in the SRMC but below the proposed standard of 4.0 acres per 1,000 acres of parkland specified by Program PROS-1.2A, the City is anticipated to meet the proposed ratio upon buildout of the proposed General Plan 2040 with the implementation of policies and programs requiring park dedication and fees for new development. SRMC Section 15.09, Park Dedication and In-Lieu Fees, would continue to require residential subdivisions to either provide parkland or pay in-lieu fees for the City to dedicate parkland elsewhere. This would result in the incremental addition of parkland if a residential subdivision is proposed in the city.

As indicated above, new residents from development allowed by the proposed General Plan 2040 would increase the demand for recreational facilities, and recreational facility standards would require the construction of new or expanded recreation facilities. The estimated timing or location of such facilities or the exact nature of these facilities are not known, so project-specific environmental impacts that would occur from their construction and operation cannot be determined at this time. However, depending on the type, size, and location of new parks, the construction of new parks would be subject to environmental review and the mitigating polices and mitigation measures described in this EIR to ensure the impacts from the construction would be less than significant. The construction of project-specific parks would require permitting and review in accordance with City standards, which would ensure that any environmental impacts are disclosed and mitigated to the extent possible. This EIR is a programmatic

[33] (75,751 existing residents + 8,910 new residents = 84,661 residents)/1,000 = 84.661; 306.1 acres of existing park/84.661 = 3.61 acres of parkland per 1,000 residents.

document and does not evaluate the environmental impacts of future project-specific development. Therefore, the impact is considered *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to park and recreation services. Parkland in the Downtown Precise Plan Area is accounted for and calculated in the parkland acreage for the entire EIR Study Area. The Downtown Precise Plan could result in the creation of additional pocket parks or open space that would augment the existing inventory. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

PS-10 Implementation of the proposed project could increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated.

General Plan 2040

As described previously, future development allowed by the proposed General Plan would result in increased population in San Rafael with up to 8,910 new residents, which would increase demands for parks and recreational facilities, and could cause physical deterioration of park facilities. However, the proposed General Plan contains goals, policies, and programs that would support parkland goals, and as described in Section 4.15.4.2, the SRMC establishes parkland dedication and/or fee requirements for new development, helping to ensure that individual park and recreation facilities are not overburdened by use.

As discussed in the Section 4.15.5.2, Existing Conditions, the City of San Rafael has many planned improvements in the pipeline for parks, the majority of which are already funded. These include specific projects to replace aging equipment, repaving, restroom repair, updating of ADA resources, among others.

The proposed Parks, Recreation, and Open Space Element contains goals, policies, and programs that require local planning and development decisions to consider and mitigate impacts that potential future development could have on existing parks and the quality of the facilities. Several proposed goals, policies, and programs, as listed in Impact Discussion PS-9, ensure that parks, recreational facilities, and open space are adequately maintained and protect the public's investment in park and recreation facilities. While potential future development under implementation of the proposed General Plan 2040 would result in an increased population with an increased demand for parks and recreational facilities, buildout would occur incrementally throughout the 20-year horizon, and future development would be subject to

the proposed General Plan 2040 goals, policies, and programs listed in Impact Discussion PS-9; therefore, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Buildout of the Downtown Precise Plan is expected to result in an increase of approximately 2,200 residential units and 3,570 residents by 2040. Similar to the proposed General Plan 2040, buildout of the proposed Downtown Precise Plan would increase demand on parks and recreational facilities in such a manner that the physical condition of these sites and facilities could be degraded. The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to park and recreation services. Therefore, with the implementation of the proposed General Plan 2040 goals, policies, and programs listed in Impact Discussion PS-9, the proposed buildout in Downtown Precise Plan Area would not increase the use of existing neighborhood and regional parks to the degree that substantial deterioration of park facilities would occur. Accordingly, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

PS-11 Implementation of the proposed project could result in a cumulatively considerable impact to parks.

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, this EIR cumulative impacts are considered in the context of projected growth in the rest of Marin County and the surrounding region, as forecast by *Plan Bay Area* 2040, and contiguous with the service area boundaries of the service providers evaluated in this section, including park and recreation areas provided by the City, the County of Marin's Open Space District and the California Department of Parks and Recreation.

As described under Impact Discussions PS-9 and PS-10, the potential population increase under the proposed project would increase demand for park and recreational facilities. Compliance with the SRMC, proposed General Plan 2040 goals, policies, and programs listed in Impact Discussions PS-9 and PS-10, would ensure that adequate parklands and recreational facilities are provided, maintained, and funded through in-lieu fees, maintenance fees, or parkland dedication in the EIR Study Area. This would mitigate potential impacts that future development would have on park and recreation services in the EIR Study Area. Therefore, the proposed project would not result in a cumulatively considerable impact to park and recreational facilities and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

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4.16 TRANSPORTATION

This chapter describes the potential impacts to the transportation system associated with the adoption and implementation of the proposed project. The impact discussion examines the vehicular, transit, bicycle, and pedestrian components of the city's overall transportation system in the Environmental Impact Report (EIR) Study Area, which includes the Downtown Precise Plan Area.

The proposed General Plan 2040 includes transportation policies related to taking a leadership role in developing regional transportation solutions, sustaining an efficient network that provides mobility and accessibility, reducing greenhouse gas (GHG) emissions and vehicle miles traveled (VMT), supporting high-quality affordable transit, providing safe streets that connect the community, encouraging walking and bicycling as safe ways to travel, and managing parking to meet future needs while supporting the City's goal of a more sustainable transportation system.

The transportation impact analysis is based on data and information collected in 2019 plus analysis performed to test alternatives and develop the final project description for environmental review. The 2019 data represents baseline conditions for the purpose of the transportation impact analysis. Impacts are determined based on long-term growth from 2019 to 2040.

The COVID-19 pandemic has dramatically changed the demand for travel in the Bay Area since March 2020. The effects of the initial shutdown (March 2020) were a significant decline in VMT and transit ridership, resulting in significant cuts to transit service levels. VMT has increased over time and is approaching pre-pandemic levels, but transit ridership levels have increased at a slower pace. The existing conditions described in this section were based on data collected in spring 2019 prior to the onset of the pandemic. The forecasts for year 2040 conditions are based on regional forecasts prepared by the Association of Bay Area Governments (ABAG) and were not adjusted to reflect any lasting effects of COVID-19 on travel. It is ABAG's belief at this time that the current pandemic would have an impact on the economy over the next few years but not in the long term.

The VMT analysis in this chapter, a primary California Environmental Quality Act (CEQA) transportation metric, is based on buildout of the proposed project, as modeled using the Transportation Authority of Marin Demand Model (TAMDM). For this effort, the 2015 base year for TAMDM was updated and validated for a new 2019 base year for the City of San Rafael (City) to be consistent with the data collected for this evaluation. This analysis includes a 2040 No Project scenario that is based on the TAMDM horizon year and a 2040 Plus Project scenario that reflects land use changes and transportation improvements consistent with the proposed project.

4.16.1 ENVIRONMENTAL SETTING

4.16.1.1 TERMINOLOGY

The following are definitions for terms used in this chapter.

- Vehicle Miles Traveled (VMT). A measure of network use or efficiency that accounts for the number of daily vehicle trips generated times the length or distance of those trips. VMT is generally expressed as

VMT per capita for a typical weekday. For instance, the 2013 average daily residential VMT per capita for the nine county Bay Area region was 15.3 miles per person per day.1

- Greenhouse gases (GHG). Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect

4.16.1.2 REGULATORY FRAMEWORK

This section summarizes key federal, state, regional, and local regulations and programs related to GHG emissions resulting from the proposed project.

Federal Regulations

Applicable federal regulations pertaining to transportation are addressed in other chapters of this EIR, including Chapter 4.3, Air Quality, Chapter 4.8, Greenhouse Gas Emissions, and Chapter 4.9, Hazards and Hazardous Materials. The federal Clean Air Act, the Fixing America's Surface Transportation Act, and Americans with Disabilities Act may have some relevance or influence for individual projects or actions as part of potential future projects in the EIR Study Area.

State Regulations

Senate Bill (SB) 743

With the passage of SB 743 (September 2013) and the subsequent adoption of revised CEQA Guidelines in (December 2019, level of service can no longer be used as a criterion for identifying significant transportation impacts for most projects under CEQA. Level of service is the measure of the average amount of delay experienced by vehicle drivers at an intersection or along a road segment during the most congested time of day, while the new CEQA metric (VMT) measures the total number of daily miles traveled by vehicles on the roadway network and thereby the impacts on the environment from those miles traveled. Level of service is a measure of local vehicle congestion at an intersection or on a road segment and VMT is a measure of the total miles of vehicle travel measured at an area-wide or project-level scale. In other words, SB 743 changed the focus of transportation impact analysis in CEQA from measuring quality-of-life impacts *to* drivers, to measuring the physical impacts on the environment *of* driving. Land use projects with one or more of the following characteristics would have lesser VMT impacts:

- Higher land use densities
- Mix of project uses
- Support of a citywide jobs-housing balance (i.e., provide housing in a job rich area, or vice versa)
- Proximity to the core of a region
- Proximity to high quality transit service
- Located in highly walkable or bikeable areas

[1] Source: Metropolitan Transportation Commission (MTC) Travel Model One.

This shift in transportation impact criteria is expected to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. Specific to SB 743, Section 15064.3(c) of the revised Guidelines states that, "a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide." However, CEQA Section 21099(b)(2) states that, "upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the Guidelines."

Although the Governor's Office of Planning and Research (OPR) provides recommendations for adopting new VMT analysis guidelines, lead agencies have the final say in designing their methodology. Lead agencies must select their preferred method of estimating and forecasting VMT, their preferred significance thresholds for baseline and cumulative conditions, and the mitigation strategies they consider feasible. Lead agencies must prove that their selected analysis methodology aligns with SB 743's goals to promote infill development, reduce GHGs, and reduce VMT.

California Complete Streets Act, AB 1358 (States of 2008)

The California Complete Streets Act requires the legislative body of a city or county, upon revision of the circulation element of their general plan (after January 1, 2011), to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway (i.e., complete streets) including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation. San Rafael's existing General Plan 2020 was previously amended and meets this requirement.

California Department of Transportation

Caltrans is responsible for operating and maintaining the State highway system. In the Project vicinity, US-101 and I-580 fall under Caltrans jurisdiction. Caltrans provides administrative support for transportation programming decisions made by the California Transportation Commission for State funding programs. The State Transportation Improvement Program is a multiyear capital improvement program that sets priorities and funds transportation projects envisioned in long-range transportation plans.

Transportation Impact Study Guide

The TISG replaces the Guide for the *Preparation of Traffic Impact Studies* for use with local development projects and went into effect July 1, 2020. The TISG was prepared by Caltrans to provide guidance to lead agencies regarding Caltrans review of a land use project or plan's transportation analysis using a VMT metric. This guidance is not binding and is intended to be a reference and informational document.

Deputy Directive DD-64-R1 – Complete Streets – Integrating the Transportation System

Caltrans provides for the needs of travelers of all ages and abilities in all programming, planning, design, construction, operations, and maintenance activities and products on the State highway system. Caltrans views all transportation improvements as opportunities to improve safety, access, and mobility for all

travelers in California and recognizes bicycles, pedestrians, and transit modes as integral elements of the transportation system.

Caltrans develops multimodal projects in balance with community goals, plans, and values. Implicit in these objectives is addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding. Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets," beginning early in the system planning process and continuing through project delivery and maintenance and operations.

California Public Utilities Commission

The California Public Utilities Commission sets guidelines for interactions between railroad facilities and ground transportation facilities. This includes location and type of crossing guards, design of railroad crossings, and other design criteria in and around railroad facilities. The guidelines come in the form of general orders.

General Order NO. 75-D – Regulations Governing Standards for Warning Devices for At-Grade Highway-Rail Crossings in the State of California.

The general order provides regulations that govern the standards for warning devices for at-grade highway-rail crossings for motor vehicles, pedestrians, and/or bicycles. All warning devices shall be in substantial conformance with the applicable Standards, Guidance and Options set forth in the Manual on Uniform Traffic Control Devices adopted by Caltrans.

Regional Plans and Regulations

Plan Bay Area

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, *Plan Bay Area* is the Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS), as mandated by the Sustainable Communities and Climate Protection Act (Senate Bill 375). *Plan Bay Area* lays out a development scenario for the nine-county Bay Area that works to align transportation and land use planning in order to reduce VMT through modified land use patterns. The current *Plan Bay Area* projects growth and development patterns through 2040 and is currently being updated to extend to 2050.

As described in Chapter 4, Environmental Analysis, part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) and Transit Priority Areas (TPAs) to focus growth. PDAs are areas along transportation corridors which are served by public transit that allow opportunities for development of transit-oriented, infill development within existing communities that are expected to host the majority of future development. TPAs are similar in that they are formed within one-half mile around a major transit stop such as a transit center or rail line. Overall, over two-thirds of all regional growth by 2040 is allocated to PDAs and TPAs. As shown on Figure 4-1, the EIR Study Area has three PDAs and three TPAs. The PDAs include the North San Rafael PDA, Civic Center Smart Station TPA, Southeast San Rafael / Canal PDA, Downtown San Rafael SMART Station PDA and TPA, and a very small

portion of the Larkspur TPA. General Plan 2040 is anticipating that these areas will absorb most of the City's future growth.

Bay Area Clean Air Plan

As described in Chapter 4.3, Air Quality, of this Draft EIR, the Bay Area Air Quality Management District (BAAQMD) adopted the 2017 *Clean Air Plan: Spare the Air, Cool the Climate* (Clean Air Plan) on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a postcarbon year 2050 that encompasses the following:

- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover eight sectors that contribute to GHG emissions, including transportation. The control strategy includes the following relevant priorities related to the transportation sector:

- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel and high-carbon goods and services.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the MTC, the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to transportation are primarily in the Circulation Element. As part of the proposed project, this Element is being retitled the Mobility Element and its policies and programs are being comprehensively updated. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and

potential to result in an adverse physical impact later in this chapter under Section 4.8.4, Impact Discussion.

San Rafael Municipal Code

The San Rafael Municipal Code (SRMC) includes various directives pertaining to transportation. The SRMC is organized by title, chapter, and section. Most provisions related to transportation impacts are in Title 5, Traffic Regulations, Title 11, Public Works, and Title 14, Zoning.

- Chapter 5.52, Restricted Use of Certain Streets. This chapter designates truck routes in the city.
- Chapter 5.81, Trip Reduction and Travel Demand Requirements. Requires the City to implement a trip reduction and travel demand ordinance (Ordinance 1657 Section 1 (part), 1994).
- Chapter 11.04, Encroachments in the Public Right-of-Way. Requires any persons encroaching in the public right-of-way that involves temporary closures for construction or other purposes to obtain a permit that describes how traffic will be safely managed during the closure.
- Chapter 14.18, Parking Standards. Requires the provision of off-street parking as specified by land use type and specifies parking design parameters.

San Rafael Bicycle and Pedestrian Master Plan

The San Rafael *Bicycle and Pedestrian Master Plan* (BPMP), updated in 2018, has a goal of connecting the entire city of San Rafael through a continuous biking and walking transportation network. The BPMP inventories existing active transportation infrastructure and identifies constraints, including gaps in pathways, neighborhoods lacking pathways, and safety issues. The BPMP then provides and ranks priorities for the active transportation network and identifies projects and programs that can help the City achieve its goal of having continuous biking and walking pathways.

San Rafael Climate Action Plan

As discussed in Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, the current San Rafael Climate Change Action Plan (2019 CCAP) focuses on mitigation measures aiming to reduce GHG emissions and establishes targets similar to the State's GHG emission goals, to reduce emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Actions provided in the 2019 CCAP to meet the City's reduction targets involve initiatives focused on low carbon transportation, amongst others. Low carbon transportation actions would provide 38 percent of the total GHG reductions, with that reduction allocated as follows:

- Zero Emission Vehicles: 83%
- Bicycling: 5%
- Walking: 2%
- Safe Routes to School: 1%
- Public Transit: 3%
- Employee Trip Reduction: 3%
- Parking Requirements: <1%
- Traffic System Management and Vehicle Idling: 3%
- Electric Landscape Equipment: <1%

4.16.1.3 EXISTING CONDITIONS

Based on the 2013–2017 American Community Survey, most residents in San Rafael, Marin County, and the State of California commute by automobile (drive alone or in carpool) to get to work. The share of commuters driving to work is slightly higher in San Rafael (about 74 percent) compared to Marin County (about 73 percent) and lower than California (about 84 percent). Public transportation accounted for the next highest share (about 11 percent). In San Rafael, more residents use public transportation to get to work compared to Marin County (about 10 percent) and California (about 5 percent). Walking and biking accounted for seven percent of the mode share in San Rafael. In San Rafael, more residents walk or bike to work compared to Marin County (about six percent) and California (about five percent). About eight percent of San Rafael residents worked from home at the time this data was collected. Chart 1 displays the method of travel to work for residents of San Rafael.

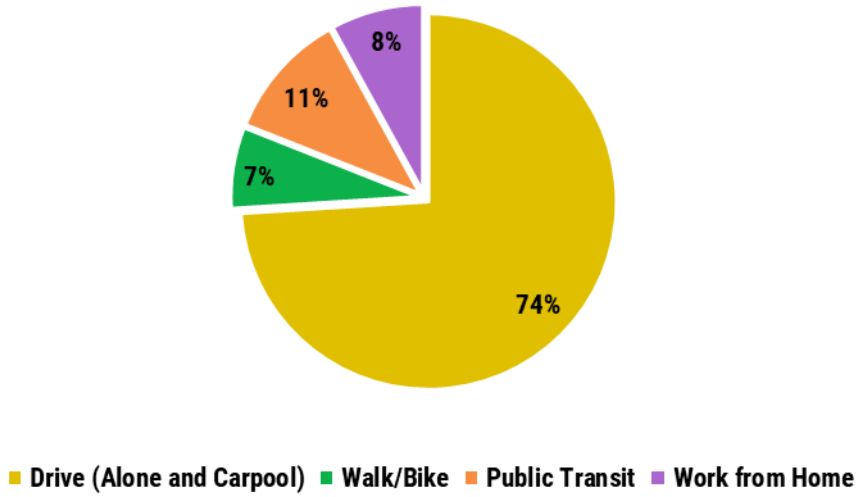


Chart 1: Method of Travel to Work

Source: American Community Survey, 2013-2017.

Marin County travel data collected for the Transportation Authority of Marin (TAM) indicate that the average daily trip length[2] for San Rafael, according to the TAM data, is 8.2 miles, slightly higher than the overall county average of 8.1 miles and 19 percent higher than the Bay Area average of 6.9 miles.

The TAM travel data also shows that a large share of Marin County workers reside outside Marin County and thus have long commutes, a reflection of the high cost of housing. About 35 percent of the approximately 125,000 employees who work in Marin County live outside the county, with the highest share of imported workers coming from Sonoma, Contra Costa, and San Francisco counties.

Street System

The City's street system (totaling about 172 miles)[3] serves as the primary channel for all modes of travel. Roadways are organized using a hierarchical system, whereby individual roadways are classified by their intended function within the overall roadway network. These classifications – highways, arterials, and

[2] Average daily trip length represents the average trip length for a single trip as opposed to VMT, which represents the distance traveled by one or more trips.

[3] *California Public Road Data*, California Department of Transportation, Released November 2019.

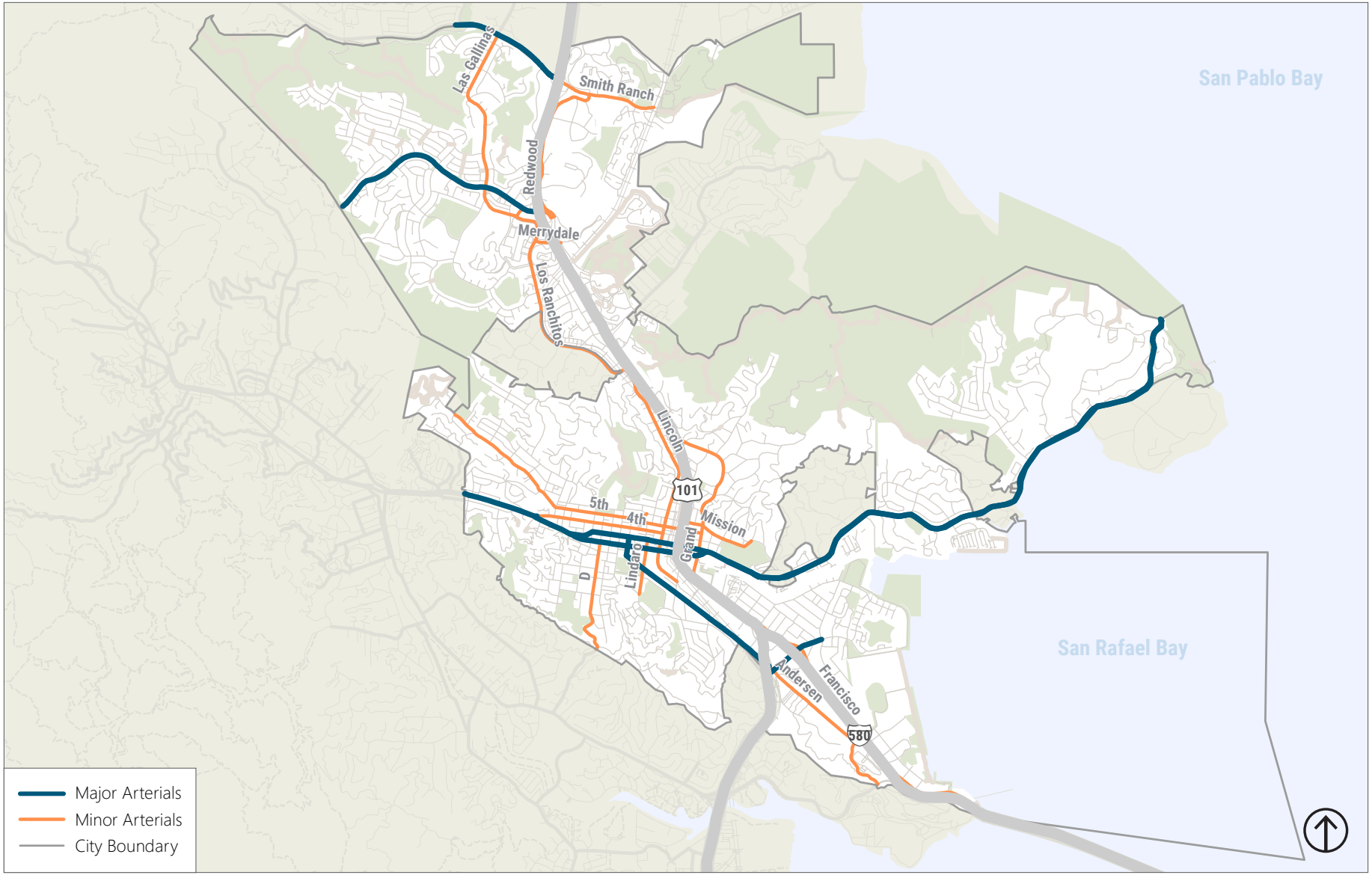
collectors – define the desired functional and operational characteristics of a roadway, such as traffic volume capacity and level of service. Figure 4.16-1 presents the location of important roadways within the City of San Rafael.

United States Highway 101 (US-101) and Interstate 580 (I-580) provide regional access in, to, and out of the city of San Rafael. Both highways are owned, operated, and maintained by Caltrans. US-101 is a major north-south highway that runs through the states of California, Oregon and Washington. US-101 has four lanes in each direction in San Rafael and carries approximately 202,000 vehicles per day. I-580 is a freeway that extends from San Rafael east across the San Francisco Bay, via the Richmond-San Rafael Bridge, and through the East Bay to its eastern terminus at I-5 east of Livermore. I-580 has two lanes in each direction through San Rafael and carries about 77,000 vehicles per day just east of US-101.

Congestion levels on US-101 as well as at the junction of US-101/I-580 can cause freeway traffic to detour onto city streets during peak travel periods or when incidents occur on the freeway. This can increase congestion levels on parallel city street such as Las Gallinas Avenue, Los Ranchitos Road, Lincoln Avenue, Grand Avenue, Andersen Drive, Francisco Boulevard East, and Francisco Boulevard West. As there is not currently a direct connector between northbound US-101 and eastbound I-580, freeway traffic along this route must use local city streets including the Bellam Boulevard interchange. The Transportation Authority of Marin (TAM) in collaboration with Caltrans and the cities of San Rafael and Larkspur has recently launched a study to plan and design a grade-separated connector between northbound US-101 and eastbound I-580 (US-101/I-580 connector project). The US-101/I-580 connector project will provide a direct ramp connection that avoids local streets. A number of alternative alignments are being considered for the new ramp, each with varying environmental impacts and costs. The US 101/I-580 connector project includes bicycle and pedestrian improvements along Bellam Boulevard, and new transit connections. The US-101/I-580 connector project is being coordinated with efforts to reduce bottlenecks on the eastbound I-580 approach to the Richmond-San Rafael Bridge. A third eastbound lane was opened on the Richmond-San Rafael Bridge in 2018 for afternoon commuters. The US-101/I-580 connector project includes a new lane on eastbound I-580 from the new US-101 ramp to the existing on-ramp at Sir Francis Drake Boulevard.

The location and layout of development within the City of San Rafael have resulted in a primarily east-west roadway network. Major east-west roadways include Lucas Valley Road, Manuel T. Freitas Parkway, Second Street, Third Street, Bellam Boulevard, and Andersen Drive. Lincoln Avenue, Point San Pedro/N. San Pedro Roads, and D Street are other important facilities that provide cross-town access.

The Downtown Precise Plan Area is served by an extensive system of regional and local streets. Within Downtown San Rafael, the roadway network is a grid-based network of lettered north-south streets and numbered east-west streets. Many of the core Downtown blocks are 360 feet by 360 feet with roadway widths ranging from about 40 to 52 feet. The Downtown Precise Plan Area contains 53 signalized intersections and one rapid rectangular flashing beacon (RRFB) at the Fifth Avenue/Cottage Avenue intersection to facilitate safe pedestrian crossings. The Downtown Precise Plan Area roadways serve a variety of users, including people traveling by foot, bike, bus, and vehicle, as well as delivery trucks serving Downtown Businesses and residences. The multimodal roadway network proves to be a dynamic environment for users of all types.



Source: Fehr & Peers, 2020.

Figure 4.16-1
Existing Street System

The following streets and portions thereof in or adjacent to The Downtown Precise Plan Area are designated as truck routes: Francisco Boulevard, Jordan Street, Lincoln Avenue from the north line of Third Street to its intersection with Irwin Street, San Pedro Road, Second Street, Third Street, DuBois Street from Irwin Street to Woodland Avenue, Fourth Street from its westerly terminus to Second Street, Irwin Street from Third Street to Woodland Avenue, Lindaro Street from Third Street to Jordan Street, Lovell Avenue from Irwin Street to Jordan Street, and Woodland Avenue from its easterly terminus to Irwin Street.

Existing Road Segment Data

To provide a baseline for the transportation analysis, traffic counts were collected at 41 roadway segments within the city during a weekday in May 2019. The roadway counts were collected for 24 hours. During the counts, weather conditions were generally dry, no unusual traffic patterns were observed, and the San Rafael City Schools were in full session. Figure 4.16-2 displays the observed daily traffic volumes for the 41 study roadway segments.

Existing Vehicle Miles Traveled

VMT is a measure of traffic flow, determined by multiplying the number of automobile trips within a given geography by the average trip length. Unlike level of service, which is a measure of automobile delay, VMT is a measure of automobile travel and the resulting emissions. For the purposes of this EIR, VMT is estimated for a typical weekday. The efficacy of this measure is a result of several factors:

- VMT is relatively easy to measure by counting traffic on roadways at different locations. It is one of the few measures of transportation performance that has been consistently and comprehensively monitored and documented over time, primarily for the purpose of estimating air quality and GHG emissions.
- VMT bears a direct relationship to vehicle emissions, although this relationship is becoming more complex as vehicular technologies evolve. State and federal policies pertaining to vehicle efficiency and formulation of vehicle fuels suggest that on a per capita basis, emissions for most pollutants and GHG emissions will decline relative to today. However, even with emission reductions due to fuel and vehicle technology changes, future reductions in VMT per capita will result in lower air quality and GHG emissions.
- VMT can be influenced by policy in a number of different ways. Land use projects that are close to high quality transit service, located in highly walkable or bikeable areas, have higher densities, include a mix of project uses, support a better citywide jobs-housing balance (i.e., provide housing in a job rich area, or vice versa), and/or are close the core of the city (shorter trip distances to services) would generate less VMT than projects that do not have these characteristics.

Pedestrian Facilities

Sidewalks exist on most roadways within the city of San Rafael. Portions of Downtown San Rafael, particularly along Fourth Street and Fifth Avenue from Lincoln Avenue to the West End, are walkable, pedestrian-friendly streets.



Source: Fehr & Peers, 2020.

Figure 4.16-2
Existing Road Segment Average Daily Volumes

Most signalized intersections have standard crosswalk treatments, which consist of two 12-inch-wide white stripes that delineate the sides of the pedestrian walking area. Several intersections have high-visibility crosswalks that are marked using the continental pattern of crosswalk striping, which consists of a series of wide strips parallel to the curb for the length of the crossing. This includes intersections around the Transit Center/SMART station, along Fourth Street in the West End, on Second Street, Grand Avenue, Fifth Avenue, and Mission Avenue.

Within some areas, especially in older areas of San Rafael, sidewalks are nonexistent or discontinuous. Narrow sidewalks, sidewalks with traffic signals or utility poles centered in the sidewalks, and sidewalks that do not have wheelchair ramps prevent some users from accessing the existing sidewalks. Additionally, portions of sidewalk are used by both pedestrians and bicyclists due to the limited bicycle network. Overgrown vegetation and illegal parking can also inhibit access to sidewalks in some areas.

Streets that have higher traffic volumes, vehicle speeds, greater vehicle turning volumes, and/or attached sidewalks without a buffer present a less comfortable pedestrian environment. Examples of these streets include Second Street, Third Street, Hetherton Street, Irwin Street, Andersen Drive, Francisco Boulevard West, and Francisco Boulevard East.

The BPMP identified pedestrian network gaps and difficult crossing locations (i.e., crossing length, pedestrian visibility, signal timing, lack of curb ramps, etc.) based on public comments. These locations include intersections near the Transit Center (Hetherton Street, Irwin Street, Second Street, and Mission Avenue), along Grand Avenue, and at several locations in the West End.

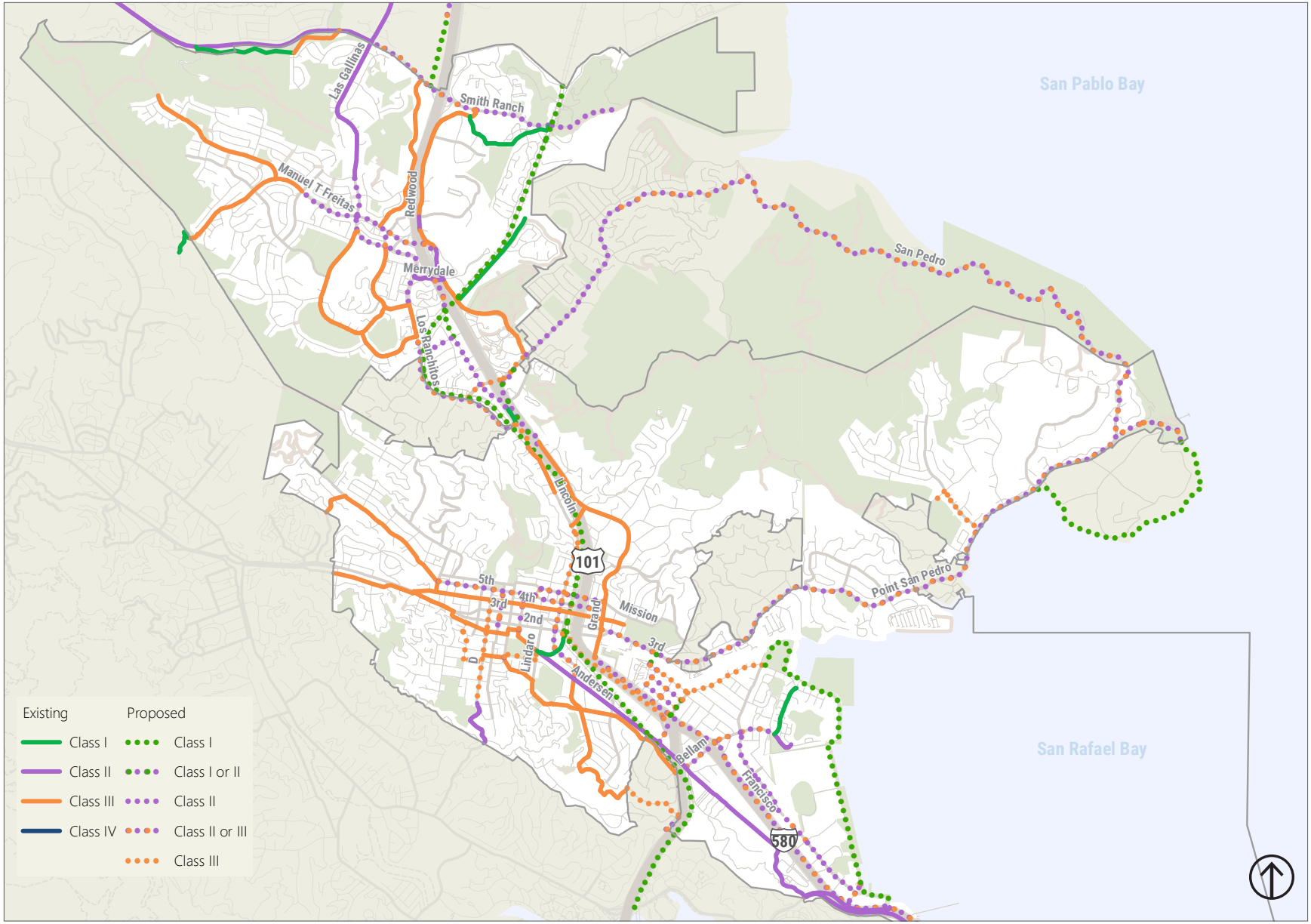
San Rafael had the second highest frequency of pedestrian collisions of 104 comparably sized cities in California, based on 2016 rankings by the state Office of Traffic Safety. According to data analyzed for the BPMP, 1 in 10 collisions in San Rafael involves a pedestrian, and 65 percent of pedestrian-involved collisions in San Rafael occurred in the Downtown Precise Plan Area.

Bicycle Facilities

Caltrans recognizes four classifications of bicycle facilities.

- Class I. Commonly referred to as a bike path or bikeway, is a facility separated from automobile traffic for the exclusive use of bicyclists.
- Class II. Commonly referred to as bike lanes, are dedicated facilities for bicyclists immediately adjacent to automobile traffic.
- Class III. Commonly referred to as bike routes, are on-street routes where bicyclists and automobiles share the road.
- Class IV. Commonly referred to as cycle tracks or protected bike lanes, are facilities that combine elements of Class I and Class II facilities to offer an exclusive bicycle route immediately adjacent to a roadway similar to a Class II facility, but provides a physical separation from traffic with raised curb, plastic delineators, or parked automobiles.

Figure 4.16-3 displays the locations of existing and proposed bicycle facilities within the City of San Rafael, as designated in the BPMP.



Source: Fehr & Peers, 2020.

Figure 4.16-3
Existing Bicycle Facilities

The City of San Rafael has a limited number of Class I (paths) or Class II (dedicated on-street lanes) facilities in the existing bicycle network. Most existing facilities are designated as Class III where bicyclists and automobiles share a travel lane. There are no existing Class IV (cycle track) facilities. Of the 172 road miles in the City, about 8 percent or 13.4 of these road miles have space dedicated for the use of bicycles. The City also has 9.27 miles of multi-use path and 18.05 miles of bicycle routes.

Outside of the Downtown Precise Plan Area, primary bicycle facilities include a Class I facility parallel to the SMART rail line that connects the northern portions of San Rafael with the Downtown Precise Plan Area; several Class II facilities, including along Las Gallinas Avenue, Lucas Valley Road, Los Ranchitos Road, Northgate Drive, and Manuel T. Freitas Parkway; and Class III facilities along several local roadways, including Los Gamos Drive, Civic Center Drive, and Point San Pedro Road. There are no existing Class IV facilities within the City of San Rafael.

Through the Downtown Precise Plan Area, bicycle facilities are limited to Class III shared routes on Fourth Street, Fifth Avenue, D Street, and Grand Avenue. Bicycle access to and from the Downtown area is limited due to a combination of topographic challenges and limited bicycle infrastructure. The primary bicycle routes to and from the Downtown Precise Plan Area are described below.

- To/from the north: North-south bicycle routes are provided by a Class I path adjacent to the SMART rail line and a Class III route along Grand Avenue. There are no alternate north-south bicycle routes due to the hills and lack of roadways and paths north of the Downtown Precise Plan Area.
- To/from the west: An east-west bicycle route is provided via a Class III shared facility on Greenfield Avenue. Greenfield Avenue runs parallel to Second Street, the major arterial providing access into San Rafael from San Anselmo.
- To/from the south: North-south bicycle access to/from the south of the Downtown Precise Plan Area is provided by a Class II lane on Andersen Avenue or a Class III shared route on D Street. Andersen Avenue provides access to the major north-south regional bikeway via the Cal Park Tunnel. D Street is the only roadway that continues over Wolfe Grade into Larkspur and Greenbrae. The hilly terrain of Wolfe Grade is used by road cyclists who often share the lane with auto traffic in both directions.
- To/from the east: A combination of Class II lanes and Class III shared route facilities are provided on Point San Pedro Road, which becomes Third Street just east of the Downtown Precise Plan Area. This route is the only major east-west bicycle route connecting to downtown. There are some bicycle facility gaps between Point San Pedro Road, Third Street and Downtown Precise Plan Area, primarily due to the demand for multiple lanes along the same route to provide auto access to and from US-101 and lack of sufficient space for dedicated bicycle facilities along those major auto routes.

According to data analyzed for the BPMP, 1 in 10 collisions in San Rafael involves a bicyclist. The City of San Rafael has the eighth highest frequency of bicycle collisions of 104 comparably sized cities in California, based on 2016 rankings by the state Office of Traffic Safety. For bicycle collisions involving cyclists younger than 15, San Rafael ranks in the top 10 of the 104 comparably sized cities. The highest collision density occurs on roadways adjacent to the Transit Center/SMART Station/Highway 101 area and within the core of the Downtown Precise Plan Area.

Public Transit

The City of San Rafael's transit network includes rail service, regional bus service, and local bus service. Figure 4.16-4 displays the City of San Rafael's existing transit facilities and network. Transit service within San Rafael is concentrated in the Downtown Precise Plan Area.

Rail Service

Sonoma-Marin Area Rail Transit (SMART) provides passenger rail service in Marin and Sonoma counties. SMART's initial 43 miles of rail corridor includes 10 stations, from the Downtown Precise Plan Area to the Sonoma County Airport. Each two-car SMART train has spaces for up to 24 bikes. SMART stations also have bike storage including bike racks and secured bike lockers. SMART also provides rail transit service that is accessible to passengers with disabilities. SMART offers a 31-Day Pass for unlimited rides for 31-consecutive days from the date of first use. The 31-Day Pass is available through Clipper and costs $200 for adults and $100 for seniors, youth, and persons with disabilities. SMART's Eco Passes are unlimited, flat rate passes available only to employers, colleges or institutions to load onto Clipper cards for their employees, students, or members. Eco Passes qualify as an employer-sponsored transit benefit, which means employees can use pretax wages to purchase them. Passes are available in four, six, or twelve month increments. One-way fares can be purchased either through Clipper or a SMART eTickets app. One-way fares range from $3.50 to $11.50 depending on trip distance, with 50 percent discounts provided for seniors, youth, and persons with disabilities.

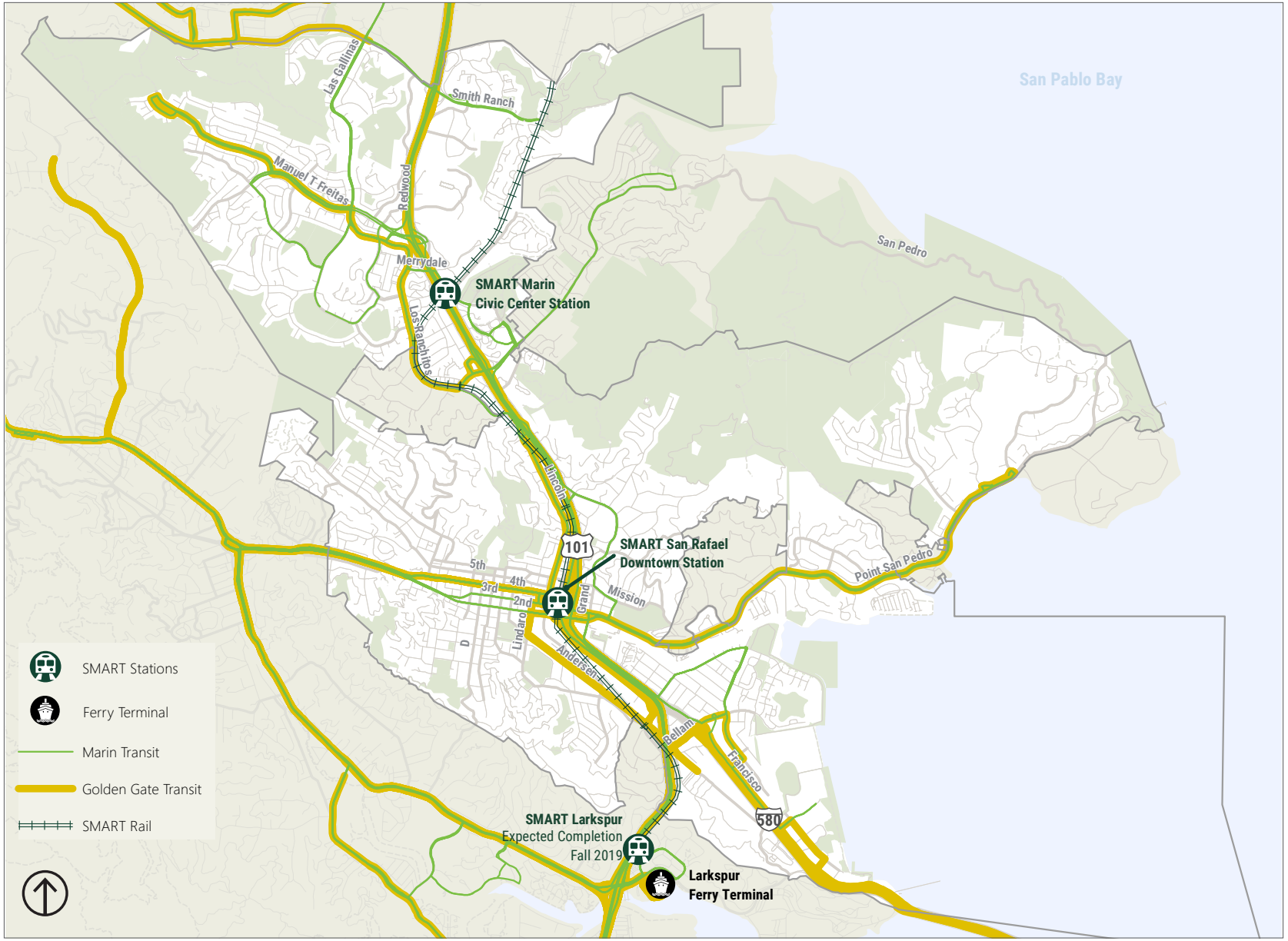
SMART served about 723,000 passengers during its first year of operations beginning on August 25, 2017. Twenty-nine (29) percent of all passengers boarded at the San Rafael Downtown Station, which equates to about 700 daily passenger boardings on weekdays. Since 2017, the Transportation Authority of Marin (TAM) and Lyft have offered a $5 discount for all "Lyft Line" rides to and from SMART stations in Marin County. The program is designed to support access to and from Marin's SMART stations and encourage carpooling options to reduce congestion and pollution. TAM has also partnered with Whistlestop to ensure this service is available to all users, including providing rides with wheelchair accessible vehicles.

A southern extension of SMART rail to the Larkspur Ferry Terminal opened in 2019. The station is located north of Sir Francis Drake Boulevard and west of Larkspur Landing Circle.

Regional Bus Service

The Golden Gate Bridge and Highway Transportation District (GGBHTD) directly operates two fixed-route transit services: Golden Gate Transit regional bus service and Golden Gate Ferry. Regional bus service began in 1972 and is provided on 26 fixed routes. These routes fall into three categories:

- Basic routes provide daily service throughout the day and evening between San Francisco, Marin, Sonoma, and Contra Costa counties.
- Commute routes provide weekday service primarily during morning and afternoon peak periods between San Francisco, Marin, and Sonoma Counties.
- Commute Shuttle routes provide weekday service primarily during morning and afternoon peak periods and are designed to supplement other GGBHTD services.



Source: Fehr & Peers, 2020.

Figure 4.16-4
Existing Transit Facilities and Network

Basic routes that stop at the San Rafael Transit Center include routes 30 (San Rafael to San Francisco), 40 and 40X (San Rafael to El Cerrito, as well as El Cerrito BART Station), 70 (Novato to SF) and 101 (Santa Rosa to San Francisco). Commute routes that stop at the San Rafael Transit Center include routes 27 (San Anselmo to San Francisco) and 44 (Lucas Valley to San Francisco).

Local Bus Service

Marin Transit provides a total of 29 fixed routes, including nine local routes, six community shuttle routes, eleven supplemental school routes, two rural fixed routes, and one Muir Woods shuttle service within Marin County. Marin Transit also offers Connect, an on-demand service available within Northern San Rafael. Marin Transit bus and shuttle services carried over 3.2 million passenger trips in 2017.

Marin Transit owns 95 vehicles including 32 paratransit vehicles, 18 hybrid diesel-electric buses, 12 community shuttles, ten Muir Wood shuttle vehicles, ten articulated vehicles, nine Stagecoach vehicles, two battery electric (zero emission) buses, and two supplemental school vehicles. Marin Transit acquired the two battery electric buses, which can seat 32 passengers, in September 2018. Staff are evaluating performance, reliability, cost, and scalability.

Marin Transit offers a 31-Day Pass for unlimited rides for 31-consecutive days from the date of first use. The 31-Day Pass costs $80 for adults and $40 for seniors, youth, and persons with disabilities. A 7-Day Pass costs $20 for adults and $10 for seniors, youth, and persons with disabilities. A 1-Day Pass costs $5 for adults and $2.50 for seniors, youth, and persons with disabilities. A one-way cash fare costs $2 for adults and $1 for seniors, youth, and persons with disabilities.

Marin Transit offers a six month or annual Youth Pass through participating Marin County schools. With the pass, registered Marin County students and youth ages 18 and under ride on local routes in Marin without paying any additional fare. The Youth Pass costs $175 per six-month period or $325 for a year.

Local transit routes that stop at the San Rafael Transit Center include nine fixed route, four community shuttle, and one West Marin Stagecoach route. Fixed routes 22, 23, 23X, and West Marin Stagecoach route 68 connect the San Rafael Transit Center to destinations to the west via Fourth Street and Red Hill Avenue. Fixed route 23, 23X, 29, 35, and 36 connect the San Rafael Transit Center with the Canal Neighborhood to the southeast. Fixed route 35 and Community Shuttle route 257 connect the San Rafael Transit Center with destinations to the north via Lincoln Avenue. Marin Transit Community Shuttle routes 233 and 257 connect the San Rafael Transit Center to destinations to the north via Grand Avenue.

Transit Centers

Downtown San Rafael SMART Station

The Downtown San Rafael SMART Station is bounded by Fourth Street, Third Street, and Tamalpais Avenue. It is located just north of the San Rafael Transit Center located between Third Street and Second Street. The Downtown San Rafael SMART Station serves more boardings than any other station along the SMART line. For current SMART riders using a Clipper card, free shuttle service to the Larkspur Ferry Terminal is available.

Civic Center SMART Station

The Civic Center SMART station is bounded by Civic Center Drive and Merrydale Road and located underneath US-101. It is located just west of the Marin County Civic Center. This station is less utilized than the San Rafael SMART Station with only six percent of total boardings along the SMART line.

San Rafael Transit Center

The San Rafael Transit Center serves as the regional transit hub for Marin County. It connects rail service, bus service, airporter service, and taxi service. Transfers are provided to San Francisco, Sonoma and Contra Costa counties.

The current 17-bay transit center serves 9,000 boardings and alightings on over 500 buses on a typical weekday. Nearly half of the trips made by weekday riders have origins or destinations within the Downtown Precise Plan Area. Just over half are transferring between buses or between bus and rail at the transit center. With 16 bus bays occupied during peak times, the San Rafael Transit Center is currently operating at or beyond its capacity.

A multi-year process to develop a relocated transit center for San Rafael has been underway since early 2018. The current transit center is affected by the extension of Sonoma Marin Area Rail Transit (SMART) system to Larkspur. Five alternative station concepts were developed initially as part of the planning process. The planning process subsequently narrowed the number of station concepts to three alternatives that are being evaluated in the environmental review. Golden Gate Transit is leading the relocation analysis, environmental clearance, and preliminary design process. The environmental impact study for the relocated transit center is anticipated to be complete in mid-2022, allowing for the selection of a preferred alternative. This environmental assessment assumes a relocated transit center in close proximity to the existing transit center will be operational by 2040.

Mobility Services and Programs

Shared Mobility Options

According to the Shared-Use Mobility Center, shared mobility is defined as transportation services and resources that are shared among users, either concurrently or one after another. The services are grouped into five different shared mobility typologies:

- Bikesharing/Scooter-sharing
- Carsharing
- Ridesharing/Ridehailing
- Public Transit
- Microtransit (e.g., shared scooters)/Shuttles

Bikesharing, scooter-sharing, or microtransit services are not currently provided in San Rafael. They are, however, provided in many other Bay Area cities. SMART received an $800,000 grant from the Metropolitan Transportation Commission (MTC) to fund a pilot for bikeshare stations at SMART stations. The bikeshare bikes will provide SMART riders with an alternative for the “last mile” of their journey

beginning in 2021. A minimum of 300 GPS-enabled e-bikes will initially be allocated at designated SMART stations.

Carsharing and ridesharing/ridehailing activities are generally concentrated in the Downtown Precise Plan Area. Limited carsharing options are provided by several ZipCar spaces near the San Rafael Transit Center.

Traditional ridesharing includes carpooling, vanpooling, and real-time matching of drivers and passengers through mobile apps in which the passenger pays a share of the trip cost. Ridehailing providers such as Uber and Lyft use online platforms to connect passengers with drivers who use personal, non-commercial, vehicles. UberPOOL and Lyft Line are ridesharing options that allow drivers to carry multiple passengers who split the cost of a trip.

Taxis and limos are regulated for-hire vehicles. Numerous companies provide these services in San Rafael.

Safe Route to School (SR2S) Program

The Transportation Authority of Marin (TAM) administers a Safe Routes to School (SR2S) Program[4], which works to relieve traffic congestion around schools by promoting alternatives to commuting to school, such as walking, biking, taking the bus and carpooling. In addition, the program helps improve safety, promote a healthy lifestyle for youth and enhance the sense of community in neighborhoods. It does this through classroom education, special events, infrastructure improvements, a crossing guard program, and other strategies.

To address the unique needs of each school district, a Task Force is formed to bring together SR2S staff, parent leaders, elected officials and staff from the local jurisdiction, traffic engineers, school district representatives, law enforcement personnel and neighborhood leaders.

The TAM SR2S program has been in operation since 2000 and involves 58 schools and more than 26,500 students in Marin County.

Transportation Demand Management

SRMC Chapter 5.81 details the City's Trip Reduction Ordinance, including trip reduction and travel demand requirements. The trip reduction requirements are imposed upon employers within the City with more than 100 employees at an individual work site. The ordinance requires these employers to disseminate trip reduction information regarding alternative modes of travel (e.g., carpools, vanpools, transit, bicycling, telecommuting, flexible work hours, etc.), conduct an annual employee trip survey that shall be submitted to the City, and designate an employee transportation coordinator to be responsible for administering the requirements of the Trip Reduction Ordinance. Should another agency (such as the BAAQMD) impose more stringent requirements on employers with the City, then any employer within the city that meets those requirements is deemed in compliance with this ordinance.

[4] https://www.tam.ca.gov/projects-programs/safe-routes-to-school/

Transportation Safety

The 2018 Marin Travel Safety Plan[5] was a collaborative effort between unincorporated Marin County and all 11 incorporated cities and towns. The purpose was to provide a systemic safety analysis for motorists, motorcyclists, bicyclists, and pedestrians on non-state arterial and collector roadways. The Marin Travel Safety Plan was funded through a Systemic Safety Program grant provided by Caltrans. The intent was to provide a proactive collision analysis, identify high risk locations and collision patterns, develop a list of systemic low-cost and longer-term countermeasures, and help secure funding to address key safety issues.

During the five-year period in which crashes were evaluated, 35 percent of all crashes in the county occurred in the City of San Rafael, higher than the city's 23 percent share of the total county population. Notable collision profiles in San Rafael include high rates of pedestrian collisions involving seniors or youth under 15, bicycle collisions involving youth under 15, speed related collisions, and driving under the influence with drivers under the age of 21. In these categories, the City of San Rafael has consistently ranked among the top 10 cities in victims killed and injured, among 105 California cities with similar-sized populations, according to the California Office of Traffic Safety.

The 2018 Marin Travel Safety Plan identified safety countermeasures for 20 corridors and 8 intersections in the City of San Rafael. Marin County received $2.8 million in Highway Safety Improvement Program grant funds from Caltrans in the most recent funding cycle to implement safety countermeasures identified in the plan at 51 signalized intersections in unincorporated Marin County and within 11 incorporated cities.

Transportation Network Disruptions

This section provides a description of transportation network disruptions that may result from natural hazards including wildfires and flooding from sea level rise. The natural hazards described in this section are discussed elsewhere in this EIR and the following provides context for how the natural hazard relates to the transportation network.

Wildfires

As described in Chapter 4.18, Wildfire, the wildland-urban interface (WUI) is defined is defined as any area where structures and other human development meet or intermingle with wildland vegetation.[6] Many San Rafael neighborhoods along the periphery of urban development are located within the WUI (see Figure 4.18-2). Access to these neighborhoods is commonly limited to one or two locations due to topographic features. These access constraints can impede evacuation during uncontrolled wildfire events.

[5] Marin Travel Safety Plan, 2018. https://www.marincounty.org/userdata/dpw/Marin%20County%20Travel%20Safety%20Plan%20-%20Final%20Report.pdf, accessed November 2020.

[6] Cal California Office of Emergency Services. 2018. California State Hazard Mitigation Plan.

San Rafael Wildfire Prevention and Protection Action Plan—conditionally approved in March 2019 and formally adopted in August 2020 following review by a steering committee—provides a series of prescriptions, programs, and ordinance updates to make the city more fire and disaster resistant. Action 32 of the Wildfire Prevention and Protection Action Plan states that the City shall "review Countywide evacuation plans and expand existing plans to address San Rafael's unique needs, neighborhoods and resources, including possible water evacuations." This effort would establish additional transportation network redundancies and potentially reduce the burden on a single egress artery during an emergency.

Flooding

As discussed in Chapter 4.10, Hydrology, of this Draft EIR, San Rafael is subject to flooding of which the effects of sea level rise are expected to exacerbate these flood risks for San Rafael in the coming decades. Most shoreline damage from sea level rise will occur as a result of coastal storms in combination with higher sea levels, which can temporarily raise sea levels by an additional two feet. The key factors that contribute to coastal flooding include high tides, storm surge, high waves, and high runoff rates from rivers and creeks.[7] The projected sea level rise for the year 2050 (the approximate time horizon of the General Plan) and 2100 with and without the 100-year storm surge, for the city is shown on Figures 4.10-4 through 4.10-7, and a focused look at the Downtown Precise Plan Area for these scenarios is shown on Figures 4.8-10 through 4.8-13. As shown, the effects of sea level rise without additional flooding caused by storm surge would inundate significant portions of Francisco Boulevard East and Andersen Drive east of Bellam Boulevard, in addition to isolated portions of roadways within the Canal District. Alternatively, a scenario with sea level rise plus additional flooding from a storm surge would inundate most roadways north of I-580, including those within the Canal District, as well as significant portions of Point San Pedro Road (Peacock Gap and Marin Yacht Club areas), North San Pedro Road (China Camp area), Andersen Drive, Irwin Street, Lindaro Street, and most roadways in the Downtown Precise Plan Area east of A Street.

4.16.2 METHODOLOGY

This transportation evaluation was prepared in accordance with the requirements of CEQA to determine if significant transportation impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project.

Analysis Scenarios

The transportation modeling and analysis was conducted for the following scenarios.

- Existing Conditions. The existing setting is based on traffic counts collected in the spring of 2019. This scenario serves as the baseline or point of comparison for environmental impact significance determinations related to the 2040 General Plan scenario.

[7] San Francisco Bay Conservation and Development Commission, 2011, *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline.*

- **2040 No Project.** This scenario assumes conditions with 2040 land use forecasts and transportation infrastructure assumptions for the City of San Rafael based on Plan Bay Area 2040 as developed by MTC.
- **2040 General Plan**. This scenario assumes conditions with 2040 land use forecasts and transportation infrastructure assumptions for the City of San Rafael based on the proposed 2040 General Plan policies including the preferred land use plan.

2040 No Project Transportation System

The following roadway improvements or transportation programs, as provided by Transportation Authority of Marin (TAM) staff, are incorporated in the 2040 No Project scenario.

- **Minor Highway Improvements.** Highway interchange improvements, Bellam Boulevard improvements, bicycle/pedestrian crossings, and auxiliary lanes
- **Minor Roadway Projects.** 3rd and 2nd Street improvements, Highway Safety Improvement Program projects, and sea level rise improvements
- **Minor Transit Improvements.** Fleet expansion/facilities, Access to Transit, and Transit Service Expansion, New Bicycle & Pedestrian Facilities, North South Greenway Projects, SMART Multi Use Path, Cross Marin Bikeway, 2nd to Anderson Path, Grand Avenue, East Francisco Boulevard, Approaches to Richmond San Rafael Bridge, Safe Pathways Projects, Small Safety Projects, and Safe Route to Transit Projects
- **Management Systems.** Ramp Metering Phase 1 & 2, and Innovative Technology
- **Safety and Security.** Safe Routes to School Program and Crossing Guard Program
- **Travel Demand Management.** TDM Program, Alternative Fuels Program, and Traveler Information Programs
- **Multimodal Streetscape Improvements.** Local Road Improvements

2040 General Plan Transportation System

The roadway improvements and programs shown in Table 4.16-1 are included in the 2040 General Plan scenario.

TABLE 4.16-1 MAJOR PLANNED MOBILITY IMPROVEMENTS, 2020-2040

1. Interchange Projects (*)	
Includes modifications to interchanges for capacity, safety, access, and improved circulation.	
1A	**US-101/Freitas Parkway Interchange West.** Reconfigure the US-101 off-ramp / Freitas Parkway (Del Presidio) and Northgate Rd/ Freitas Parkway intersection to address safety, circulation, and capacity issues. Improvements would be coordinated with ongoing development plans and Northgate PDA Specific Plan/ Precise Plan process where appropriate.
1B	**US-101/ Freitas Parkway Interchange East.** Reconfigure the US-101 NB off-ramp/Civic Center Drive intersection to address safety, circulation, and capacity issues. Improvements would be coordinated with ongoing development plans and Northgate PDA, and future planning process where appropriate.
1C	**Smith Ranch Road/Lucas Valley Road Multimodal Improvements at US-101.** Road widening and additional lane capacity from Los Gamos to Redwood Highway. Improve pedestrian and bicycle access across the US-101 underpass by reconstructing the bridge to provide dedicated bicycle facilities and wider pedestrian sidewalks.
2. Downtown Area Improvements	

TABLE 4.16-1 MAJOR PLANNED MOBILITY IMPROVEMENTS, 2020-2040

Includes multimodal improvements identified by the Downtown Precise Plan. Projects and improvements may include projects from other adopted City plans but are intended to achieve the vision, goals and objectives of the Downtown Plan. Also includes first/last mile improvements for SMART Station/Transit Center area (pedestrian, bicycle, lighting, wayfinding).	
2A	Downtown roadway and intersection improvements (traffic signals, roundabouts, pedestrian/bicycle, ADA, and/or turn lane modifications) and improvements to gateway streets to Downtown, including: ▪ Downtown San Rafael Remaining One-Way Street Conversions, per Downtown Precise Plan ▪ New Signal at Fifth/H St ▪ New Signal at First/C St ▪ New Signal at First/D St ▪ New Signal at Fourth/Union St ▪ New Signal or Roundabout at Mission/Court St
2B	**US-101/ Downtown San Rafael Interchange.** Improvements to Irwin St, Hetherton Ave, 2nd St, and 3rd St in the vicinity of the NB off-ramp and SB on-ramp.
2C	**Fourth Street (West End) Intersection Realignment**. Re-align Fourth Street/Second Street/Marquard Avenue intersection.
2D	**Second Street Multimodal Improvements.** Improve Second Street corridor operations while addressing pedestrian and bicycle safety at crossing locations, and widen sidewalks and remove parking where feasible
2E	**Fourth Street Multimodal Improvements.** Improve pedestrian and bicycle connections while maintaining high quality transit route along 4th Street. Improvements include converting parking to loading, widening sidewalks, and improving the bus and bike experience. Also Includes 4th Street signal and ADA upgrades.
3. Active Transportation Projects	
Includes multimodal improvements and programs with a focus on pedestrian and bicycle improvements identified in the Bicycle and Pedestrian Master Plan.	
3A	Includes various projects identified in the 2018 BPMP, consistent with the priorities expressed in that Plan.
4. Complete Streets and Corridors (**)	
Corridor level improvements including reconstruction of sidewalks, streets, pavement, signing, striping, and crossing improvements, with the objective of improving peak hour traffic flows and accommodating modes other than just motorized vehicles.	
4A	**Lincoln Avenue Peak Period Lanes/Parking Restrictions.** Extend the existing PM peak period parking restrictions, to allow for two lanes in each direction during both AM and PM peak periods, from Hammondale Court/SB US-101 ramps to Mission Ave. Provide additional parking in corridor. Include ADA upgrades, crossing improvements, and other multimodal improvements/accommodations
4B	**Northgate Area Intersection and Complete Streets Improvements.** Includes Las Gallinas/Northgate and Las Gallinas/Del Presidio intersections. Also includes improvements to Las Gallinas Avenue and Los Ranchitos Road, Northgate Drive, and Del Presidio Blvd, and continued development of North San Rafael Promenade. Additional improvements to be identified through future PDA planning process.
4C	**Francisco Boulevard East Corridor Improvements.** Increase capacity from Bellam to Grand Avenue bridge and install signal, ADA, and pedestrian improvements at Harbor St. Additional improvements to be identified through future PDA planning process.
5. Intersection Improvements (**)	
Intersection improvements including traffic signals, intersection realignments/reconfigurations, and other major changes to spot locations that are outside the Downtown Precise Plan area.	
5A	**Fourth Street (Miracle Mile) Intersection Improvement**. Improve performance of Fourth Street signal at Ross Valley Dr and Santa Margarita Dr, including ADA upgrades.
5B	**Lincoln/DuBois/Irwin.** Consider new signal, roundabout, or other intersection improvement to improve safety and traffic flow; right-of-way required.
6. Smart Infrastructure (Technology)	
Traffic signal and communication infrastructure upgrades, including monitoring equipment, fiber optic/communication systems, and other technology enhancements to facilitate smart management of transportation system.	
6A	**Intersection Technology.** Traffic signal equipment, cameras, modems, wireless, Bluetooth, automated data collection, etc.
6B	**Corridor Communication System.** Fiber optic cable and conduit along major arterials and central City system upgrades.

Notes:
(*) Excludes northbound US-101 to eastbound I-580 connector, as this is a regional transportation improvement sponsored by TAM.
(**) Additional improvements may be identified through anticipated future plans to be prepared for the North San Rafael Town Center PDA and Southeast San Rafael PDA.

VMT Forecasts

This section describes the methodology for VMT forecasts developed for this transportation assessment and as supporting data for other assessments in the CEQA document including the GHG assessment. The CEQA Guidelines Section 15064.3(b)(4) establish that the lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence.

The VMT forecasts generated for this CEQA assessment were produced using the Transportation Authority of Marin Demand Model (TAMDM). For this CEQA assessment, the 2015 base year for TAMDM was updated and validated for a new 2019 base year for the City of San Rafael to be consistent with the data collected for this evaluation. This analysis includes a 2040 No Project scenario that is based on the TAMDM horizon year and a 2040 Plus Project scenario that reflects land use changes and transportation improvements consistent with the proposed General Plan 2040 and Downtown Precise Plan. The 2019 base year model developed for the San Rafael General Plan was validated based on model confidence thresholds defined in the California Transportation Commission 2017 RTP guidelines. The model validation measures in the RTP guidelines were met for all 53 study road segments in the City of San Rafael as shown in Table 4.16-2 below.

TABLE 4.16-2 2017 CALIFORNIA REGIONAL TRANSPORTATION PLAN GUIDELINES MODEL VALIDATION RESULTS

Validation Measure	AM Peak Period (4-Hour)	PM Peak Period (4-Hour)	Daily	Threshold
Volume-to-Count Ratio (Sum of all Location)[1] =	1.01	1.01	0.97	None Specified[2]
Percent of Links within Caltrans Deviation Allowance[1] =	87.8%	92.7%	78.0%	At Least 75%
Percent Root Mean Square Error (RMSE)[1] =	32.1%	34.6%	31.3%	Below 40%
Correlation Coefficient[1] =	0.90	0.89	0.91	At Least 0.88
Number of Links/Validation Locations =	53	53	53	

Notes:
[a.] Static Validation Criteria and Thresholds, *2017 California Regional Transportation Plan Guidelines*, California Transportation Commission.
[b.] Although no specific threshold is specified, a threshold of "within 10%" of the sum of all locations was applied.

The VMT estimates were produced using the updated 2019 TAMDM model for all 1,400 analysis zones within Marin County as well as for the entire Bay Area. Consistent with recommendations in the OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA*, three different VMT quantification methodologies were developed in conjunction with development of TAMDM to produce measures of VMT to provide a range of VMT quantification options depending on the type of project being evaluated.

- Total VMT-Daily VMT of all vehicle trips, vehicle types, and trip purposes for all project land uses. This metric is typically used for evaluation of area plans and transportation projects. This metric may also be provided on a per service population (i.e., sum of residents and employees) basis.

- Partial Home VMT Per Resident-Daily VMT by light-duty vehicles for all trips that begin or end at a residential land use, divided by residents. This metric is used for evaluation of residential land uses.
- Partial Work VMT Per Employee-Daily VMT by light-duty vehicles for work trips (that is, trips that have one end at a workplace and one end at a residence), divided by employees. This metric is used for evaluation of office or other employment land uses.

4.16.3 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant transportation impact if it would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

4. Result in inadequate emergency access.

5. Result in cumulative impacts related to wildfire.

4.16.3.1 CITY OF SAN RAFAEL SIGNIFICANCE CRITERIA

This section describes the specific criteria that will be applied to determine project impacts related to conflicting with applicable plans addressing the circulation system or being inconsistent with CEQA Guideline Section 15064.3(b).

Vehicle Miles Traveled

The San Rafael City Council approved the above CEQA VMT thresholds of significance on July 6, 2020, to implement SB 743 and subsequent changes to CEQA Guidelines. The VMT thresholds are consistent with guidance provided by OPR[8] for evaluating transportation impacts in CEQA. For residential uses, OPR provides the option of using either regional VMT per resident or citywide VMT per resident as the CEQA threshold. The City Council selected the regional VMT per resident baseline as the threshold for residential uses because the 2019 citywide Home VMT Per Resident baseline value is lower than the 2019 regional Home VMT Per Resident value as measured using the new Marin County travel model developed by TAM, and using the regional baseline value would align the CEQA threshold with the City's policy objectives of supporting new housing in the Downtown Precise Plan Area and Downtown San Rafael SMART Station PDA and TPA, as well as the City's other PDAs and TPAs including the North San Rafael PDA,

[8] *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR, April 2018.

Civic Center Smart Station TPA, and Southeast San Rafael / Canal PDA. As described throughout this EIR, the General Plan 2040 is anticipating that these areas will absorb most of the City's future growth.

VMT impacts would be significant if:

- Total VMT Per Service Population exceeds 15 percent below average baseline rate for full nine-county Bay Area
- Home VMT Per Resident exceeds 15 percent below average baseline rate for full nine-county Bay Area
- Work VMT Per Employee exceeds 15 percent below average baseline rate for full nine-county Bay Area

Bicycle/Pedestrian

Bicycle/pedestrian impacts would be significant if the proposed project:

- Caused a substantial inconvenience or substantial reduction in quality of service for users of existing bicycle or pedestrian travel facilities
- Substantially reduced bicycle or pedestrian access
- Substantially reduced safety for bicyclists or pedestrians

Transit

Transit impacts would be significant if the proposed project:

- Increased substantial growth or concentration of population beyond the capacity of existing or planned public transit facilities
- Increased demand for public transit service to such a degree that accepted service standards are not maintained
- Reduced availability of public transit to users, or interfered with existing transit users

4.16.4 IMPACT DISCUSSION

TRAN-1	**Implementation of the proposed project could generate an increase in Vehicle Mile Traveled that may have a significant impact on the environment.**

General Plan 2040

Land Use VMT Impact

The California Air Resources Board recognizes that reducing VMT is a key objective to meeting California's GHG emission reduction goals. The San Rafael 2019 CCAP indicates that 62 percent of GHG emissions in the city of San Rafael in 2016 came from vehicle trips generated by San Rafael residents and businesses (i.e., the transportation sector). Future potential development and the planned expansion of the roadway system under the proposed General Plan 2040 would contribute to an increase in VMT in the EIR Study Area.

Table 4.16-3 provides a comparison of the change in VMT and VMT efficiency metrics (i.e., per service population, per capita, or per employee) for the EIR Study Area between the CEQA baseline year (2019) and the General Plan horizon year (2040) conditions. Forecasts for the four scenarios Total VMT, Total VMT Per Service Population, Home VMT per resident, and Work VMT Per Employee are shown in Table 4.16-3. The final row in Table 4.16-3 shows the percent change when comparing the VMT in 2040 to the corresponding average baseline (2019) rates for the nine-county Bay Area Region for the baseline year (2019), as recommended by OPR for CEQA transportation assessments. The citywide VMT presented in Table 4.16-3 includes VMT for the entire sphere of influence area including the Downtown Precise Plan Area. The VMT forecasts for the proposed General Plan 2040 were extracted from an updated version of the TAM travel demand model with planned General Plan land use growth.

TABLE 4.16-3 DAILY VEHICLE MILES TRAVELED (VMT) FOR CITY OF SAN RAFAEL (INCLUDING SPHERE OF INFLUENCE AREA)

SCENARIO	Total VMT	Total VMT Per Service Population	Home VMT Per Resident	Work VMT Per Employee
Baseline (2019)	3,614,000	30.1	12.2	18.1
2040 No Project	3,812,000	29.5	11.4	17.5
2040 General Plan	3,738,000	28.5	11.3	16.9
REGIONAL BASELINE				
Bay Area Region (2019)	313,500,000	27.2	13.4	16.9
PERCENT CHANGE – San Rafael 2040 VMT Rates Compared to Baseline Rate for Bay Area Region				
2040 General Plan		+3.2%	-15.7%	+0.3%

Notes:
[a] Service Population = San Rafael residents plus employees.

As shown in Table 4.16-3, the Total VMT Per Service Population for the City of San Rafael (including the SOI area) is forecast to decline from baseline to 2040 conditions with the proposed General Plan 2040, but would be 3.2 percent above the corresponding average baseline (2019) rate for the full nine-county Bay Area. The VMT threshold established by the City Council in July 2020, consistent with OPR guidance, calls for a reduction by 2040 of 15 percent below the baseline regional average. As such, while the proposed General Plan 2040 results in a reduction in VMT Per Service Population by 2040, the VMT threshold of 15 percent below the current regional average would not be met.

As recommended by OPR, partial VMT data was also developed for vehicle trips generated by housing (Home VMT) and employment uses (Work VMT) and are also evaluated against the 15 percent VMT reduction threshold.

As shown in Table 4.16-3, Home VMT Per Resident in San Rafael is forecast to decline from baseline to 2040 conditions with the proposed General Plan 2040 and would be 15.7 percent below the corresponding average baseline (2019) rate for the full nine-county Bay Area. As such, residential development proposed with the proposed General Plan 2040 would meet the VMT threshold for Home VMT. Most residential growth, under the proposed General Plan 2040, would be multi-family units in the Downtown Precise Plan Area with access to the SMART rail station and the San Rafael Transportation Center that is served by 19 Marin Transit and Golden Gate Transit bus routes. Residential units in the Downtown Precise Plan Area would be within walking distance of jobs, retail uses, and services. As such,

the VMT generated by these units would be substantially lower than the overall VMT for current residential units in San Rafael and contribute to meeting VMT reduction goals for residential uses in San Rafael. As such, the project impact on Home VMT Per Resident is considered *less than significant*.

Work VMT Per Employee in San Rafael is forecast to decline from baseline to 2040 conditions with the proposed General Plan 2040 but would be 0.3 percent above the corresponding average baseline (2019) rate for the full nine-county Bay Area, which does not meet the threshold of reducing Work VMT Per Employee to 15 percent below the regional average. As such, while the proposed General Plan 2040 results in a reduction in Work VMT Per Employee by 2040, the VMT threshold for employment uses would not be met.

General Plan 2040 Policies

Growth within the EIR Study Area would contribute to VMT impacts and the proposed General Plan 2040 includes goals, policies, and programs to reduce VMT.

As described in Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, the proposed General Plan 2040 includes over 200 goals, policies, and programs to contribute to reducing GHG Emissions, but does not include quantified VMT reduction programs. However, because the transportation sector is the largest source of GHG emissions (62 percent), many of the GHG policies in General Plan 2040 would also result in VMT reductions as a means of reducing GHG emissions.

GHG emission and related policies that would reduce VMT in General Plan 2020 are in the Land Use (LU) Element; Conservation and Climate Change (C) Element; Mobility (M) Element; Community Services and Infrastructure (CSI) Element; Housing (H) Element; Economic Vitality (EV) Element; Equity, Diversity, and Inclusion (EDI) Element; and Parks, Recreation, and Open Space (PROS) Element. (See Chapter 4.8, Greenhouse Gas Emissions).

The following list of General Plan goals, policies and programs from the Mobility (M) Element would directly and indirectly result in the reduction of VMT by incentivizing alternate modes of transportation, creating safe environments for pedestrians and bicyclists, and establishing parking spaces for more sustainable modes of travel. contain goals, policies, and programs that require local planning and development decisions to reduce GHG emissions.

Goal M-1: Regional Leadership in Mobility. Take a leadership role in developing regional transportation solutions.

- Policy M-1.1: Regional Transportation Planning. Actively coordinate with other jurisdictions, agencies, and service providers to improve the local and regional transportation system and advocate for the City's interests. Work cooperatively to improve transit and paratransit services, achieve needed highway improvements, and improve the regional bicycle and pedestrian networks.
- Policy M-2.3: Cost-Benefit Considerations. Consider the relative costs and benefits of transportation improvement projects, including the amount and source of funding, the potential number of people who will benefit, the expected impact on vehicle miles traveled and climate goals, the cost and time impacts on all travelers, the social and equity impacts, the effects on the environment and public safety, and similar factors.

- Program M-2.3A: Cost-Benefit Analysis. Conduct cost-benefit analyses as part of the design process for proposed transportation projects, including the criteria listed above and other factors that may be relevant.
- Program M-2.4B: Reducing Vehicle Idling. Support transportation network improvements to reduce vehicle idling, including synchronized signal timing.

Goal M-3: Cleaner Transportation. Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.

- Policy M-3.1: VMT Reduction Standard. Achieve State-mandated reductions in Vehicle Miles Traveled by requiring development and transportation projects to meet specific VMT metrics. In the event a proposed project does not meet these metrics, require measures to reduce the additional VMT associated with the project, consistent with thresholds approved by the City Council.
  - Program M-3.1A: VMT Analysis Guidelines. Develop local guidelines for calculating the projected VMT associated with future development projects and transportation improvements. The guidelines also should cover administration, screening criteria, and appropriate Transportation Demand Management measures and monitoring procedures. All VMT metrics should be reassessed at least once every four years and revised as needed to reflect changing conditions.
- Policy M-3.2: Using VMT in Environmental Review. Require an analysis of projected Vehicle Miles Traveled (VMT) as part of the environmental review process for projects with the potential to significantly increase VMT. As appropriate, this shall include transportation projects and land use/ policy plans as well as proposed development projects.
  - Program M-3.2C: Mitigation Measures for VMT Impacts. Develop and implement mitigation measures that can be applied to projects with potentially significant VMT impacts in order to reduce those impacts to less than significant levels.
- Policy M-3.3: Transportation Demand Management. Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, work schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.
  - Program M-3.3A: Develop TDM Program Guidelines. Develop TDM Program Guidelines – or work in partnership with other local governments to develop Guidelines-- than can be used to mitigate potential VMT increases in new development and encourage reductions in existing development.
- Policy M-3.7: Design Features that Support Transit. For projects located in or near transit hubs such as Downtown San Rafael, incorporate design features that facilitate walking, cycling, and easy access to transit.
- Policy M-3.8: Land Use and VMT. Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses.

Goal M-7: Well-Managed Parking. Manage parking in a way that meets resident, business, and visitor needs while supporting the City's goal of a more sustainable transportation system.

- Policy M-7.6: Off-Street Parking Standards. Maintain off-street parking standards that adequately respond to demand, minimize adverse effects on neighborhoods, and sustain local businesses.
  - Program M-7.6A: Adjustments to Parking Standards. Periodically adjust off-street parking requirements to respond to data on parking needs, and trends in vehicle design, car ownership, and travel behavior.
  - Program M-7.6B: Parking Reductions. Allow reduced parking subject to findings that a project will have lower vehicle ownership rates (for example, for senior housing or housing adjacent to a SMART station).
- Policy M-7.8: Parking for Alternative Modes of Transportation. Designate parking spaces to incentivize and encourage carpooling, electric vehicles, and other more sustainable modes of travel.

The City considered the OPR guidance when developing the policy direction of the General Plan 2040. The City recognizes that VMT reductions may be achieved through the implementation of individual projects in the future and has included General Plan Policy M-3.1, which requires future development and transportation projects to meet specific VMT metrics. City Council action in July 2020 identified a 15 percent reduction in the applicable VMT efficiency metric from baseline conditions as the current VMT threshold, consistent with OPR guidance.

By implementing the policies described above, the proposed project would result in a transportation system that allows greater utilization of the roadway system, which would minimize the need to expand existing capacity, so that the City can focus on building complete streets, improving walking and biking as viable travel options, and making transit more effective. These goals are directly related to the City's desires to improve community health, create livable neighborhoods, reduce air pollution, and reduce greenhouse gas emissions. A key part of these changes is a shift in CEQA from automobile level-of-service standards to VMT embedded in Policy M-3.1, which will require new development projects to reduce VMT.

New land use plans or development projects must demonstrate that VMT produced by the proposed project meets the applicable VMT reduction threshold. Table 4.16-4 describes candidate VMT reduction strategies, informed by VMT reduction measures identified in the California Air Pollution Control Officers Association's 2010 *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures*, that individual projects can use to achieve additional reductions beyond those incorporated in the proposed project. Table 4.16-4 focuses on strategies for employment uses, as most residential development projects would be presumed to result in a less-than-significant VMT impact based on the data and analysis described above.

TABLE 4.16-4 VMT REDUCTION MEASURES

CATEGORY	DESCRIPTION OF VMT REDUCTION MEASURE
Land Use/Location	Land use-related measures such as project land use mix, density, location, and efficiency related to other housing and jobs; and diversity of uses within the project. Also includes access and proximity to destinations, transit stations, and active transportation infrastructure.
Site Measures	Establishing or connecting to a pedestrian/bike network; traffic calming within and in proximity to the project; car sharing programs; shuttle programs.
Transit System Improvement Measures	Improvements to the transit system including expansion, service frequency, types of transit, access to stations, station safety and quality, parking (park-and-ride) and bike access (to transit itself and parking), last-mile connections. (Can be achieved through Travel Demand Management program measures.)
Commute Trip Reduction Measures	Transit fare subsidies, parking cash-outs, paid parking, alternative work schedules/telecommute, education/training of alternatives, rideshare programs, shuttle programs, bike share programs, end of trip facilities. (Can be achieved through Travel Demand Management program measures.)
In-Lieu Fee	A fee is levied that is used to provide non-vehicular transportation services that connect project residents to areas of employment or vice versa. This service may be provided by the project applicant in cooperation with major employers.

Source: Fehr & Peers 2020

While implementation of these goals, policies and programs in the proposed General Plan 2040 would support VMT reduction, and as shown in Table 4.16-3, the forecast VMT reduction in Total VMT Per Service Population or Work VMT Per Employee by 2040 for the proposed General Plan 2040 would be 5 to 7 percent respectively below 2019 baseline conditions and 3 percent below 2040 No Project conditions, buildout under the proposed General Plan 2040 would not be 15 percent below the corresponding average baseline rates for the full nine-county Bay Area. As such, the project impact on Total VMT Per Service Population and Work VMT Per Employee is considered *potentially significant*.

Impact TRAN-1a: Implementation of the proposed project would result in a significant land use VMT impact for Total VMT and Work VMT due to forecast land use growth through 2040, based on a comparison of the VMT rate increment for Total VMT Per Service Population and Work VMT Per Employee to the corresponding average baseline rates for the full nine-county Bay Area.

Mitigation Measure TRAN-1a*:* To reduce vehicle miles traveled the City shall modify Program M-3.3A (TDM Program Guidelines) to support achievement of the VMT reduction Standard:

- Modified Program 3-3A: Update Trip Reduction Ordinance. The City of San Rafael shall modify the Trip Reduction Ordinance (TRO) to reflect General Plan 2040 Policy M-3.1 and focus on VMT reduction measures. The amended TRO shall include the City's VMT reduction thresholds, VMT reduction measures and program guidelines, and a VMT trip reduction monitoring process. The TRO shall be updated a minimum of every five years to reflect changes in baseline VMT values, VMT thresholds, VMT reduction measures, and the monitoring process. The modified TRO shall reflect the process and methodology for conducting the VMT analysis for development projects as described in the City's Transportation Analysis (TA) Guidelines.

Significance with Mitigation: Significant and unavoidable. While impacts would be less than significant for citywide Home VMT Per Resident for residential use without mitigation, impacts with mitigation for citywide Total VMT Per Service Population and for Partial Work VMT per employees for

employment uses are considered significant and unavoidable. This is because even with the proposed General Plan 2040 policy measures and application of the relevant VMT mitigation measures, the City of San Rafael may not achieve the overall VMT threshold reduction level as the effectiveness of VMT reductions strategies is not certain. Disruptive changes to transportation such as transportation network companies (i.e., Uber, Lyft), increased delivery services (Amazon, UPS, FedEx, food, etc.), and autonomous vehicles may increase VMT beyond forecast levels. This program-level land use VMT impact for both Total VMT and Partial Work VMT, does not preclude the finding of less-than-significant impacts for subsequent development projects that achieve applicable VMT thresholds of significance. However, due to the programmatic nature of the proposed project, no additional mitigation measures are available, and the impact is considered *significant and unavoidable*.

Road Network VMT Impact

Table 4.16-1 lists the major planned mobility improvements that would be implemented between 2020 and 2040 as listed in General Plan 2040 Policy M-2.7. These improvements include road widening projects that would add approximately 3.8 new lane miles to the existing road system. Building new roadways or adding lanes to existing roadways that increase roadway capacity in congested areas increase network wide VMT by a nearly equivalent proportion within about 10 years. This increase in VMT is called long-term "induced vehicle travel." The magnitude of induced vehicle travel is measured as the elasticity of VMT with respect to lane miles. The National Center for Sustainable Transportation (NCST) recently developed a tool to estimate induced VMT. The 3.8 new lanes miles of added roadway capacity that would be implemented with the proposed project would induce approximately 15.2 million additional VMT per year, or about 50,500 VMT on a daily basis.

The induced vehicle travel effect due to roadway system expansion is not fully accounted for in travel demand models, so for purposes of this evaluation the induced VMT is considered separately from the VMT shown in Table 4.16-3. In general, travel demand models lack sensitivity to how roadway capacity expansion affects trave speeds that then influence long-term vehicle trip generation and land use growth allocations. As such, the Roadway Network VMT impact would be separate from the Land Use VMT impact described in Impact Discussion TRAN-1a. The project impact on VMT due to road network expansion is considered *potentially significant* in regard to meeting the VMT threshold.

Impact TRAN-1b: Implementation of the proposed project would result in a significant road network VMT impact due to the planned capacity of the roadway system.

Mitigation Measure TRAN-1b: Implement Mitigation Measure TRAN-1a.

Significance with Mitigation: Significant and Unavoidable. Even with the implementation of General Plan policies and application of Mitigation Measure TRAN-1a, because the effectiveness of VMT reduction strategies is not certain, the City of San Rafael may not achieve the overall VMT threshold reduction level. Disruptive changes to transportation such as transportation network companies (i.e., Uber, Lyft), increased delivery services (Amazon, UPS, FedEx, food, etc.), and autonomous vehicles may increase VMT beyond forecast levels. This program-level impact does not preclude the finding of less-than-significant impacts for subsequent development projects that achieve applicable VMT thresholds of significance. However, due to the programmatic nature of the proposed project, no

additional mitigation measures are available, and the impact is considered *significant and unavoidable*.

Downtown Precise Plan

The Downtown Precise Plan Area is an existing urban area where roughly half of the anticipated development by 2040 is expected to occur. Potential future development would occur on a limited number of vacant parcels and in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Approximately half of the Downtown Precise Plan Area is located in a PDA and TPA, which are designated in areas that are in close proximity to major transit stops or terminals. One primary goal of the *Plan Bay Area* PDA and TPA designations is to encourage transit-oriented development which would in turn reduce VMT.

Table 4.16-5 provides a comparison of the change in VMT and VMT efficiency metrics (i.e., per service population, per capita, or per employee) in the Downtown Precise Plan Area between the CEQA baseline (2019) and the General Plan horizon year (2040) conditions. Forecasts for Total VMT, Total VMT Per Service Population, Home VMT Per Resident, and Work VMT Per Employee are provided. The final row shows the percent change when comparing the three VMT rates for the Downtown Precise Plan Area to the corresponding average baseline rates for the full nine-county Bay Area.

As shown in the Table 4.16-4, the forecast VMT reduction in Total VMT Per Service Population by 2040 for the Downtown Precise Plan Area would be 12 percent below 2019 baseline conditions and nine percent below 2040 No Project conditions but would not be 15 percent below the average (2019) baseline rate for the full nine-county Bay Area. As such, while Total VMT Per Service Population for the Downtown Precise Plan Area is forecast to decline by 2040, due to the effects of added residential and employment uses that would reduce current Total VMT per service population, the VMT threshold of 15 percent below the current regional average would not be met.

TABLE 4.16-4 DAILY VEHICLE MILES TRAVELED (VMT) FOR DOWNTOWN SAN RAFAEL

SCENARIO	Total VMT	Total VMT Per Service Population	Home VMT Per Resident	Work VMT Per Employee
Baseline (2019)	1,129,000	39.7	13.7	16.6
2040 No Project	1,243,000	38.8	9.7	16.3
2040 General Plan Preferred Alternative	1,227,000	35.1	9.7	16.2
REGIONAL BASELINE				
Bay Area Region (2019)	313,500,000	27.2	13.4	16.9
PERCENT CHANGE – San Rafael 2040 VMT Rates Compared to Baseline Rate for Bay Area Region				
Downtown San Rafael - 2040 General Plan Preferred Alternative		+28.7%	-28.2%	-3.8%

Notes:
a. Service Population = San Rafael residents plus employees.

As recommended by OPR, partial VMT data was developed for VMT generated by housing (Home VMT) and employment uses (Work VMT) in the Downtown Precise Plan Area and are also evaluated against the VMT reduction target of 15 percent.

Home VMT Per Resident in the Downtown Precise Plan Area is forecast to decline from baseline (2019) to 2040 conditions and would be 28.2 percent below the corresponding average baseline rate for the full nine-county Bay Area. As such, residential development in the Downtown Precise Plan Area would meet the VMT threshold for Home VMT.

Work VMT Per Employee in San Rafael is forecast to decline from baseline to 2040 conditions but would be 3.8 percent below the corresponding average baseline (2019) rate for the full nine-county Bay Area. As such, while the combination of existing and new employment uses in the Downtown Precise Plan Area would result in a reduction in Work VMT Per Employee by 2040, the VMT threshold for employment uses would not be met. As the Work VMT Per Employee is lower in 2040 with the proposed General Plan than with the 2040 No Project condition or the 2019 baseline, this indicates that adding employees to the Downtown Precise Plan Area as proposed has a beneficial impact on reducing VMT levels. However, it is not enough to achieve the 15 percent threshold.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations to reduce VMT; therefore, the impacts and mitigation described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *significant and unavoidable with mitigation.*

TRAN-2	**Implementation of the proposed project could result in potential conflicts with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, that may have a significant impact on the environment.**

General Plan 2040

Future potential development under the proposed General Plan 2040 would contribute to and increase use of bicycle and pedestrian facilities in the EIR Study Area. The purpose of the City's adopted BPMP is to improve safety, act on community needs, and improve mobility options for San Rafael residents, workers and visitors. The BPMP provides a prioritized list of 124 projects within each of 7 designated geographic areas. The top three priority projects are identified for each geographic area.

General Plan 2040 Policies

While growth within the EIR Study Area would contribute to and increase use of bicycle and pedestrian facilities, the proposed Mobility (M) Element includes goals, policies, and programs that require local planning and development decisions to consider impacts to bicycle and pedestrian facilities. The following General Plan goals, policies, and programs would directly and indirectly result in improving the bicycle and pedestrian network and supporting programs such as Safe Routes to School to increase bicycle and pedestrian travel.

Goal M-1: Regional Leadership in Mobility. Take a leadership role in developing regional transportation solutions.

- Policy M-1.1: Regional Transportation Planning. Actively coordinate with other jurisdictions, agencies, and service providers to improve the local and regional transportation system and advocate for the City's interests. Work cooperatively to improve transit and paratransit services, achieve needed highway improvements, and improve the regional bicycle and pedestrian networks.
  - Program M-1.1A: Participation in Countywide and Regional Transportation Planning. Actively participate in the planning activities of the Transportation Authority of Marin, the Metropolitan Transportation Commission, SMART, and other transportation agencies and support implementation of cost-effective regional plans and programs.
  - Program M-1.1B: Public Information About Transportation. Provide timely information and opportunities for public input on transportation issues and projects through workshops, neighborhood meetings, social media, staff reports, and other means.
- Policy M-1.2: Regional Funding. Support a regional approach to the funding of transit, highway, bicycle, and pedestrian improvements by seeking a broad range of federal, State, and County funds. Use local funds to leverage and match outside funding sources.
  - Program M-1.2A: Transportation Project Grants. Work with governmental agencies, non-profits and community groups to secure grants for appropriate transportation projects.

Goal M-5: Safe, Attractive Streets that Connect the Community. Provide a transportation system that minimizes negative impacts on neighborhoods while maximizing access and connectivity in the community.

- Policy M-5.1: Traffic Calming. Protect residential areas from the effects of speeding traffic or traffic from outside the neighborhood through appropriate traffic "calming" solutions such as speed humps, bulb-outs, speed limits, stop signs, and chicanes. Traffic calming measures shall not conflict with emergency response capabilities.
- Policy M-5.5: School-Related Traffic. Actively encourage public and private schools to reduce congestion caused by commuting students and staff through improved provisions for pick-up and drop-off, parking management, staggered start and end times, and trip reduction.
  - Program M-5.5A: School Transportation. Implement measures to improve the safety and enjoyment of students walking, bicycling, or taking the bus to school. Examples include pedestrian crossing enhancements, transit passes or reduced rates for students, locating transit stops near school campuses, supporting increased funding for school buses and crossing guards, and staggering school hours.
- Policy M-5.6: Truck Impacts. Manage truck traffic and deliveries in residential areas to avoid conflicts with local auto traffic, pedestrian and bicycle safety, parking, and adjacent uses.
  - Program M-5.6A: Trucking Routes and Transportation Permits. Continue to designate specific streets as trucking routes and maintain permit requirements for vehicles that exceed weight limits on non-designated routes.
  - Program M-5.6B: Quarry Traffic. Continue, and periodically update, measures to mitigate the impacts of quarry-related truck traffic on Point San Pedro Road.

Goal M-6: Safe Walking and Cycling. Encourage walking and bicycling as safe, pleasurable, healthful ways to travel.

- Policy M-6.1: Encouraging Walking and Cycling. Wherever feasible, encourage walking and cycling as the travel mode of choice for short trips, such as trips to school, parks, transit stops, and neighborhood services. Safe, walkable neighborhoods with pleasant, attractive streets, bike lanes, and sidewalks should be part of San Rafael's identity.
  - Program M-6.1A: Bicycle and Pedestrian Master Plan Implementation. Maintain San Rafael's Bicycle and Pedestrian Master Plan (BPMP) and update the Plan as required to ensure eligibility for grant funding. The BPMP should be a guide for investment in pedestrian and bicycle infrastructure, and for programs to make walking and cycling a safer, more convenient way to travel.
  - Program M-6.1B: Station Area Plans. Implement the pedestrian and bicycle improvements in the 2012 Downtown Station Area Plan and the 2012 Civic Center Station Area Plan.
  - Program M-6.1C: Canal Community Based Transportation Plan (CBTP). Update the CBTP for the Canal neighborhood, including provisions to improve walking and cycling within the Canal and East San Rafael communities, and better connect the Canal area to Downtown, the waterfront, and the rest of the community.
  - Program M-6.1D: Funding. Seek grant funding for implementation of the BPMP and other plans proposing bicycle and pedestrian improvements.
- Policy M-6.2: Pedestrian and Bicycle Safety. Identify, prioritize, and implement pedestrian and bicycle safety improvements in order to reduce collisions and injuries, and eliminate fatalities.
  - Program M-6.2A: Implementation of Safety Measures. Implement pedestrian and bicycle safety measures as described in the 2018 BPMP, including ADA compliant curb ramps, curb extensions in business districts, median refuge islands, active warning beacons, painted bike "boxes" at intersections, and signal phasing adjustments in areas with high bicycle volumes.
  - Program M-6.2B: Vision Zero. Consistent with the BPMP, support a "Vision Zero" approach to safety among pedestrians and cyclists, with the goal of eliminating severe injuries and fatalities.
  - Program M-6.2C: Enforcement. Conduct enforcement activities to improve compliance with traffic safety laws, especially around intersections with frequent collisions.
  - Program M-6.2D: Safe Routes Programs. Work collaboratively with local schools to implement Safe Routes to School programs. Explore similar programs to promote safe routes to parks, work, services, and transit, as well as safe routes for seniors.
- Policy M-6.3: Connectivity. Develop pedestrian and bicycle networks that connect residents and visitors to major activity and shopping centers, existing and planned transit, and schools. Work to close gaps between existing facilities. Funding and prioritization for projects should consider relative costs and benefits, including such factors as safety, number of potential users, and impacts on parking.
  - Program M-6.3A: Implementation of Pathway Improvements. Implement the major pedestrian and bicycle pathway, intersection, and lane improvements included in adopted City plans, including:
    - Restoration of pedestrian paths, stairways, and rights-of-way, particularly in the "inner ring" neighborhoods around Downtown
    - An east-west bikeway across Downtown San Rafael

- A north-south greenway and separated bicycle-pedestrian facilities along West Tamalpais Avenue
- Improved crossings of the San Rafael Canal, including a potential new crossing east of Grand Avenue
- Additional Class I, II, and IV lanes, as identified in the BPMP
- Improved signage, pavement markings and sidewalk widening
- Closing gaps in the Bay Trail
- Bike lane improvements to Point San Pedro Road (Cross-Marin Bikeway)
- Pedestrian/ bicycle "promenades" along the San Rafael Canal and in North San Rafael (Civic Center Station to Terra Linda Community Center), including Freitas Parkway and North San Pedro Road
- Potential pedestrian crossing over 101 (in association with the I-580/101 reconstruction) and east-west pedestrian improvements under the 101 viaduct through Downtown.

- Program M-6.3B: Improvements in the Unincorporated Area. Integrate the recommendations of the Unincorporated Marin County Bicycle and Pedestrian Master Plan to create a seamlessly connected system that allows for easy bicycle travel between City and County neighborhoods. This includes improvements along Miller Creek Road and Las Gallinas Avenue in Marinwood.
- Program M-6.3C: Bicycle Parking. Create additional bicycle parking and storage capacity at the SMART stations and in Downtown San Rafael.
- Program M-6.3D: Electric Bicycles. Monitor and support the use of electric bicycles and periodically evaluate the need for standards, programs, and facilities that support their use.

- Policy M-6.4: Urban Trails Network. Identify, renovate, improve, and maintain an urban trails network to encourage walking and appreciation of historical and new pathways.
  - Program M-6.4A: Urban Trails Master Plan. As part of a citywide Trails Master Plan, include an "urban trails" component with maps and descriptions of existing and potential urban trails in San Rafael. Urban trails to be identified include, but are not limited to, historic neighborhood stairways and walkways, Downtown alleyways, park pathways, and creekside paths. Identify potential funding sources for projects identified in the Plan projects and include the projects in the Capital Improvements Program.

- Policy M-6.5: Pilot Projects. Support pilot projects that install removable pedestrian and bicycle improvements on a short-term basis to test their effectiveness and public reception before investing in permanent improvements.

- Policy M-6.6: Coordination. Work with other jurisdictions, transit agencies, and stakeholders to implement projects that reflect bicycle and pedestrian needs at the local and regional levels.
  - Program M-6.6A: Bikeshare Program. Partner with the Transportation Authority of Marin (TAM) in implementation of a bikeshare program in Downtown San Rafael and at the Civic Center station. Consider possible locations for bike sharing "pods" at destinations throughout San Rafael, especially Downtown.
  - Program M-6.6B: Monitoring. Maintain data on the effectiveness of pedestrian and bicycle improvements and use this data to adjust programs as needed.
  - Policy M-6.7: Universal Design. Design and construct bicycle and pedestrian facilities to serve people of all ages and abilities, including children, seniors, families, and people with limited mobility.

- Program M-6.7A: ADA Compliance. Continue efforts to improve access for those with disabilities, including compliance with Federal and State accessibility requirements.
- Program M-6.7B: Best Practices. Continue to construct bicycle and pedestrian facilities according to the most up-to-date local, state, and national best practices and design guidelines.

- Policy M-6.8: Pedestrian and Bicycle Programming. Continue programs and activities to encourage walking and cycling.
  - Program M-6.8A: Public Information. Maintain public information on pedestrian and bicycle projects, routes, data, and information on the City's website.
  - Program M-6.8B: Bike to Work Day. Encourage City employees, other San Rafael workers and residents to participate in Bike to Work Days and similar programs that encourage cycling as a viable commute alternative.
  - Program M-6.8C: Maintenance of Pedestrian and Bicycle Facilities. Develop a program for prioritizing and funding the maintenance of existing pedestrian and bicycle facilities based on use, connectivity, and facility conditions.

Implementation of these goals, policies and programs of the proposed General Plan 2040 would improve the bicycle and pedestrian network and support programs to increase bicycle and pedestrian travel. Implementation of General Plan 2040 would not result in conflicts with adopted policies, plans, or programs or otherwise decrease the performance or safety of bicycle or pedestrian facilities and impacts would be *less than significant.*

Significance without Mitigation: Less than Significant.

Downtown Precise Plan

About half of the new residents and employees envisioned by the proposed General Plan 2040 would be located in the Downtown Precise Plan Area, which is this where the greatest increase in demand for bicycle or pedestrian travel would occur. More than half of the Downtown Precise Plan Area is located in a *Plan Bay Area* PDA and TPA, which are designated in areas that are in close proximity to major transit stops or terminals. One primary goal of the *Plan Bay Area* PDA and TPA designations is to encourage transit-oriented development and multi-modal connectivity including pedestrian-friendly design and improved accessibility for all people.

The proposed Downtown Precise Plan lays out a future transportation vision for the downtown in which the network proves improved access, both internal to downtown and to surrounding areas, improves the interaction of transportation modes, and supports an appropriate amount of parking at the appropriate price levels. The future network would accommodate more trips using multiple travel modes. The proposed Downtown Precise Plan recommends a series of improvements based on a Pedestrian Priority Network and Bicycle Priority Network for the downtown.

While the proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to bicycle and pedestrian facilities, with implementation of the Pedestrian Priority Network and Bicycle Priority Network for the downtown and compliance with and implementation of the proposed General Plan 2040 goals, polices, and programs, the impacts described for the proposed

General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

TRAN-3	**Implementation of the proposed project could result in potential conflicts with adopted policies, plans, or programs regarding public transit, or otherwise decrease the performance or safety of such facilities, that may have a significant impact on the environment.**

General Plan 2040

Future potential development under the proposed General Plan 2040 would contribute to and increase use of transit in the EIR Study Area. The City's 2019 CCAP includes actions or measures meant to reduce GHG emissions by 40 percent below 1990 levels by 2030. Since 62 percent of GHG emissions originate from the transportation sector, the largest share of reductions from local mitigation measures in San Rafael would occur from transportation-related measures including supporting and promoting the increased use of public transit.

General Plan 2040 Policies

While growth within the EIR Study Area would contribute to and increase use of transit, the proposed Mobility (M) Element contains goals, policies and programs that require local planning and development decisions to consider impacts to transit. The following General Plan goals, policies and programs would directly and indirectly result in improving the transit network and supporting an increase in transit use.

Goal M-1: Regional Leadership in Mobility. Take a leadership role in developing regional transportation solutions.

- Policy M-1.1: Regional Transportation Planning. Actively coordinate with other jurisdictions, agencies, and service providers to improve the local and regional transportation system and advocate for the City's interests. Work cooperatively to improve transit and paratransit services, achieve needed highway improvements, and improve the regional bicycle and pedestrian networks.
  - Program M-1.1A: Participation in Countywide and Regional Transportation Planning. Actively participate in the planning activities of the Transportation Authority of Marin, the Metropolitan Transportation Commission, SMART, and other transportation agencies and support implementation of cost-effective regional plans and programs.
  - Program M-1.1B: Public Information About Transportation. Provide timely information and opportunities for public input on transportation issues and projects through workshops, neighborhood meetings, social media, staff reports, and other means.
- Policy M-1.2: Regional Funding. Support a regional approach to the funding of transit, highway, bicycle, and pedestrian improvements by seeking a broad range of federal, State, and County funds. Use local funds to leverage and match outside funding sources.

- Program M-1.2A: Transportation Project Grants. Work with governmental agencies, non-profits and community groups to secure grants for appropriate transportation projects.

Goal M-3: Cleaner Transportation. Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.

- Policy M-3.7: Design Features that Support Transit. For projects located in or near transit hubs such as Downtown San Rafael, incorporate design features that facilitate walking, cycling, and easy access to transit.

Goal M-4: High-Quality Affordable Transit. Support accessible, reliable, cost-effective transit services that provide a convenient, affordable, efficient alternative to driving.

- Policy M-4.1: Sustaining Public Transportation. Support a level of transit service frequency and routing that promotes transit usage, avoids overcrowding, and makes transit an attractive alternative to driving.
  - Program M-4.1A: Transit Advocacy. Support State, County, and regional efforts to sustain and expand Marin County's transit network. Work with neighborhoods, employers, transit providers, transportation planning agencies and funding agencies to improve and expand transit and paratransit services.
  - Program M-4.1B: Evaluating Transit Needs. Support efforts to track, forecast, survey, and respond to changing transit and paratransit needs in order to meet the requirements of specific population groups. Advocate for meaningful public participation in meetings and discussions with transit providers and ensure that the needs of those in the community who are transit-dependent are well represented. Encourage the use of performance measures and regular reporting by transit agencies to ensure services are being delivered as efficiently as possible.
  - Program M-4.1C: Partnerships. Encourage partnerships between local transit service providers to avoid redundancy, maximize coverage and efficiency, and improve transfers between transit systems.
  - Program M-4.1D: Transit for Tourism. Support efforts to provide effective transit options for visitors to West Marin and other County tourist destinations, in order to reduce regional traffic flow through San Rafael.
  - Program M-4.1E: Transit Information. Encourage the development and dissemination of information to facilitate transit use. This includes real-time, multi-lingual information on bus arrivals, departures, transfers, and routes. In addition, the City should include information on transit access on notices of City meetings and provide links to transit websites from its own website
  - Program M-4.1F: Public Health. Work with transit service providers to effectively respond to service and design challenges associated with rider safety during and after public health emergencies.
- Policy M-4.2: Regional Transit Options. Encourage expansion of regional transit connecting Marin with adjacent counties, including basic and express bus service, rail, and ferry service.

- Program M-4.2A: Regional Bus Service. Support expansion of regional bus service to and from other Bay Area counties, including expanded express bus service along the 101 and 580 corridors, and continued bus and shuttle service to the region's airports.
- Program M-4.2B: Rail Service. Advocate for reliable long-term funding sources to sustain and enhance North Bay rail service.
- Program M-4.2C: Ferry and Water Taxi Service. Work with the Golden Gate Bridge Highway and Transportation District and other regional agencies to support improved ferry service, additional ferry terminals, efficient connections between ferries and other transportation modes, new ferry routes (to Vallejo, the East Bay, San Francisco, and points south), autonomous buses, and other improvements that would increase ferry use and regional transit ridership. Consider the viability of water taxi service to supplement the ferry system and improve local connections.

- Policy M-4.3: SMART Improvements. Maximize the potential benefits of Sonoma Marin Area Rail Transit (SMART) while minimizing potential conflicts between SMART trains, adjacent land uses, bicycle and pedestrian movement, and vehicle traffic circulation. City plans and programs related to SMART should be periodically evaluated based on changes in funding, operating costs, ridership, and other factors impacting service levels.
  - Program M-4.3A: Rail Safety. Work with SMART to improve safety measures along the SMART tracks, reduce train noise, and avoid the blockage of intersections by trains.
  - Program M-4.3B: Passenger Pickup and Drop-Off. Work with SMART on plans to improve passenger pick-up and drop-off, connectivity between trains and buses, and provisions for passenger parking (see also Policy M-7.9 on parking for transit users).
  - Program M-4.3C: Arrival Experience. Create a welcoming experience for passengers arriving at the Downtown San Rafael and Civic Center stations, including wayfinding signage, easy transfers, and clearly marked, well lit pathways to nearby destinations.
  - Program M-4.3D: Service Reliability. Work with SMART to avoid disruptions of service during power outages and provide backup power to sustain operations during and after emergencies.
  - Program M-4.3E: Downtown Crossings. Continue to work with SMART to reduce congestion related to grade-level train crossings in Downtown San Rafael. Encourage SMART to assess the potential cost, as well potential funding sources, to elevate the tracks through Downtown.

- Policy M-4.4: Local Transit Options. Encourage local transit systems that connect San Rafael neighborhoods, employment centers, and other destinations.
  - Program M-4.4A: Local Bus Service. Support Marin Transit and Golden Gate Transit efforts to improve bus routing, frequency, and equipment, and to keep bus fares affordable.
  - Program M-4.4B: Improved Bus Stops. Support efforts to improve bus stops and shelters to provide a safe and pleasant experience for riders. Allow commercial advertising to fund bus shelter upgrades and maintenance.
  - Program M-4.4C: Local Shuttle Programs. Support efforts to create financially feasible shuttle, jitney, and circulator bus services to connect passengers arriving at the San Rafael Transit Center and SMART stations to their destinations.

- Policy M-4.5: Transit and the Environment. Encourage a less carbon-intensive transit system with reduced environmental impacts. This could include electrification of buses and trains, and the use of smaller vehicles in areas of lower demand.

- Policy M-4.6: Paratransit Options. Encourage expansion of paratransit and flexible route services as needed to serve specialized populations including seniors, students, and persons with disabilities.
  - Program M-4.6A: Other Local Transit. Support Dial-A-Ride, taxi, and transportation network company (TNC) services serving San Rafael.
  - Program M-4.6B: Paratransit Service. Support continued Whistlestop Wheels service and expanded regional paratransit services where needed.
- Policy M-4.7: Intermodal Transit Hubs. Support efforts to develop intermodal transit hubs in Downtown and North San Rafael to provide safe, convenient connections for all travelers. Such hubs should include secure bicycle parking, EV charging stations, and efficient drop-off and pick-up areas and create a positive experience for those arriving in San Rafael.
  - Program M-4.7A: Transit Center Relocation. Complete the relocation process for the San Rafael Transit Center. Design of the facility should consider the effects on local street congestion and the safety of those walking or bicycling to and from the facility. Continue to work with transit service providers to coordinate schedules, transfers, and routing in a manner that is convenient for San Rafael travelers.
  - Program M-4.7B: First Mile/ Last Mile Trips. Work with TAM, transit agencies, neighborhood groups, and the local business community to improve options for "first mile/ last mile" trips connecting regional transit hubs to nearby destinations.
  - Program M-4.7C: Implementation of Other Plans. Implement the recommendations of the Downtown Precise Plan, the Downtown Station Area Plan, and the Civic Center Station Area Plan for coordination of transit services and improvement of connections between travel modes.

Implementation of these goals, policies and programs of the proposed General Plan 2040 would improve the transit network and support programs to increase travel by transit. Implementation of General Plan 2040 would not result in conflicts with adopted policies, plans, or programs or otherwise decrease the performance or safety of transit facilities or services and impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

About half of the new residents and employees envisioned by the General Plan would be located in Downtown San Rafael. More than half of the Downtown Precise Plan Area is located in a *Plan Bay Area* PDA and TPA, which are designated in areas that are in close proximity to major transit stops or terminals. One primary goal of the *Plan Bay Area* PDA and TPA designations is to encourage transit-oriented development and multi-modal connectivity including pedestrian-friendly design and improved accessibility for all people. Therefore, while the proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to transit, potential future development that occurs as a result of the Downtown Precise Plan would be designed to increase transit access and safety as well as maximize the use of existing transit services. Furthermore, the multimodal street network illustrated in the Downtown Precise Plan would serve any of the locations being considered for a new San Rafael Transit Center. Accordingly, compliance with and implementation of the proposed General Plan 2040 goals, polices, and programs would ensure that the impacts described for the proposed General Plan

2040 would also apply in the Downtown Precise Plan Area and, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

TRAN-4	**Implementation of the proposed project could substantially increase hazards due to a design feature that may have a significant impact on the environment.**

General Plan 2040

Future potential development under the proposed General Plan 2040 would modify the existing transportation network to accommodate existing and future users that could change existing travel patterns or traveler expectations. The City requires the modification of existing public facilities or the construction of new facilities comply with the applicable design standards contained in the California Manual on Uniform Traffic Control Devices and the California Highway Design Manual, which have been developed to minimize the potential for conflicts or collisions.

General Plan 2040 Policies

While growth within the EIR Study Area would result in changes to the existing transportation network, the proposed Mobility (M) Element contains goals, policies and programs that require local planning and development decisions to consider impacts to transit. The following General Plan goals, policies and programs would support the design of a transportation system that is safe for all modes of travel. The following describes the goals, policies and programs that directly and indirectly result in improving the transportation network.

Goal M-2: Improved Transportation Efficiency and Access. Sustain an efficient, cost-effective transportation network that continuously improves mobility and accessibility for all users.

- Policy M-2.2: Safety. Design a transportation system that is safe and serves people using all modes of travel. Higher levels of congestion may be accepted at particular intersections if necessary to ensure the safety of all travelers, including pedestrians, bicycles, motorists, and transit users.
  - Program M-2.2A: Collision Data. Collect and analyze data on traffic collisions and use such data to inform decisions about capital improvements, enforcement, and traffic safety programs.
  - Program M-2.2B: Street Pattern and Traffic Flow. Support efforts by the City Traffic Engineer to configure or re-configure street patterns to improve traffic flow and turning movements while prioritizing safety.

Goal M-5: Safe, Attractive Streets that Connect the Community. Provide a transportation system that minimizes negative impacts on neighborhoods while maximizing access and connectivity in the community.

- Policy M-5.5: School-Related Traffic. Actively encourage public and private schools to reduce congestion caused by commuting students and staff through improved provisions for pick-up and drop-off, parking management, staggered start and end times, and trip reduction.

- Program M-5.5A: School Transportation. Implement measures to improve the safety and enjoyment of students walking, bicycling, or taking the bus to school. Examples include pedestrian crossing enhancements, transit passes or reduced rates for students, locating transit stops near school campuses, supporting increased funding for school buses and crossing guards, and staggering school hours.

- Policy M-5.6: Truck Impacts. Manage truck traffic and deliveries in residential areas to avoid conflicts with local auto traffic, pedestrian and bicycle safety, parking, and adjacent uses.
  - Program M-5.6A: Trucking Routes and Transportation Permits. Continue to designate specific streets as trucking routes and maintain permit requirements for vehicles that exceed weight limits on non-designated routes.
  - Program M-5.6B: Quarry Traffic. Continue, and periodically update, measures to mitigate the impacts of quarry-related truck traffic on Point San Pedro Road.

Implementation of these goals, policies and programs would promote the design of improvements to the transportation network that are safe for all modes of travel. As described above, the City of San Rafael also requires the modification of existing public facilities or the construction of new facilities comply with the applicable design standards contained in the California Manual on Uniform Traffic Control Devices and the California Highway Design Manual, which have been developed to minimize the potential for conflicts or collisions. This standard practice would minimize this impact. Implementation of General Plan 2040 would not result in conflicts with adopted policies, plans, or programs or otherwise increase hazards due to a design feature that may have a significant impact on the environment and impacts would be *less than significant.*

Significance without Mitigation: Less than Significant.

Downtown Precise Plan

The design of transportation improvements in the Downtown Precise Plan Area would be governed by the above General Plan 2040 policies and aforementioned design standards followed by the Department of Public Works in the development of improvement plans. As such, implementation of the Downtown Precise Plan would not result in conflicts with adopted policies, plans, or programs or otherwise increase hazards due to a design feature that may have a significant impact on the environment.

Significance without Mitigation: Less than significant.

TRAN-5 Implementation of the proposed project could result in inadequate emergency access that may have a significant impact on the environment.

General Plan 2040

Future potential development under the proposed General Plan 2040 would alter land use patterns and increase travel demand on the transportation network that may influence emergency access.

General Plan 2040 Policies

While growth within the EIR Study Area would result in changes to land use and the existing transportation network, the proposed Mobility (M) Element contains goals, policies and programs that require local planning and development decisions to consider improvements to transportation efficiency, mobility, and access including developing and updating emergency response plans. The following describes the goals, policies and programs that directly and indirectly result in providing emergency access.

Goal M-2: Improved Transportation Efficiency and Access. Sustain an efficient, cost-effective transportation network that continuously improves mobility and accessibility for all users.

- Policy M-2.8: Emergency Access. Identify alternate ingress and egress routes (and modes of travel) for areas with the potential to be cut off during a flood, earthquake, wildfire, or similar disaster.
  - Program M-2.8A: Highway Closures. Develop and update contingency plans for highway closures as part of the City's disaster preparedness and emergency response plans.
- Policy M-2.9: Narrow Streets. In new subdivisions, allow narrower streets to reduce travel speeds and accommodate multiple modes of travel, while still providing for emergency and service access.

Goal M-5: Safe, Attractive Streets that Connect the Community. Provide a transportation system that minimizes negative impacts on neighborhoods while maximizing access and connectivity in the community.

- Policy M-5.3: Connected Neighborhoods. Identify opportunities to better connect San Rafael neighborhoods to one another and to improve access to local destinations such as schools, shopping, and workplaces. Consider such connections as part of emergency response and evacuation planning.
  - Program M-5.3A: East San Rafael Improvements. Consider the potential for new or relocated roads in East San Rafael that would relieve local street congestion, increase efficiency, and improve access between the north and south sides of Interstate 580.

Implementation of these goals, policies and programs of the proposed General Plan 2040, as well as goals, policies, and programs in the Safety and Resilience Element, would address emergency access by considering new access routes for limited access neighborhoods, developing and updating emergency response plans, and incorporating emergency access considerations in the design of future street improvements. Implementation of General Plan 2040 would not result in inadequate emergency access that may have a significant impact on the environment and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Downtown San Rafael is served by the Public Safety Center (Station 51) at Fifth Avenue and D Street that houses San Rafael fire, police, and emergency services as well as Fire Station 52 located at Union Street and 4th Street. The transportation network in the Downtown Precise Plan Area is a grid configuration that provides several alternative east-west and north-south streets for emergency access routes.

Together, the new Public Safety Center and Fire Station 52 provide emergency services and access to both the west and east sides of US-101 and adjacent SMART rail line where peak hour congestion on weekdays is most concentrated. The potential future development in the Downtown Precise Plan Area would be infill development and because approximately half of the Downtown Precise Plan Area is located in a PDA and TPA, which are designated in areas that are in close proximity to major transit stops or terminals, development in this area would support transit-oriented development which would in turn reduce VMT and reduce roadway congestion. As described throughout this impact discussion, the proposed General Plan 2040 includes numerous goals, polices, and programs to reduce automobile use and VMT. As such, implementation of the Downtown Precise Plan would not result in inadequate emergency access that may have a significant impact on the environment. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

TRAN-6 Implementation of the proposed project could result in a cumulatively considerable impact to citywide VMT.

Future potential development under the proposed General Plan 2040 would contribute to an increase in VMT in the EIR Study Area as shown in Table 4.16-3. Buildout of the proposed General Plan 2040 is assumed over a 20-year project horizon. Implementation of the proposed General Plan 2040 by the horizon year of 2040 would result in a net increase of 8,910 people and 4,115 employees in the EIR Study Area. Development that would be accommodated by the proposed General Plan 2040 would generate a net increase of Total VMT at project buildout. As discussed under Impact TRAN-1, implementation of the proposed project would result in a decrease in citywide VMT per service population and Work VMT Per Employee in horizon year 2040 from existing baseline but would not be 15 percent below the baseline nine-county regional average. The home VMT per resident, a measure of VMT for residential uses, would be 15 percent below the baseline nine-county regional average, Therefore, the impact on VMT would be cumulatively considerable. Mitigation Measure TRAN-1a would apply.

Impact TRAN-6: Implementation of the proposed project would cumulatively contribute to regional VMT.

Mitigation Measure TRANS-6: Implement Mitigation Measure TRAN-1a.

Significance with Mitigation: Significant and unavoidable. Even with the General Plan policy measures and application of Mitigation Measure TRAN-1a, the City of San Rafael will not achieve the VMT rate reductions specified in Policy M-3.1 and the effectiveness of VMT reduction strategies is not certain. Disruptive changes to transportation such as transportation network companies (i.e., Uber, Lyft), increased delivery services (Amazon, UPS, FedEx, food, etc.), and autonomous vehicles may increase VMT beyond forecast levels. As such, the cumulative impact on VMT with mitigation is considered *significant and unavoidable.*

4.17 UTILITIES AND SERVICE SYSTEMS

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project related to utilities. Specifically, water supply, wastewater, stormwater, and solid waste are each addressed in separate subsections of this chapter. Utilities associated with energy use, energy providers, and the energy infrastructure are addressed in Chapter 4.6, Energy, of this Draft Environmental Impact Report (EIR). A summary of the relevant regulatory framework and existing conditions is followed by a discussion of project impacts and cumulative impacts.

4.17.1 WATER

4.17.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

Federal Regulations

Federal Safe Drinking Water Act

The Safe Drinking Water Act, the principal federal law intended to ensure safe drinking water to the public, was enacted in 1974 and has been amended several times since then. It authorizes the United States Environmental Protection Agency (USEPA) to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and human-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Water Resources Control Board (SWRCB) conducts most enforcement activities. If a water system does not meet standards, it is the water supplier's responsibility to notify its customers.

America's Water Infrastructure Act of 2018

America's Water Infrastructure Act was signed into law on October 23, 2018, and authorizes federal funding for water infrastructure projects; expands water storage capabilities; assists local communities in complying with the Safe Drinking Water Act and Clean Water Act (CWA); reduces flooding risks for rural, western, and coastal communities; and addresses significant water infrastructure needs in tribal communities.[1] Additionally, the act requires that drinking water systems that serve more than 3,300 people develop or update risk assessments and emergency response plans. Risk assessments and emergency response plans must be certified by the USEPA within the deadline specified by America's Water Infrastructure Act.

[1] John Barasso, October 10, 2018, *Congress Passes America's Water Infrastructure Act*, https://www.barrasso.senate.gov/public/index.cfm/2018/10/congress-passes-america-s-water-infrastructure-act.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) passed in California in 1969 and was amended in 2013. It is the basic water quality control law for California. Under this act, the SWRCB has authority over state water rights and water quality policy. The act divided the state into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB) to oversee water quality on a day-to-day basis at the local and regional levels. RWQCBs engage in various water quality functions in their respective regions and regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The EIR Study Area is overseen by the San Francisco Bay RWQCB (Region 2).

Urban Water Management Planning Act (Senate Bills 610 and 221)

The California Urban Water Management Planning Act and Section 10620 of the Water Code require that all urban water suppliers in California that provide water to more than 3,000 customers or supply more than 3,000 acre-feet per year (afy)[2] to prepare and adopt an urban water management plan (UWMP) and update it every five years. The act is intended to support efficient use of urban water supplies. The act requires the UWMP to compare water supply and demand over the next 20 years for normal years, single dry years, and multiple dry years and to determine current and potential recycled water uses. Senate Bill (SB) 610 and SB 221 were enacted to 1) ensure better coordination between local water supply and land use decisions and 2) confirm that there is an adequate water supply for new development. Both statutes require city and county decision makers to review detailed information regarding water availability prior to the approval of large development projects. SB 610 requires the preparation of a Water Supply Assessment (WSA) for certain types of projects subject to the California Environmental Quality Act (CEQA) Projects that are required to prepare a WSA are:

- Residential development consisting of more than 500 dwelling units.
- Shopping center or business establishment employing more than 1,000 people or having more than 500,000 square feet of floor area.
- Commercial office building employing more than 1,000 people or having more than 250,000 square feet of floor space.
- Hotel or motel, or both, having more than 500 rooms.
- Industrial, manufacturing, or processing plant, or industrial park employing more than 1,000 people, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- Mixed-use project that includes one or more of the projects specified above.
- Project that requires an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

SB 221 requires written verification that there is sufficient water supply available for new residential subdivisions that include more than 500 dwelling units. The water supplier must provide written verification that sufficient water is available before construction begins.

[2] One acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1 foot.

Water Conservation Act of 2009 (Senate Bill X7-7)

The Water Conservation Act of 2009 (SB X7-7) requires all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita water use by 20 percent by 2020, with an interim goal of a 10 percent reduction in per capita water use by 2015. Effective in 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for State water grants or loans. SB X7-7 requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified standards. It also requires that agricultural water suppliers prepare plans and implement efficient water management practices.

2018 Water Conservation Legislation (Senate Bill 606 and Assembly Bill 1668)

In 2018, the California Legislature enacted two policy bills to establish long-term improvements in water conservation and drought planning to adapt to climate change and longer and more intense droughts in California. The Department of Water Resources (DWR) and the SWRCB will develop new standards for:

- Indoor residential water use
- Outdoor residential water use
- Commercial, industrial, and institutional (CII) water use for landscape irrigation with dedicated meters
- Water loss

Urban water suppliers will be required to stay within annual water budgets, based on their standards for their service areas, and to calculate and report their urban water use objectives in an annual water use report. For example, the bills define a daily standard for indoor residential use of 55 gallons per person until 2025, when it decreases to 52.5 gallons and further decreases to 50 gallons by 2030. The legislation also includes changes to UWMP preparation requirements.

Water Conservation in Landscaping Act of 2006

The Water Conservation in Landscaping Act (AB 1881) required the State Department of Water Resources to update the State of California's Model Water Efficient Landscape Ordinance (MWELO) by 2009. Under AB 1881, cities and counties were required to adopt the MWELO by January 31, 2010, or to adopt a different ordinance that is at least as effective in conserving water as the MWELO.

The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and to build resiliency for future droughts. The 2015 revisions to the MWELO increased water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf.

The City of San Rafael adopts the Marin Municipal Water District (MMWD) Ordinance (Water Conservation), as specified in Section 14.16.370, Water-Efficient Landscape, of the San Rafael Municipal Code (SRMC). The City defers to MMWD to enforce the ordinance and review the required landscape and irrigation plans for applicable projects. New construction projects with an aggregate landscape area of 500 square feet or greater are subject to the MMWD landscape plan requirements. In addition, rehabilitated landscape projects with an aggregate landscape area of 1,000 square feet or greater are also covered under this ordinance. The MMWD landscape plan review process requires submittal of the maximum

applied water allowance and estimated total water use worksheets as well as grading plans, landscape planting plans, and irrigation design plans.

California Building Code: CALGreen

The California Building Standards Commission adopted the nation's first green building standards in July 2008, the California Green Building Standards Code (California Code of Regulations [CCR], Part 11, Title 24), also known as CALGreen. CALGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure in California, unless otherwise indicated in the Code. CALGreen establishes planning and design standards for sustainable site development, including water conservation measures and requirements that new buildings reduce water consumption by 20 percent below a specified baseline. CALGreen is updated every three years to allow for consideration and possible incorporation of new efficiency technologies and methods. The mandatory provisions of CALGreen became effective January 1, 2011, and the latest version, the 2019 California Green Building Standards Code, became effective on January 1, 2020. The building efficiency standards are enforced through the local building permit process. The City has regularly adopted each new CALGreen update under the SRMC Title 12, Building Regulations, Chapter 12.100, Adopted Codes, and Chapter 12.235, California Green Building Construction Standards Code Amendment.

California Plumbing Code

The latest version of the California Plumbing Code (CCR, Part 5, Title 24) was issued in 2019 and is updated on a three-year cycle. It includes new standards for plumbing fixtures, new provisions for storm drain systems, and design criteria for potable and recycled water systems. The City adopts the California Plumbing Code and latest updates under SRMC Chapter 12.16, California Plumbing Code.

Recycled Water Regulations

Two State agencies have primary responsibility for regulating the application and use of recycled water: the California Department of Public Health and the SWRCB. Planning and implementing water recycling projects entail numerous interactions with these regulatory agencies prior to project approval. The California Department of Public Health establishes the statewide effluent bacteriological and treatment reliability standards for recycled water uses in CCR, Title 22, Division 4, Environmental Health. Title 22 establishes standards for each general type of use based on the potential for human contact with recycled water. The SWRCB is responsible for establishing and enforcing requirements for the application and use of recycled water within California. Permits are required from the SWRCB for a water recycling operation. As part of the permit application process, applicants are required to demonstrate that the proposed recycled water operation will not exceed the ground and surface water quality objectives in the basin management plan and that the operation is compliant with Title 22 requirements.[3]

[3] Further information is available at the following link: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/water_recycling/statutes_regulations.shtml, accessed on March 11, 2019.

California Health and Safety Code

A portion of the California Health and Safety Code is dedicated to water issues, including testing and maintenance of backflow prevention devices, coloring of pipes carrying recycled water, and programs addressing cross-connection control by water users.

California Water Code

The California Water Code contains many statutes surrounding various water-related issues, including water shortage emergencies, on-site wastewater treatment systems, potable water reuse, greywater systems, appropriation of water, water rights, and the establishment of California water districts.

Mandatory Water Conservation

Following the declaration of a state of emergency on July 15, 2014, due to drought conditions, the SWRCB adopted Resolution No. 2014-0038 for emergency regulation of Statewide water conservation efforts. These regulations, which went into effect on August 1, 2014, were intended to reduce outdoor urban water use and have all California households voluntarily reduce their water consumption by 20 percent. Water companies with 3,000 or more service connections were required to report monthly water consumption to the SWRCB. The SWRCB readopted the regulations several times, until Governor Brown issued Executive Order B-40-17 in April 2017, ending the drought emergency and directing the SWRCB to rescind portions of its existing drought emergency water conservation regulations but maintaining the portions of the regulations that prohibit wasteful water use practices until permanent requirements are in place. The wasteful water use practices that are still in effect include: (1) the application of potable water to outdoor landscapes in a manner that causes excess runoff, (2) the use of a hose to wash a motor vehicle except where the hose is equipped with a shut-off nozzle, (3) the application of potable water to driveways and sidewalks, (4) the use of potable water in nonrecirculating ornamental fountains, and (5) the application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall. Also, urban water suppliers are still required to submit monthly water monitoring reports to the SWRCB.

Regional Regulations

2015 MMWD Urban Water Management Plan

In compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, the MMWD adopted its current 2015 UWMP in June 2016. All urban water suppliers are required to prepare, adopt, and file a UWMP with DWR every five years. The 2015 UWMP describes water demands, water supply sources, and supply reliability for its service area in five-year increments for average years, single dry years, and multiple dry years. The UWMP also provides water supply contingency planning in case of shortage emergencies, demand management measures to increase water use efficiency, and current and planned water conservation efforts.

Marin Municipal Water District Water Resources Plan

The MMWD prepared the 2040 *Water Resources Plan* to evaluate resiliency and the ability to meet future water demands, considering both chronic events (such as prolonged drought and climate change impacts on water supply) and acute events (such as earthquakes, water quality events, wildfires, etc.). The plan identifies 40 resiliency options to meet demands in times of potential supply shortages caused by variable hydrological conditions or system disruption.[4]

Marin Municipal Water District Code

The MMWD Code includes various regulations to manage water infrastructure and services within the EIR Study Area. Most provisions related to water services are found in Title 11, Water Service Rules and Regulations, and Title 13, Water Service Conditions and Water Conservation Measures, as follows:

- Title 11, Water Service Rules and Regulations. This section details the adopted rules and regulations that establish uniform practices governing water service and to define the obligations of the MMWD to consumers and the obligations of consumers to the MMWD. Title 11 includes requirements governing the application for water service, installation of new service connections, cross-connections, water main extensions, and fire taps. Title 11 also includes service charges and connection fees. Consumers are advised to obtain information from MMWD on the availability of water, water facilities to provide service, pressure conditions, and other pertinent data before undertaking any development or construction.
- Title 13, Chapter 13.02, Water Conservation and Dry Year Water Use Reduction Program. This chapter provides a water conservation plan to minimize the effect of a water shortage on MMWD's consumers and to adopt provisions that will significantly reduce the consumption of water during an extended dry weather period (drought).
- Title 13, Chapter 13.03, Water Budgets and Related Conservation Measures. This chapter specifies the terms and conditions under which water budgets will be required and when consumers will be required to retrofit water fixtures with low flow or ultra-low flow fixtures to reduce the per capita consumption of water by MMWD's customers.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to water infrastructure and services are primarily in the Land Use, Infrastructure, and Air and Water Quality Elements. As part of the proposed project, some existing General Plan policies would be amended or substantially changed, and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable

[4] Marin Municipal Water District, March 2017. *Water Resources Plan 2040*, https://www.marinwater.org/DocumentCenter/View/5095/Final-Water-Resources-Plan-2040?bidId=.

goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.17.1.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives to ensure the efficient use of water in San Rafael. The SRMC is organized by title, chapter, and section. Most provisions related to water supply and conservation are found in Title 9, Health and Sanitation, Title 12, Building Regulations, Title 14, Zoning, Title 15, Subdivisions, and Title 18, Protection of Flood Hazard Areas, as follows:

- Chapter 9.24, Well Standards. The purpose of this chapter is to protect groundwater and surface water by establishing standards regulating the construction, placement, reconstruction and destruction of water wells, water supply sources, test holes, cathodic protection wells and monitoring wells. In addition, Section 9.24.070, Prohibition, states that no permit shall be issued for a well or water well on a parcel of land serving more than one lot if the parcel is located within the service area of a public water district or private water company.
- Chapter 12.235, California Green Building Construction Standards Code Amendments. Section 12.235.020, Amendments, describes the deletions and amendments to the adopted 2019 CALGreen Building Code Standards as described in Section 12.100.010, Adopted Codes.
- Chapter 14.16, Site and Use Regulations. Section 14.16.370, Water-Efficient Landscape, includes the water-efficient landscape ordinance. The purpose of this section is to adopt by reference the MMWD Ordinance (Water Conservation), as adopted and periodically amended. For projects that are subject to the water-efficient landscape requirements, the City defers to MMWD to administer the provisions of this chapter, which include:
  - The application and monitoring of a "maximum applied water allowance," that is established for applicable projects.
  - The review of required landscape and irrigation plans, specifications and supportive documents prepared for applicable projects for compliance with water-efficient landscape restrictions, including limitations on the type and amount of landscape materials and plant species.
  - The review, inspection and approval of landscape and irrigation that is installed for applicable projects to ensure compliance with the approved landscape and irrigation plans and specifications.
  - The post-installation monitoring of water usage for irrigation by applicable projects.
- Chapter 15.06, Utilities and Services. Section 15.06.020, Utilities and Services, states no subdivision of land into two or more lots or parcels for the purpose of development shall be approved by the City unless it is determined that domestic water service for all new lots or parcels shall be provided by the MMWD.
- Chapter 18.50, Provisions for Flood Hazard Reduction. Section 18.50.020, Standards for Utilities, states that all new and replacement water supply and sanitary sewage systems within the 100-year floodplain shall be designed to minimize or eliminate (1) the infiltration of flood waters into the systems and (2) the discharge from the systems into flood waters. Also, on-site waste disposal systems shall be located to avoid impairment or contamination that could occur during flooding.

Climate Change Action Plan 2030

The San Rafael Climate Change Action Plan (CCAP) 2030 was issued in April 2019 and includes a variety of strategies to reduce greenhouse gas emissions from both existing and future development in San Rafael.[5] The CCAP focuses on mitigation efforts such as renewable energy, low-carbon transportation, composting, and water conservation. San Rafael has responded to the need to conserve water by reducing its per capita water use by about 28 percent in the last ten years. Residents and businesses are installing low-flow fixtures (showerheads, faucets, and toilets); planting native, drought-tolerant species; and replacing lawns with low-water-use gardens. The CCAP has the following goals for community and municipal water use:

- WC-C1: Community Water Use. Reduce indoor and outdoor water use in residential and commercial buildings and landscaping.
  - Work with MMWD and other organizations to promote water conservation programs and incentives.
  - Educate residents and businesses about local and State laws requiring retrofit of noncompliant plumbing fixtures during remodeling and at resale.
  - Ensure all projects requiring building permits, plan check, or design review comply with State and MMWD regulations.
  - Encourage the installation of greywater and rainwater collection systems and the use of recycled water where available through ordinance or engagement campaigns.
- WC-M1: Municipal Water Use. Reduce indoor and outdoor water use in municipal facilities and operations.
  - Replace high water use plants and inefficient irrigation systems with water-efficient landscaping.
  - Investigate synthetic turf that uses organic infill for ball fields and parks to reduce water, herbicide use, and maintenance costs, while increasing field use throughout the year.
  - Replace inefficient plumbing fixtures with high-efficiency fixtures.
  - Use recycled water as available and practicable.

Existing Conditions

Water Supply Sources

The MMWD serves roughly 190,000 customers within approximately 147 square miles along the eastern corridor of Marin County from the Golden Gate Bridge northward. MMWD serves ten incorporated cities and towns, including San Rafael, Mill Valley, Fairfax, San Anselmo, Ross, Larkspur, Corte Madera, Tiburon, Belvedere, and Sausalito. Approximately 27 percent of MMWD's customer meters are in San Rafael.[6] The MMWD's water supplies presently come from a combination of local surface water supplies, imported water from the Sonoma County Water Agency (SCWA), and recycled water.[7]

[5] City of San Rafael, 2019. *Climate Change Action Plan 2030*. Dated April 23, 2019.

[6] Marin Municipal Water District, May 31, 2019, Email correspondence with Lucy Croy, Senior Engineer.

[7] Marin Municipal Water District, June 2016, *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

Groundwater

There are two groundwater basins identified in DWR Bulletin 118 that are at least partially within the EIR Study Area: San Rafael Valley and Novato Valley Basins. However, existing groundwater resources in the EIR Study Area are very limited due to a lack of substantial underlying groundwater aquifers and poor groundwater quality. Because of these limitations, the MMWD does not use groundwater as a supply source. In addition, SRMC Section 9.24.070, Prohibition, prohibits the use of well water for more than one residential lot if the well is in the MMWD's service area.

The DWR's Sustainable Groundwater Management program uses a scoring system of eight components to evaluate the need for more sustainable groundwater policies and programs in a basin. The scoring components include the population in the basin; the rate of current and projected growth of the populations in the basin; the number of public supply wells that draw from the basin; the total number of wells that draw from the basin; the irrigated acreage within the basin; the degree to which persons in the basin rely on groundwater as their primary source of water; any documented impacts on groundwater in the basin; and any other information determined to be relevant by DWR.[8] Based on this prioritization method, the two groundwater basins in the EIR Study Area are categorized as very low priority basins.[9]

Groundwater use within MMWD's service area is limited to small, domestic private groundwater wells. The MMWD has studied the potential for municipal groundwater use since the 1970s, and the results of these studies have shown that the potential for municipal groundwater use within the boundaries of the MMWD service area is very limited due to limited production capabilities, water quality constraints, and potential water rights issues. As a result of these studies, groundwater is not currently used or planned to be used as a municipal water supply source by MMWD, though private groundwater wells are used in the EIR Study Area.[10]

Surface Water

The MMWD's primary water supply is local surface water from a network of seven local, rain-fed reservoirs. Five of the seven MMWD reservoirs (Alpine, Bon Tempe, Kent, Lagunitas, and Phoenix Lake) are on the north slope of Mt. Tamalpais. The remaining two MMWD reservoirs (Nicasio and Soulajule) are outside the MMWD's service area in western Marin County. The total reservoir storage operated by the MMWD is 25.9 billion gallons (79,566 afy).[11] Characteristics of the MMWD's reservoir system are summarized in Table 4.17-1.

[8] Department of Water Resources, 2018. *2018 SGMA Basin Prioritization Process and Results*. Dated May 2018.

[9] Department of Water Resources, 2020. *SGMA Basin Prioritization Dashboard*. Accessed at https://gis.water.ca.gov/app/bp-dashboard/final/ on July 29, 2020.

[10] Marin Municipal Water District, June 2016, *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

[11] Marin Municipal Water District, June 2016, *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

TABLE 4.17-1 MARIN MUNICIPAL WATER DISTRICT SURFACE WATER RESERVOIR SYSTEM

Reservoir Name	Year Constructed	Storage Capacity (Acre-Feet)
Lake Lagunitas	1873	350
Phoenix Lake	1905	411
Bon Tempe Reservoir	1948	4,017
Alpine Lake	1918, 1924, and 1941	3,069; 4,600; and 8,891
Kent Lake	1953 and 1982	16,050 and 32,895
Nicasio Reservoir	1960	29,000
Soulajule Reservoir	1980	10,572
	Total Existing Reservoir Storage:	**79,566**

Notes: One acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1 foot.
Source: Marin Municipal Water District, 2016, *Urban Water Management Plan, 2015 Update*.

Surface water from Kent Lake, Bon Tempe Lake, Alpine Lake, Phoenix Lake, and Lagunitas Lake is aerated seasonally to maintain adequate dissolved oxygen concentrations. From the reservoirs, the water is conveyed to either the Bon Tempe Treatment Plant near Ross or the San Geronimo Treatment Plant in Woodacre.[12] According to the 2015 UWMP, MMWD estimates the reasonable available amount of its surface water sources is 141,970 afy. The reasonably available volume is a historical average of water available to the MMWD based on beginning year reservoir storage, estimated inflow runoff, and imported water from SCWA.[13]

Purchased Water

Since 1975, the MMWD has contracted with SCWA for a supplemental supply of water, primarily from the Russian River. The agreement for water supply allows the MMWD to take deliveries of up to 14,300 afy. Projections are consistent with SCWA's UWMP. The agreement will remain in force through June 30, 2025, and includes a renewal provision that will extend the agreement through June 30, 2040. In addition to contractual delivery limits, Russian River water deliveries to the MMWD are subject to available pipeline capacity in facilities owned by SCWA and the North Marin Water District. Approximately 7,000 afy were delivered to MMWD in 2015, and this amount is assumed to increase to 10,000 afy in 2040.[14] Water imported from SCWA is naturally filtered in the deep sand and gravel below the riverbed and requires no further clarification. This water enters the MMWD's system at the Ignacio Water Quality and Pumping Station, where water quality is monitored continually and adjusted as needed.[15]

[12] Marin Municipal Water District, June 2016, *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

[13] Marin Municipal Water District, May 31, 2019, Email correspondence with Lucy Croy, Senior Engineer.

[14] Marin Municipal Water District, June 2016*, Urban Water Management Plan, 2015 Update,* http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

[15] Marin Municipal Water District, June 2016, *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

Water Supply Infrastructure

The MMWD's water supply pipelines range from 0.75-inch pipes connecting customers' water meters to a 42-inch transmission main. The pipes are constructed of cast iron, polyvinyl chloride, and asbestos cement, depending on the date and location of installation. MMWD implements an ongoing Pipeline Replacement Program to replace pipelines that have reached the end of their useful life. Water distribution pipelines within the EIR Study Area range from 1- to 30-inch-diameter pipes.

As described in Table 4.17-2, the MMWD's potable water distribution system includes approximately 886 miles of water mains, 94 pump stations, and 127 treated water storage tanks with a total storage capacity of 81.9 million gallons (mg). To treat the MMWD water supply, the MMWD operates three water treatment plants, including the Bon Tempe Treatment Plant, the San Geronimo Treatment Plant, and the Ignacio Treatment Facility.[16] The San Geronimo and Bon Tempe Plants, with maximum capacities of 35 million gallons per day (mgd) and 20 mgd, respectively, treat water from the MMWD reservoirs. The Ignacio Pump Station, with a maximum capacity of 16 mgd, performs chemical treatment in a "polishing" operation on water received from SCWA via the North Marin Intertie Pipeline.[17] Together, these facilities have a combined design capacity of 71 mgd. Although maximum treatment rates have reached 58 mgd, the average daily maximum rate is approximately 25 mgd. In 2015, the total production of the three plants averaged 20.4 mgd.[18] The MMWD's potable water distribution system is shown on Figure 4.17-1.

TABLE 4.17-2 SUMMARY OF POTABLE WATER FACILITIES

Facility	Value
Miles of Pipeline	886
Number of storage tanks	127
Total tank storage capacity	81.9 mg
Number of pump stations	94
Number of potable water treatment plants	3
Maximum daily treatment capacity (designed)	71 mgd
Maximum daily treatment capacity (observed)	58 mgd
Average daily treatment plant production	20 mgd

Notes: mg = million gallons, mgd= million gallons per day
Source: Marin Municipal Water District, 2016, *Urban Water Management Plan*, 2015 Update.

[16] Marin Municipal Water District, June 2016 *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

[17] Marin Municipal Water District, June 20, 2017. Final Proposed Fiscal Year 2017/18 and 2018/19 Operating and Capital Budget. https://www.marinwater.org/DocumentCenter/View/4723/Final-Proposed-Operating-and-Capital-Budget-for-Fiscal-Years-2017-18-and-2018-19?bidId=.

[18] Marin Municipal Water District, June 2016. Urban Water Management Plan, 2015 Update, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

The MMWD UWMP does not specify the water demand for each city or town within its service area. However, correspondence with MMWD engineers indicates that approximately 27 percent of the MMWD customer meters are in San Rafael.[19]

Recycled Water

MMWD's recycled water system consists of 27 miles of pipeline, three storage tanks with a total capacity of 1.9 mg, and four pump stations. MMWD delivers about 520 afy through 342 service connections in north San Rafael. The MMWD produces recycled water by treating secondary effluent from the Las Gallinas Valley Sanitary District (LGVSD).[20] The Las Gallinas Reclamation Plant, located in San Rafael, has a current maximum capacity of 2 mgd. The Las Gallinas Reclamation Plant performs tertiary treatment of wastewater effluent and produces recycled water used for irrigation, toilet flushing, and other nondrinking purposes.[21,22] The locations of the recycled water pipelines are shown on Figure 4-17.1, including the northern portion of San Rafael and the Terra Linda and Santa Venetia communities. The Downtown Precise Plan Area currently does not have a recycled water distribution system. There are five wastewater treatment plants (WWTP) within the EIR Study Area that collectively treat roughly 17,000 afy of wastewater. Of this amount, just over 2,000 afy are recycled for nonpotable purposes such as landscape irrigation.[23]

Marin Municipal Water District Water Supply and Demand

According to the 2015 MMWD UWMP, single- and multi-family residential homes make up 75 percent of MMWD's total water demand for its service area. Commercial, institutional, and landscape uses represent 13 percent, 6 percent, and 6 percent of the remaining water demand, respectively. The service area has a relatively low growth rate. The 2040 population is projected to be approximately 210,000, which is an increase from 190,000 in 2015. The Association of Bay Area Governments projects a continued slow growth rate of about 0.46 percent per year for the 25-year period. The 2015 demand for potable and recycled water in the MMWD service area was 38,866 afy, which is projected to increase to approximately 42,109 afy by 2040. Water losses and passive conservation measures are included in the water demand. Passive conservative measures are those that do not depend on financial assistance or educational programs, but result from the natural replacement of existing plumbing fixtures with water-efficient models and the installation of water-efficient fixtures in new buildings and retrofits, as required under the CALGreen standards.

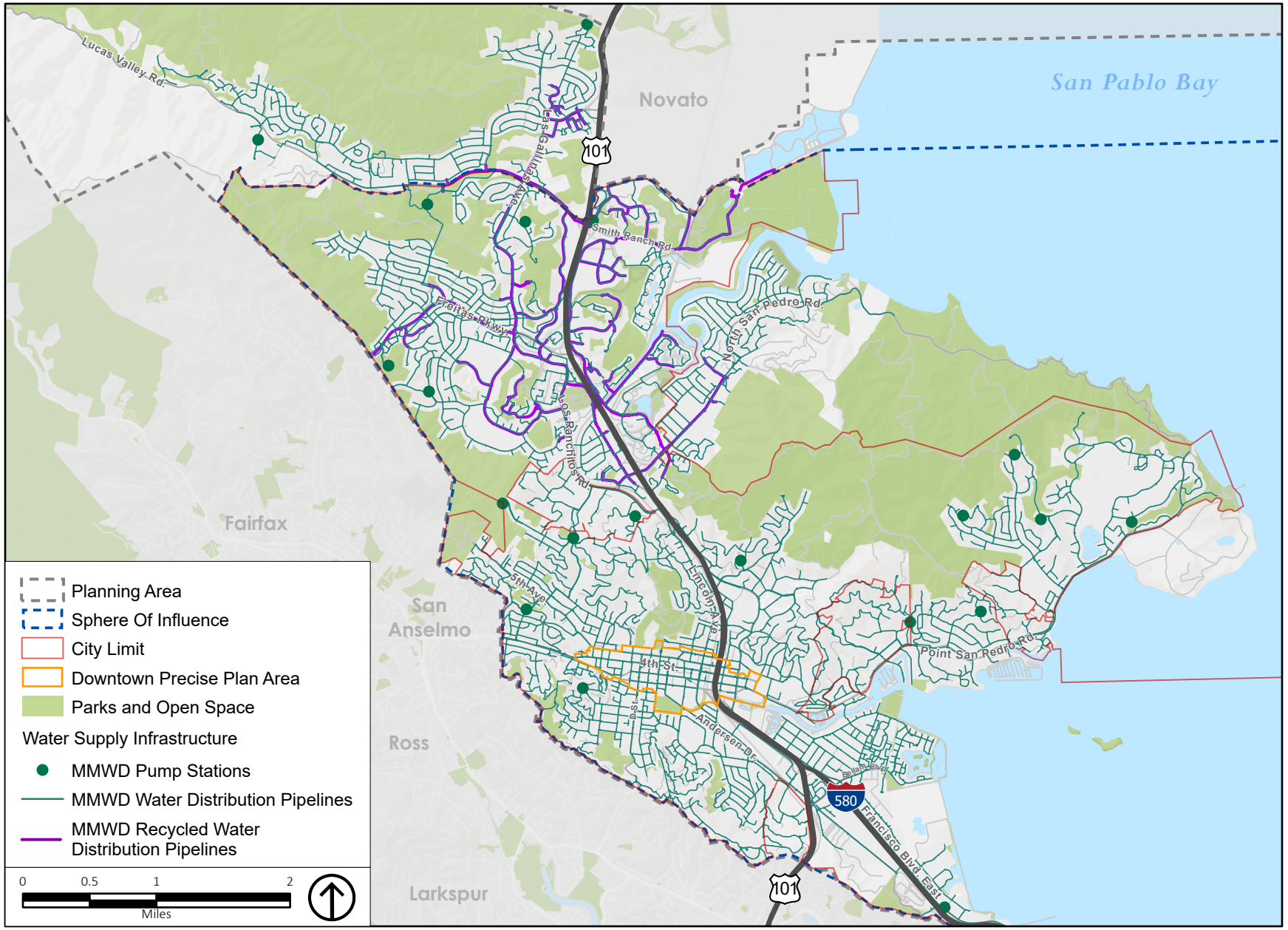
[19] Marin Municipal Water District, 2019. Email correspondence between Lucy Croy, P.E., Senior Engineering – Planning, MMWD and Steve Bush, P.E., Senior Engineer, PlaceWorks dated May 31, 2019.

[20] Marin Municipal Water District, June 2016 *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

[21] Marin Municipal Water District, June 20, 2017, *Final Proposed Fiscal Year 2017/18 and 2018/19 Operating and Capital Budget.* https://www.marinwater.org/DocumentCenter/View/4723/Final-Proposed-Operating-and-Capital-Budget-for-Fiscal-Years-2017-18-and-2018-19?bidId=.

[22] Marin Municipal Water District, *Recycled Water*, https://www.marinwater.org/326/Recycled-Water, accessed on March 15, 2019.

[23] Marin Municipal Water District, June 20, 2017, *Final Proposed Fiscal Year 2017/18 and 2018/19 Operating and Capital Budget*. https://www.marinwater.org/DocumentCenter/View/4723/Final-Proposed-Operating-and-Capital-Budget-for-Fiscal-Years-2017-18-and-2018-19?bidId=.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.17-1

Marin Municipal Water District Supply Infrastructure

Table 4.17-3 provides the projected water demand and water supply comparisons for the MMWD service area for normal, single-dry, and multiple-dry years.

TABLE 4.17-3 PROJECTED NORMAL, DRY, AND MULTIPLE-DRY SUPPLY AND DEMAND COMPARISONS (AFY)

	2020	2025	2030	2035	2040
Normal Year					
Supply Totals	151,254	152,714	152,794	152,794	152,794
Demand Totals	41,940	41,797	41,685	41,835	42,109
Difference	*111,019*	*110,917*	*111,109*	*110,959*	*110,685*
Dry Year					
Supply Totals	60,442	60,442	60,442	60,442	60,442
Demand Totals	41,940	41,797	41,685	41,835	42,109
Difference	*18,502*	*18,645*	*18,757*	*18,607*	*18,333*
Multiple Dry Year [a]					
First Year					
Supply Totals	123,407	123,407	123,407	123,407	123,407
Demand Totals	41,940	41,797	41,685	41,835	42,109
Difference	*81,467*	*81,610*	*81,722*	*81,572*	*81,298*
Second Year					
Supply Totals	76,300	76,300	76,300	76,300	76,300
Demand Totals	41,940	41,797	41,685	41,835	42,109
Difference	*34,360*	*34,503*	*34,615*	*34,465*	*34,191*
Third Year					
Supply Totals	60,442	60,442	60,442	60,442	60,442
Demand Totals	41,940	41,797	41,685	41,835	42,109
Difference	*18,502*	*18,645*	*18,757*	*18,607*	*18,333*

[an] Estimated multiple-dry-year supplies reflect additional storage resulting from raising Kent Reservoir in 1982 and renegotiating SCWA agreements.
Source: Marin Municipal Water District, 2016, Urban Water Management Plan, 2015 Update.

The projections in Table 4.17-3 are conservative because they do not account for future active conservation measures that result from MMWD's conservation program. This approach, while conservative, safeguards against potential future shortages by projecting the highest level of demand. Therefore, any potential shortages at this demand could be alleviated by active conservation measures.[24]

SB X7-7 requires urban water suppliers to report in the UWMP a baseline water use calculation and specific water use targets to meet the 2020 goal of 20 percent water use reduction. All water suppliers are required to submit the SB X7-7 Verification Form to DWR, which is typically an appendix of the UWMP. The MMWD's 2020 water use target is 124 gallons per capita per day (gpcd), and its interim (2015) target

[24] Marin Municipal Water District, June 2016. Urban Water Management Plan, 2015 Update, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

is 137 gpcd. The MMWD is currently meeting both its interim and 2020 water use targets, as the daily per capita water use in 2015 was 110 gpcd, well below both target levels.[25]

Capital Improvement Program

According to the MMWD, the current water distribution system will be able to handle future growth and development throughout Marin County, including the EIR Study Area.[26] However, MMWD has an ongoing capital improvement program (CIP) to replace approximately eight miles of pipelines that have reached the end of their useful life. In the next five years, 4,000 feet of water pipelines beneath Third Street between Irwin Street and Fourth Street are planned for replacement in the Downtown Precise Plan Area. There are also plans to replace the Hind #1 and Hind #2 redwood storage tanks and seismically retrofit the Skyview Terrace and Loch Lomond steel tanks. The Fire Flow Improvement Program also plans to replace 52 miles of fire flow piping, including the pipeline on Fifth Avenue between A street and Grand Avenue, which is mostly within the Downtown Precise Plan Area. Additional water pipeline replacement is planned on Lochinvar Road and Knight Drive in the EIR Study Area.[27]

4.17.1.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant water supply impacts if it would:

1. Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.
2. Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
3. Result in significant cumulative impacts related to water supply and facilities.

4.17.1.3 IMPACT DISCUSSION

UTIL-1	**Implementation of the proposed project could require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.**

General Plan 2040

Implementation of the proposed project would have a significant impact if it would result in the construction of new water treatment facilities (plants) or the expansion of existing facilities that would

[25] Marin Municipal Water District, June 2016. *Urban Water Management Plan, 2015 Update*, http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=.

[26] Marin Municipal Water District, 2019. Correspondence between Lucy Croy, P.E., Senior Engineer – Planning, MMWD, and Steve Bush, P.E., Senior Engineer, PlaceWorks, dated May 31, 2019.

[27] Marin Municipal Water District. June 5 and 10, 2019. Email correspondences with Lucy Croy, Senior Engineer.

have a significant effect on the environment. Under the proposed project, water demand would increase throughout the EIR Study Area due to increases in population.

A general plan is not considered a project under SB 610 that requires preparation of a WSA. Instead, a general plan relies on information prepared by the water supplier in the UWMP to demonstrate that the proposed population increase would not create a water demand that would exceed the supply in normal, dry, and multiple dry years, as discussed in the following paragraphs. Future projects under the General Plan 2040 that meet the criteria under California Water Code Section 10912 would be required to prepare a WSA.

The 2015 MMWD UWMP does not enumerate the water demands for individual cities or towns in its service area. However, the UWMP states that in 2015 the water demand rate was 110 gpcd. This number was obtained by adding together all of the land uses within the service area (e.g., single-family, multifamily, commercial, industrial, institutional and landscape), as well as water losses, fire flows, and water sold to the golf courses and dividing by the total population served. The water demand rate of 110 gpcd is also used in the *City of San Rafael Community Greenhouse Gas Emissions Inventory for the Year 2018*.[28] To determine current and future water demands for the EIR Study Area, which includes the Downtown Precise Plan Area, the water demand rate was multiplied by the proposed population increase in the EIR Study Area and the Downtown Precise Plan Area.[29] These numbers are conservative, because they do not account for future passive and active water conservation efforts, which will reduce the per capita water demand over time. Table 4.17-4 shows results by the entire EIR Study Area and the water demand for just the Downtown Precise Plan Area.

TABLE 4.17-4 EXISTING AND BUILDOUT WATER DEMAND WITHIN EIR STUDY AREA

Area	Existing Population	Population at Buildout	Population Increase at Buildout	Water Demand Rate (gpcd)	Increase in Water Demand at Buildout (gal/day)	Increase in Water Demand at Buildout (afy)
Total EIR Study Area	75,751	84,661	8,910	110	980,100	1,098
Downtown Precise Plan Area	2,315	5,885	3,570	110	392,700	440

Source: Marin Municipal Water District, 2016. *2015 Urban Water Management Plan*.

Water demand in the EIR Study Area is anticipated to increase by 1,098 afy by 2040. The anticipated increase in water demand in the Downtown Precise Plan Area is estimated to be 440 afy, which is approximately 40 percent of the projected EIR Study Area increase in water demand. As shown previously in Table 4.17-3, in the year 2040, MMWD will have a residual water supply capacity of 110,685 afy for a normal year and 18,333 afy at the end of three multiple dry years. Therefore, MMWD would have sufficient water supply to meet the demand of potential future buildout in the remainder of the EIR Study Area and buildout in the Downtown Precise Plan Area.

[28] Marin Climate & Energy Partnership, 2020. *City of San Rafael Community Greenhouse Gas Emissions Inventory for the Year 2018.* Dated April 2020.

[29] Marin Climate & Energy Partnership, 2020. *City of San Rafael Community Greenhouse Gas Emissions Inventory for the Year 2018.* Dated April 2020.

The three MMWD water treatment plants (Bon Tempe Treatment Plant, San Geronimo Treatment Plant, and Ignacio Treatment Facility) have a total capacity of 71 mgd, which equates to 79,530 afy. This substantially exceeds the water demand for the MMWD service area of 42,109 afy in 2040. Therefore, no new water facilities or expansion of existing facilities would be required.

New development or redevelopment within the EIR Study Area would be required to implement the water-efficient requirements for new construction in accordance with the SRMC, CALGreen, and the California Plumbing Code. In addition, all new landscapes associated with new development would be required to comply with the water-efficient-landscaping measures specified in the MMWD's Water Conservation Ordinance and the SRMC. Water infrastructure improvements must be designed, constructed, and operated in accordance with the applicable regulations in the MMWD Code. Service charges and connection fees will assist in funding MMWD's CIP, which includes treatment plant seismic and reliability upgrades, ongoing pipeline replacement, replacement and upgrades of aging pump stations, storage tank replacement and upgrades, and improvements to fire flow. These measures ensure that MMWD would have adequate capacity for the proposed increases in water flows within the EIR Study Area with implementation of the proposed General Plan 2040.

In addition, the proposed Community Design and Preservation (CDP), Conservation and Climate Change (C), and Community Services and Infrastructure (CSI) Elements contain goals, policies, and programs that require local planning and development decisions to consider impacts to water supply. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts to water supply:

Goal CDP-3: Attractive Streets and Public Spaces. Create streets, public spaces, and civic buildings that add value to private property, promote environmental sustainability, and contribute to San Rafael's visual quality and identity.

- Policy CDP-3.4, Landscape Maintenance, requires that the City prioritize landscape maintenance along the City's most heavily traveled roadways and gateways and that operational practices support the City's commitment to water conservation.
  - Program CDP-3.4A: Landscape Stewardship. Encourage partnerships with neighborhoods and civic organizations to maintain and improve the City's landscaped areas.

Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.15, Landscaping with Appropriate Naturalized Plant Species, encourages landscaping with native and compatible non-native plant species that are appropriate for the dry summer climate of the Bay Area, with an emphasis on species determined to be drought-resistant.
  - Program C-1.15A: Education on Desirable Plant Species. Leverage the educational and website materials on "water-wise" plants developed by the Marin Municipal Water District and fire-prone plants from FireSafe Marin as resources for San Rafael property owners. The City should also create Resilient Landscape Templates (RLTs) that offer suggestions for homeowners to achieve beautiful, fire-resistant, drought tolerant landscaping.

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

- Policy C-3.8, Water Conservation, encourages water conservation and increased use of recycled water in businesses, homes, and institutions and requires that local development and building standards include the efficient use of water.
  - Program C-3.8A: Water Conservation Programs. Work with Marin Municipal Water District and other organizations to promote water conservation programs and incentives and ensure compliance with state and MMWD regulations, including the provisions of the Urban Water Management Plan (see Policy CSI-4.8 for additional guidance).
  - Program C-3.8B: Public Education. Continue and expand programs to educate residents and businesses about the benefits of water conservation and requirements for plumbing fixtures and landscaping.
  - Program C-3.8C: Reclaimed Water Use. Support the extension of recycled water distribution infrastructure by Las Gallinas Valley Sanitary and MMWD, along with programs to make the use of recycled water more feasible (see Policy CSI-4.12 for additional guidance).
  - Program C-3.8D: Graywater and Rainwater. Encourage the installation of graywater and rainwater collection systems. Explore revisions to building codes that would facilitate such projects where obstacles currently exist.
  - Program C-3.8E: Reducing Municipal Water Use. Reduce water use for municipal operations through water-efficient landscaping, maintenance of irrigation equipment, replacement of inefficient plumbing fixtures, and using recycled water where available and practical.
- Policy C-3.9, Water-Efficient Landscaping, encourages the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with fire-prevention and climate resilience goals.
  - Program C-3.9A: Demonstration Gardens. Maintain the Falkirk demonstration gardens illustrating xeriscaping principles and drought-tolerant plant materials.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.1, Capital Investment, requires the City to provide for ongoing, preventative maintenance of infrastructure and timely replacement, repair, and upgrading of City equipment.
  - Program CSI-4.1A: Capital Improvement Programming. Maintain and regularly update a multi-year Capital Improvement Plan (CIP) covering City owned and operated infrastructure and public facilities. Seek the input of other local service providers (MMWD, LGVSD, etc.) when preparing the City's CIP and encourage these agencies to seek City input as they prepare their own CIPs.
  - Program CSI-4.1B: Funding for Maintenance and Capital Costs. Consider ways to improve the reliability of maintenance funding, such as establishing a reserve fund or voter-approved parcel taxes and special assessments. Identify potential funding sources for unmet and anticipated future capital project needs, such as grants, bond measures, and impact fees.
  - Program CSI-4.1C: Community-Supported Services. Consider community-supported (e.g., cooperative) services as an alternative to bring fundamental service upgrades to neighborhoods and managing capital costs.

- Policy CSI-4.2: Adequacy of City Infrastructure and Services, requires applicants to demonstrate that their projects can be adequately served by the City's infrastructure as part of the development review process. All new infrastructure shall be planned and designed to meet the engineering standards of the City and various local service and utility providers.
  - Program CSI-4.2A: Long-Term Planning. Continue to use the CIP to analyze and respond to local capital facility needs.
  - Program CSI-4.2B: Engineering Standards. Require new development to comply with the subdivision standards in the San Rafael Municipal Code, as well as relevant Marin County and utility district engineering standards. Where feasible, encourage development to reach beyond current standards and collaborate with the community to innovate and define new best practices.
  - Program CSI-4.2C: Impact Fees. Continue to collect impact fees and use other funding mechanisms to ensure that new development pays its fair share of providing/ upgrading services associated with that development.
- Policy CSI-4.8, Potable Water Supply and Delivery, requires that the City work with MMWD to meet projected water demand, encourage water conservation, and ensure the reliability and safety of the water supply and distribution system.
  - Program CSI-4.8A: Urban Water Management Plan. Support MMWD's efforts to regularly update and implement an Urban Water Management Plan.
  - Program CSI-4.8B: Water Supplies. Monitor efforts by the MMWD to implement conservation standards and expand the local water supply to meet long-term needs and potential future drought conditions. If desalination facilities are proposed along the bayfront in the future, ensure adequate review of environmental, design, and economic issues.
  - Program CSI-4.8C: Water Pressure and Storage. Work with MMWD to ensure that water pressure and storage remains adequate for fire-fighting, and to implement standards for new development that ensure adequate water flow.
- Policy CSI-4.12, Recycled Water. Encourage additional wastewater recycling by the Las Gallinas Valley Sanitary District, initiation of wastewater recycling by the Central Marin Sanitation Agency, additional recycled water distribution by MMWD, and additional use of reclaimed water where supply ("purple pipe") is available.
  - Program CSI-4.12A: CMSA Capacity Expansion. Support implementation of the CMSA/ MMWD Recycled Water Study recommendations, enabling increased use of recycled water and reduced potable water demand.
  - Program CSI-4.12B: Las Gallinas Expansion Project. Support completion of the Recycled Water Expansion Project and continued expansion of recycled water capacity.
  - Program CSI-4.12C: Sewer Line Replacement. Replace low-lying sewer pipes as needed to reduce saltwater intrusion, thereby reducing the cost of producing reclaimed water.

The 2015 MMWD UWMP indicates that there is a surplus water supply even during multiple dry years and water demand from potential future development from implementation of the proposed General Plan 2040 would not exceed the available supply. Therefore, no new water facilities or expansion of existing facilities would be required. In addition, compliance with the City and MMWD's regulatory requirements for new construction and water-efficient landscaping and implementation of the General Plan 2040 goals,

policies, and programs listed above would result in *less than significant* impacts with respect to water supply and the need for new and/or expanded water facilities.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As shown above in Table 4-17.4, the estimated water demand for the Downtown Precise Plan Area would be 440 afy at full buildout. This is approximately 1.0 percent of the projected water demand for the MMWD service area in 2040. Since MMWD has a surplus water supply of 110,685 afy for a normal year and 18,333 afy for a single dry year or at the end of three dry years, the water demand for the Downtown Precise Plan Area would not exceed MMWD's water supply.

In addition, MMWD has indicated that the current water distribution system will be able to handle future growth and development throughout Marin County, including the EIR Study Area.[30] As part of MMWD's ongoing capital improvement program to improve the water pipeline distribution system, 4,000 feet of water pipelines beneath Third Street between Irwin Street and Fourth Street will be replaced in the next five years. The Fire Flow Improvement Program also plans to replace the pipeline on Fifth Avenue between A street and Grand Avenue, which is mostly within the Downtown Precise Plan Area.[31]

The water demand for the Downtown Precise Plan Area would be only 1.0 percent of MMWD's projected water demand, and there is sufficient supply, even in single- and multiple-dry years. Also, MMWD's water treatment plants currently have the capacity to treat up to 1.9 times the projected water demand in the year 2040, and treatment plant upgrades are planned in the future. Therefore, no new water facilities or expansion of water facilities are necessary, and the impact is *less than significant*.

Significance without Mitigation: Less than significant.

UTIL-2	**Implementation of the proposed project could have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.**

General Plan 2040

As shown on Table 3-6 in Chapter 3, Project Description, of this Draft EIR, the existing (2020) population within the EIR Study Area of 75,751 is projected to grow with implementation of the proposed project to 84,661 in 2040, for a net increase of 8,910 residents. The City's existing employment level of 44,200 jobs is projected to grow to 48,315 by 2040 for a net increase of 4,115 jobs. This results in a net increase of

[30] Marin Municipal Water District, 2019. Correspondence between Lucy Croy, P.E., Senior Engineer – Planning, MMWD, and Steve Bush, P.E., Senior Engineer, PlaceWorks, dated May 31, 2019.

[31] Marin Municipal Water District. June 5 and 10, 2019. Email correspondences with Lucy Croy, Senior Engineer.

13,025 people by 2040, including both residents and employees. This is consistent with the projected population increase for the MMWD service area.[32]

As described in Impact Discussion UTIL-1, a water demand of 110 gpcd was used in this evaluation, pursuant to the MMWD 2015 UWMP. This is also consistent with the water demand rate of 110 gpcd in the *City of San Rafael Community Greenhouse Gas Emissions Inventory for the Year 2018*. The water demand rate of 110 gpcd is conservative because it does not consider passive and active conservation measures that will reduce the water demand rate over time. The result is a water demand increase within the EIR Study Area of 1,098 afy by 2040. This projected net increase in water demand at buildout is approximately 2.6 percent of the total water demand within the MMWD service area.

As shown previously in Table 4.17-3, MMWD has a surplus water supply of 110,685 afy for a normal year and 18,333 afy at the end of a single dry year or three dry years. Therefore, MMWD would have sufficient water supply to meet the demand of the EIR Study Area at buildout.

Additionally, potential future development pursuant to the proposed General Plan 2040 would be required to implement the water-efficient requirements specified in the SRMC and MMWD's Water Conservation Ordinance. Any new water infrastructure or improvements must be designed, constructed, and operated in accordance with the applicable regulations in the MMWD Code. In addition, potential future development pursuant to the proposed General Plan 2040 and the City would be required to comply with and implement the General Plan goals, policies, and programs listed in Impact Discussion UTIL-1.

In summary, buildout associated with the proposed General Plan 2040 would not result in a shortage of water supplies from MMWD. In addition, compliance with City and MMWD code requirements for new construction and adherence to the General Plan policies, impacts associated with water supply would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As shown previously in Table 4.17-4, the estimated water demand for the Downtown Precise Plan Area will be 440 afy at full buildout. This is approximately 1.0 percent of the projected water demand for the MMWD service area in 2040. Since MMWD has a surplus water supply of 110,685 afy for a normal year and 18,333 afy for a single dry year or at the end of three dry years, the water demand for the Downtown Precise Plan Area would not exceed MMWD's water supply.

In addition, compliance with and implementation of the City and MMWD's regulatory requirements for new construction and water-efficient landscaping and the proposed General Plan goals, policies, and programs listed in Impact Discussion UTIL-1 would result in *less than significant* impacts with respect to water supply.

[32] Marin Municipal Water District, 2016. *Urban Water Management Plan, 2015 Update*. Dated June 2016.

Significance without Mitigation: Less than significant.

UTIL-3	Implementation of the proposed project could result in a cumulatively considerable impact to water service.

This section analyzes potential impacts to water supply that could occur from the proposed project in combination with other reasonably foreseeable projects in the surrounding area. The geographic scope of this cumulative analysis is the MMWD service area, and the analysis is based on MMWD's current UWMP. While the proposed project would contribute to an increased demand for water supply, the increased demand would not exceed the long-term supply under normal years or multiple dry years through 2040. Also, the 2020 UWMP, which is currently being prepared, will account for future development within the county and the resultant increases in demand based on population projections within MMWD's service area. With implementation of SB X7-7 and State, regional, and local water conservation ordinances, all new development would be required to conserve water use and implement water efficiency measures. In addition, pursuant to SB 610 and SB 221, WSAs would be prepared for large development projects prior to approval of each project to ensure adequate water supply for new development.

Overall, cumulative water demands would neither exceed planned levels of supply nor require building new water treatment facilities or expanding existing facilities beyond what is currently planned. In addition, future development would be required to pay connection fees to MMWD, which would offset the costs of system maintenance and capital upgrades to support the new development in the MMWD service area. Together, existing regulations, proposed policies, and other considerations would ensure that the proposed project would not result in a cumulatively considerable impact to water supply and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant

4.17.2 WASTEWATER

4.17.2.1 ENVIRONMENTAL SETTING

Regulatory Framework

Federal Regulations

Clean Water Act

The CWA of 1972 regulates the discharge of pollutants into watersheds throughout the nation. It is the primary federal law that governs water pollution and is implemented by the USEPA. Under the CWA, the USEPA sets wastewater standards and makes it unlawful to discharge pollutants from a point source into any navigable waters without obtaining a permit. Point sources include any conveyances, such as pipes and man-made drainage channels, from which pollutants may be discharged.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established as part of the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable connections and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a wastewater (sewage) treatment plant.

State Regulations

State Water Resources Control Board

On May 2, 2006, the SWRCB adopted Statewide General Waste Discharge Requirements (Order No. 2006-0003) and a monitoring and reporting program (Order No. WQ-2013-0058-EXEC) for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipes. The order provides a consistent statewide approach to reducing sanitary sewer overflows (SSO). The Waste Discharge Requirements require public agencies that own or operate sanitary sewer systems to develop and implement Sewer System Management Plans (SSMPs) and report all SSOs to the SWRCB's online reporting system. The SWRCB has delegated authority to nine RWQCBs to enforce these requirements within their regions.

The San Francisco Bay RWQCB (Region 2) issues and enforces NPDES permits in the EIR Study Area. NPDES permits allow the RWQCB to regulate where and how waste is disposed, including the discharge volume and effluent limits of waste and the monitoring and reporting responsibilities of the discharger. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance.

Sanitary District Act of 1923

The Sanitary District Act of 1923 (California Health and Safety Code Section 6400 et seq.) authorizes the formation of sanitation districts and enables the sanitation districts to construct, operate, and maintain facilities for the collection, treatment, and disposal of wastewater.

Local Regulations

Wastewater collection and treatment for the City of San Rafael is provided by three entities: (1) LGVSD, which serves the area north of Puerto Suello Hill and operates the LGVSD WWTP; (2) San Rafael Sanitation District (SRSD), which collects wastewater from the area south of Puerto Suello Hill; and (3) Central Marin Sanitation Agency (CMSA), which receives wastewater from SRSD and operates the CMSA WWTP.

Las Gallinas Valley Sanitary District NPDES Permit

The NPDES permit for LGVSD's WWTP and its wastewater collection system was issued by the San Francisco Bay RWQCB as Order No. R2-2020-0022 (NPDES No. CA0037851), adopted on July 8, 2020. The permit details discharge prohibitions and effluent limitations on the discharge of treated wastewater to Miller Creek, receiving water limitations, and monitoring and reporting requirements. The new permit is scheduled to take effect on September 1, 2020, and expire on August 31, 2025.

Las Gallinas Valley Sanitary District Sewer System Management Plan

The LGVSD's current SSMP is dated May 2020 and was prepared in accordance with State regulations to manage, operate, and maintain all parts of the LGVSD's sanitary sewer collection system. The SSMP was prepared pursuant to the requirements of the SWRCB Order No. 2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and the Monitoring and Reporting Program associated with the statewide order that was amended in July 2013 (SWRCB Order WQ-2013-0058-EXEC). The SSMP describes LGVSD's operations and maintenance program, design and performance standards, emergency response plan, SSO notification, reporting and record keeping, and system evaluation and capacity assurance plan.

Las Gallinas Valley Sanitary District Ordinance Code

The ordinances of LGVSD are compiled, consolidated, and arranged as a comprehensive ordinance code:

- The Sanitary Code of LGVSD. This ordinance regulates the use of public and private sewers and drains, the installation and connection of building sewers and drains, and the installation of sewer laterals and public sewers and public sewer main extensions.
- The Acceptance of Non-Domestic Wastes Ordinance. This ordinance sets forth uniform requirements for industrial users of LGVSD's system to comply with all applicable state and federal laws, including the CWA, the General Pretreatment Regulations, and the California Water Code. The objective of the ordinance is to prevent the introduction of pollutants into the WWTP that will interfere with its operation or that will pass through the WWTP, inadequately treated, into receiving waters.
- The Construction and Installation of Sanitary Sewer Facilities in Areas Underlain by Bay Mud Ordinance. This ordinance regulates the construction and installation of sanitary sewer facilities in areas underlain by bay mud.
- The Acceptance of Fats, Oils, and Grease Ordinance. This ordinance develops and implements a program to reduce the discharge of fats, oils, and grease (FOG) from restaurants and other food service establishments to levels that will not cause blockage in sewer lines. The FOG ordinance requires restaurants and other food service establishments to have a grease removal device (grease trap or grease interceptor) in use.
- The Prohibition of Food Grinders in Commercial Food Service Establishment Ordinance. This ordinance prohibits the installation of food grinders in new or remodeled commercial food service establishments. For existing commercials food service establishments, food grinders shall be removed.

- The Sewer Connection Policy. This policy approves new sewer connections only after it has been determined that adequate line and WWTP capacity exist or will exist at the time the flow is expected to start.[33]

San Rafael Sanitation District Sewer System Management Plan

The SRSD's current SSMP is dated October 2015 and was prepared pursuant to SWRCB Order No 2006-0003-DWQ and its amendment. The SSMP describes measures to minimize the frequency of SSOs, implement a FOG control program, and provide adequate capacity to convey peak flows.

The SRSD Board of Directors passes ordinances and resolutions to govern all aspects of the SRSD's collection system. Regulations include the prevention of illicit discharges into the SRSD's sanitary sewer system; the design and construction of new and rehabilitated sewers and connections; SRSD access; limits on FOG and other debris; enforcement of violations; and the installation, testing, and inspection of new and rehabilitated sewers.[34]

Central Marin Sanitation Agency NPDES Permit

Wastewater discharge requirements for CMSA's WWTP are detailed in Order No. R2-2018-0003 (NPDES No. CA0038628), issued by the San Francisco RWQCB and adopted on January 10, 2018. The permit, which expires on February 28, 2023, includes discharge prohibitions without sufficient dilution, effluent flow limitations, receiving water limitations, reporting requirements, and a pollution minimization program.

Central Marin Sanitation Agency Ordinances

CMSA adopted a FOG ordinance (Ordinance No. 2007-1) to minimize SSOs in the CMSA service area. The FOG ordinance controls the discharge of FOG to the sanitary sewer from commercial food service establishments by establishing requirements for food service establishments to install and maintain grease traps and interceptors. This ordinance was adopted pursuant to provisions of Section 6400 et seq. of the Health and Safety Code of the State of California. CMSA Ordinance No. 2019-1 outlines the fees to be paid for each new sewer connection based on land use or plumbing fixtures. Fees are also assessed for septic and chemical toilet waste haulers, FOG haulers, and industrial waste discharges. CMSA Ordinance No. 2009-2 is aimed at reducing the mercury load to the sanitary sewer system by regulating the discharge of amalgam wastes from dental offices.

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to wastewater infrastructure and services are primarily in the Land Use, Infrastructure, and Air and Water Quality Elements. As part of the proposed project, some existing General Plan policies would be amended or

[33] Las Gallinas Valley Sanitary District, 2019, *Ordinance Code*. http://www.lgvsd.org/document-library/ordinance-code/.

[34] San Rafael Sanitation District, 2015, *Sewer System Management Plan*. https://storage.googleapis.com/proudcity/sanrafaelca/uploads/SRSD-SSMP-Final-2015-public-1.pdf

substantially changed, and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.17.2.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives to minimize adverse impacts to water quality in San Rafael. The SRMC is organized by title, chapter, and section. The SRMC includes various directives pertaining to wastewater issues. Most such directives are found in Title 12, Building Regulations, and Title 15, Subdivisions, as follows:

- **Chapter 12.250, California Plumbing Code Amendments.** Section 12.25.010, Amendments, states there are no amendments to the 2019 California Plumbing Code, adopted as described in Section 12.100.010, Adopted Codes.
- **Chapter 12.235, California Green Building Construction Standards Code Amendments.** Section 12.235.020, Amendments, describes the deletions and amendments to the 2019 CALGreen Building Code Standards as described in Section 12.100.010, Adopted Codes.
- **Chapter 15.06, Subdivision Design Standards and Miscellaneous Requirements.** Section 15.06.020, Utilities and Services, states that no subdivision of land into two or more lots or parcels for the purpose of development shall be approved by the City unless it is determined that wastewater and sewage disposal for all new lots or parcels shall be provided by either the SRSD or the LGVSD, depending upon the property location. The creation of an individual on-site septic system intended to serve a new lot or parcel is prohibited.

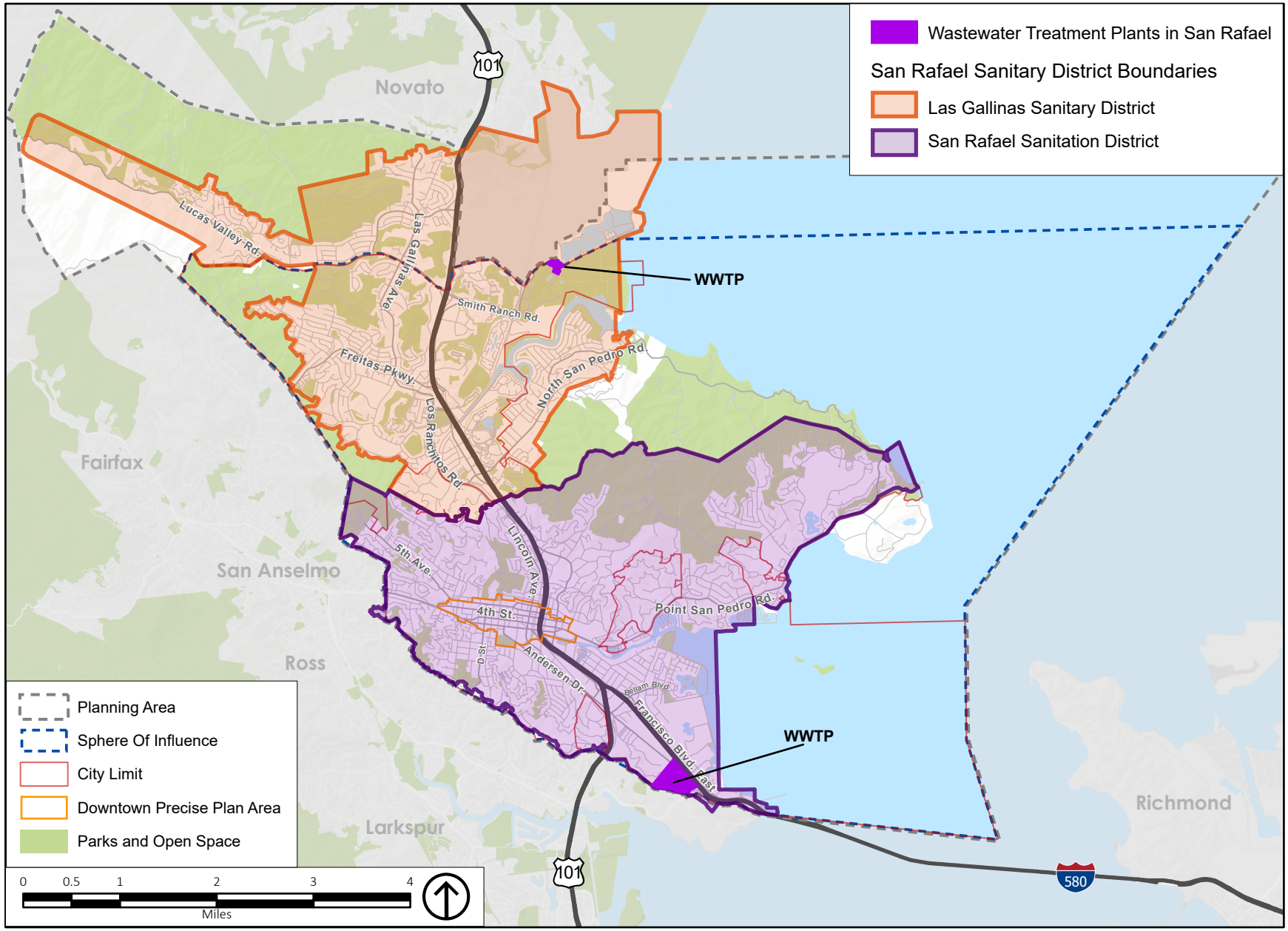
Existing Conditions

Wastewater Collection

Wastewater collection and treatment for the EIR Study Area is provided by three entities: (1) LGVSD, which serves the area north of Puerto Suello Hill and operates the LGVSD WWTP; (2) SRSD, which collects wastewater from the area south of Puerto Suello Hill; and (3) CMSA, which receives wastewater from SRSD and operates the CMSA WWTP. Figure 4.17-2 shows the service area of SRSD and LGVSD and the locations of the CMSA and LGVSD WWTPs.

Las Gallinas Valley Sanitary District

The LGVSD serves a population of approximately 32,000 persons north of Puerto Suello Hill and neighboring unincorporated areas of Marin County and covers approximately 20 square miles. The LGVSD's collection system consists of 105 miles of gravity sewer pipelines, 6.7 miles of force mains, and 28 pump stations. The LGVSD sewer pipelines in the EIR Study Area range from 6 to 24 inches.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.17-2

Sanitary Districts and Wastewater Treatment Plant Locations

The LGVSD also operates the LGVSD WWTP.[35] The LGVSD operates a preventative maintenance program designed to maintain the integrity of the system, reduce the frequency of SSOs, and reduce infiltration/inflow. The sewer collection pump stations are maintained by the WWTP operators, and the pump stations are inspected two to three times a week. Preventative activities that are performed in the field include flushing, rodding, and video inspections at frequencies designed to prevent or minimize blockages and/or SSOs. Revenue for operation and maintenance activities is derived from sewer rates paid by users of the collection system and treatment plant as well as property tax assessments.

LGVSD has an annual capital improvement program to address infiltration/inflow, capacity, storage, structural, and other potential issues in the collection system. In general, the sewer system functions adequately, even during flooding and wet weather conditions.[36] However, three trunk sewers that connect to the WWTP surcharge[37] occasionally during extremely high peak wet weather flow conditions following major storm events. These include the Marinwood-Lucas Valley Trunk Sewer between the railroad and the WWTP, the Terra-Linda Trunk Sewer near the Duckett pump station, and the Mulligan Trunk Sewer, which may surcharge when there is a malfunction of the Mulligan pump station. However, a relief sewer was installed in 2019 that should serve as a long-term solution for the Mulligan Trunk Sewer. A summary of proposed capital improvement projects is provided in the latest LGVSD SSMP.[38]

San Rafael Sanitation District

The SRSD was formed by the County of Marin in 1947 and collects wastewater from the area south of Puerto Suello Hill, the adjacent unincorporated areas, and San Quentin prison. SRSD is one of three service districts of the CMSA. SRSD provides wastewater collection over an area of 12.75 square miles and includes 134 miles of sewer pipelines, 32 wastewater pump stations, and 13 miles of force mains. The wastewater collected by SRSD is conveyed to the CMSA WWTP, located at 1301 Andersen Drive in San Rafael. SRSD sewer pipelines within the EIR Study Area range from 6 to 36 inches and include both gravity lines and pressurized lines (force mains).

The SRSD maintains a sewer pipeline cleaning program, where all gravity sewer pipes are cleaned at least once every three years. Gravity sewer lines with FOG issues or “hot spots” are cleaned more frequently with a hydro flusher. In addition, the SRSD performs annual maintenance on all pump station pumps, emergency generators, pump station wet wells, and force main valves. All pump station valves are exercised quarterly; all air relief valves are inspected and cleaned twice per year; and chemical injection systems are inspected weekly, with samples taken twice weekly. All pump stations are checked three times per week. The SRSD obtains its revenue from connection fees, service fees, and property taxes.[39]

[35] Las Gallinas Valley Sanitary District, 2016, *Sewer System Management Plan*. http://www.lgvsd.org/wp-content/uploads/LGVSD-SSMP-2016.pdf.

[36] Las Gallinas Valley Sanitary District, 2019. Correspondence between Michael P. Cortez, PE, District Engineer, LGVSD and Steve Bush PE, Senior Engineer, PlaceWorks. Dated July 12, 2019.

[37] Sewer surcharge refers to the overloading of the sewer beyond its design capacity due to inflow and infiltration of water. A surcharging sewer often results in sewer overflow at manholes and customers' overflow relief gully

[38] Las Gallinas Valley Sanitary District, 2016, *Sewer System Management Plan*. http://www.lgvsd.org/wp-content/uploads/LGVSD-SSMP-2016.pdf.

[39] San Rafael Sanitation District, 2015. *Sewer System Management Plan.* Dated October 2015. Prepared by Harris.

According to the SRSD, there are currently no deficiencies in capacity for the SRSD sewer system.[40] The SRSD performed a capacity assessment for four key trunk sewer lines to determine potential capacity issues in 2010. The recommended projects from the Capacity Assessment Report have been completed or will be completed by the end of 2020.[41]

Wastewater Treatment

Las Gallinas Valley Sanitary District Wastewater Treatment Plant

LGVSD owns and operates the LGVSD WWTP at 300 Smith Ranch Road in San Rafael (see Figure 4.17-2). It provides secondary treatment of domestic wastewater collected from the northern portion of the EIR Study Area and unincorporated portions of Marin County. The LGVSD WWTP uses a two-stage biofiltration process followed by ammonia removal and filtration. Prior to discharge, the treated sewage is chlorinated to kill bacteria and then dechlorinated to remove the chlorine toxicity to organisms in the receiving water bodies. Solids are processed through a sludge thickener, anaerobic digesters, and sludge lagoons. The methane gas produced by the digesters is processed in a cogeneration unit to produce electricity and waste heat.

During extreme wet weather events, the LGVSD WWTP initiates an operational strategy called blending to manage high flow rates. All wastewater undergoes primary treatment, which consists of screening, grit removal, and chemical removal of solids by settling. Most of the wastewater then continues to secondary treatment; however, a portion of the flow is routed around (i.e., bypasses) secondary treatment to protect the biological processes during high flow rates and then recombines with the main flow prior to disinfection. During the wet season, the facility discharges excess treated effluent to Miller Creek, which flows into San Pablo Bay. During the dry season, the LGVSD WWTP stores the effluent on-site in storage ponds and sends a portion of the treated effluent to the MMWD Las Gallinas Valley Water Recycling Facility.[42]

The NPDES permit for the LGVSD WWTP was issued by the San Francisco Bay RWQCB as Order No. R2-2020-0022 (NPDES No. CA0037851), adopted on July 8, 2020. This order establishes a maximum average dry weather effluent flow of 2.92 mgd. Blended secondary-treated wastewater discharges are approved under the bypass conditions of the NPDES permit when the peak wet weather influent flow volume exceeds the reliable process capacity of the secondary treatment units of 8 mgd. This number will be increased to 18 mgd upon completion of the LGVSD WWTP upgrade.

The LGVSD WWTP can reliably treat up to 8 mgd with full secondary treatment, although with completion of the LGVSD WWTP upgrade in 2021, the LGVSD WWTP will be able to increase its wet weather treatment capacity to 18 mgd. The average dry weather flow for the past few years is 2.36 mgd, and the

[40] San Rafael Sanitation District, 2019. Correspondence between Doris Toy, Sanitation District Manager, and Steve Bush, PE, Senior Engineer, PlaceWorks. Dated May 31, 2019.

[41] San Rafael Sanitation District, 2015. *Sewer System Management Plan.* Dated October 2015. Prepared by Harris.

[42] San Francisco Bay Regional Water Control Board, May 13, 2015., *Order No. R2-2015-0021*. https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2015/R2-2015-0021.pdf.

peak wet weather flow is around 22 to 24 mgd.[43] Any additional flows are diverted around the secondary treatment units and blended with secondary-treated effluent. After disinfection, the blended flow is dechlorinated prior to discharge.

During dry weather, treated effluent is reclaimed on-site in accordance with Order No. 92-064. The on-site reclamation system consists of two 20-acre storage ponds, a 20-acre freshwater marsh/wildlife pond, and 200 acres of irrigated pasture. The storage ponds dechlorinate the effluent through natural processes. Surplus water remaining in the storage ponds at the end of the reclamation season is returned to the LGVSD WWTP for treatment before discharge to Miller Creek. LGVSD WWTP effluent and water from the storage ponds are also used by MMWD as feedstock in its recycled water plant, which produces disinfected tertiary recycled water during summer for distribution throughout its northern San Rafael service area.[44]

LGVSD is currently in the process of constructing a multiyear, multimillion-dollar LGVSD WWTP upgrade and recycled water treatment plant expansion, which should be completed by the end of 2021. This project was designed based on flow rates and growth projection factors from the City of San Rafael and Marin County's Countywide Plan.[45]

During 2017, LGVSD reached an agreement with MMWD to expand LGVSD's recycled water treatment plant to provide tertiary treated wastewater to be distributed to MMWD's customers. The expansion is expected to be completed by December 2021. LGVSD's recycled water treatment facility, which has been online since September 2012, currently has a capacity of 1.4 mgd but will be expanded to treat 5.4 mgd.[46]

Central Marin Sanitation Agency Wastewater Treatment Plant

The CMSA WWTP is at 1301 Andersen Drive in San Rafael, as shown on Figure 4.17-2. The WWTP has a two-mile outfall through which treated wastewater is discharged into Central San Francisco Bay. The CMSA WWTP serves an area of approximately 43.5 square miles and includes the residents, businesses, and institutions in the city of Larkspur; the towns of Corte Madera, Fairfax, Ross, and San Anselmo; portions of the city of San Rafael south of Puerto Suello Hill; the unincorporated areas of Ross Valley and San Quentin Village; and San Quentin State Prison.

The NPDES permit for the WWTP was issued by the San Francisco Bay RWQCB as Order No. R2-2018-0003 (NPDES No. CA0038628), which became effective in March 2018 and expires in February 2023. This order establishes a maximum average dry weather effluent flow of 10 mgd and a facility design flow of 30 mgd. The WWTP includes preliminary treatment (headworks with screening and grit removal), primary treatment, secondary treatment (biotowers, activated sludge, and secondary clarification), disinfection,

[43] Las Gallinas Valley Sanitary District, July 12, 2019, Email correspondence with Michael Cortez, District Engineer.

[44] San Francisco Bay Regional Water Control Board, May 13, 2015, *ORDER No. R2-2015-0021.* https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2015/R2-2015-0021.pdf.

[45] Las Gallinas Valley Sanitary District, 2019. Email correspondence between Michael P. Cortez, PE, District Engineer, LGVSD and Steve Bush PE, Senior Engineer, PlaceWorks. Dated July 12, 2019.

[46] Las Gallinas Valley Sanitary District, 2016. *Las Gallinas Secondary Treatment and Recycled Water Plant Upgrade Project. MND – Mitigated Negative Declaration*. SCH No. 2016052009.

and dechlorination. Solids handling includes waste-activated sludge thickening, anaerobic digestion, biosolids dewatering, and cogeneration fueled by biogas. During wet weather periods, primary-treated wastewater greater than 30 mgd is routed around the secondary treatment processes and blended with the secondary-treated wastewater prior to disinfection, dichlorination, and discharge to San Francisco Bay via a gravity outfall and/or effluent pump station. Such discharges are approved under the bypass conditions of the NPDES permit if the blended discharge complies with the effluent and receiving water limitations in the order. CMSA discharges blended effluent about 11 times per year.[47]

According to Mr. Jason Dow, General Manager of CMSA, the WWTP typically receives and treats:

- Average dry weather flow of 3.1 mgd
- Average annual flow of 4.95 mgd
- Average wet weather flow of 6.51 mgd
- Peak wet weather flow of 58.5 mgd[48]

The current (2017) *CMSA Facilities Master Plan* focuses on the condition of the facilities and impacts associated with potential regulatory changes, reduction in energy usage and greenhouse gas emissions, operational improvements, and climate change. The *CMSA Facilities Master Plan* identifies 26 projects that are recommended for completion within the next 15 years and identifies facility and/or equipment improvements to address sea level rise and potential regulatory changes.[49]

4.17.2.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant wastewater-related impact if it would:

1. Require or result in the relocation or construction of new or expanded wastewater treatment or facilities, the construction or relocation of which could cause significant environmental effects.
2. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
3. Result in significant cumulative impacts related to wastewater facilities.

UTIL-4	**Implementation of the proposed project could require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.**

[47] San Francisco Bay Regional Water Control Board, January 10, 2018, *Order No. R2-2018-0003*. https://www.cmsa.us/assets/documents/permits/2018/NPDES%20Order.pdf

[48] Central Marin Sanitation Agency, May 21, 2019, Email correspondence with Jason Dow, General Manager.

[49] Central Marin Sanitation Agency, *Adopted Operating and Capital Budget July 1,2018 – June 30, 2019.* https://www.cmsa.us/assets/documents/budget/FY19%20Budget%20Adopted%202018%2006-12%20WEB.pdf, accessed on March 19, 2019.

General Plan 2040

Implementation of the proposed project would have a significant impact if it would result in the construction of a new WWTP or the expansion of existing WWTP, the construction of which would have a significant effect on the environment. As discussed below, future demands from the increased population and land use changes from implementation of the proposed General Plan 2040 would not exceed the design or permitted capacity of the LGVSD'S and CSMA'S WWTP that serve the EIR Study Area, which includes the Downtown Precise Plan Area.

Under the proposed project, wastewater discharge would increase throughout the EIR Study Area due to increases in population. The proposed increase in population for the EIR Study Area is 8,910, with an increase of 3,570 within the Downtown Precise Plan Area (see Tables 3-6 and 3-7, respectively, in Chapter 3, Project Description, of this Draft EIR). Based on information provided in the MMWD 2015 UWMP, it was assumed that 70 percent of the water demand is indoor water use. It also was assumed that wastewater discharge would be 90 percent of the indoor water demand. Table 4.17-5 shows the increase in wastewater discharge for the total EIR Study Area and for the Downtown Specific Plan Area alone.

TABLE 4.17-5 INCREASE IN WASTEWATER DISCHARGE AT BUILDOUT IN 2040

Area	Increase in Water Demand at Buildout (gal/day)	Increase in Indoor Water Demand[a] (gal/day)	Increase in Wastewater Discharge[b] (gal/day)	Increase in Wastewater Discharge (mgd)
Total EIR Study Area	980,100	686,070	617,463	0.62
Downtown Precise Plan Area	392,700	274.890	247,401	0.25

Notes:
[a.] Indoor water demand is estimated at 70 percent of water demand.
[b.] Wastewater discharge is estimated at 90 percent of indoor water demand.
Source: Marin Municipal Water District, 2016. 2015 Urban Water Management Plan.

Implementation of the proposed project would generate an additional 0.62 mgd within the EIR Study Area. There are two WWTPs that serve the EIR Study Area: the LGVSD WWTP, which treats effluent from the areas north of Puerto Suello Hill, and the CSMA WWTP, which treats effluent from the areas south of Puerto Suello Hill. For this analysis, it is assumed that 35 percent of the effluent generated in the EIR Study Area is transported to LGVSD WWTP, and 65 percent is transported to CSMA WWTP for treatment.

The LGVSD WWTP has a maximum permitted dry weather flow of 2.92 mgd, and the WWTP has averaged a dry weather flow rate of 2.36 mgd for the past few years.[50] Therefore, the LGVSD WWTP has a surplus capacity of 0.56 mgd during dry weather conditions. For this analysis, it is assumed that 35 percent of the wastewater generated in the EIR Study Area (i.e., 0.22 mgd) is directed to the LGVSD WWTP. There is not expected to be a significant increase in wastewater demand in the LGVSD service area that is outside of the EIR Study Area. Therefore, the LGVSD WWTP can accommodate the increase in wastewater

[50] Las Gallinas Valley Sanitary District, 2019. Correspondence between Michael Cortez, PE, District Engineer, LGVSD, and Steve Bush, PE, Senior Engineer, PlaceWorks. Dated July 12, 2019.

generation from the EIR Study Area. In addition, the LGVSD WWTP is undergoing an upgrade that should be completed by the end of 2021 and will increase its wet weather treatment capacity to 18 mgd.[51]

According to Mr. Jason Dow of CMSA, the CMSA WWTP treats an average of 3.1 mgd during dry weather flows, and the CMSA WWTP has a permitted dry weather effluent flow of 10 mgd. The EIR Study Area is assumed to contribute an additional 0.40 mgd of wastewater at buildout, which represents about 4 percent of the permitted dry weather flow. Therefore, the CMSA WWTP can easily accommodate the wastewater increase from the EIR Study Area during dry weather conditions.

All potential future development would be required to pay a sewer connection fee prior to the issuance of building permits. Any sewer utility infrastructure improvement would be designed, constructed, and operated in accordance with the LGVSD and CMSA ordinance codes and the SRMC. The sewer connection fees and wastewater collection fees are used by LGVSD, SRSD, and CMSA to continually upgrade components of the wastewater collection and transmission systems through their CIP programs. The CIP improvements include collection system capacity upgrades, correction of structural problems, and modifications to pump stations and treatment facilities.

In addition, the proposed Community Services and Infrastructure (CSI) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts to wastewater facilities. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts to these facilities:

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.1, Capital Investment, requires the City to provide for ongoing, preventative maintenance of infrastructure and timely replacement, repair, and upgrading of City equipment.
  - Program CSI-4.1A: Capital Improvement Programming. Maintain and regularly update a multi-year Capital Improvement Plan (CIP) covering City owned and operated infrastructure and public facilities. Seek the input of other local service providers (MMWD, LGVSD, etc.) when preparing the City's CIP and encourage these agencies to seek City input as they prepare their own CIPs.
  - Program CSI-4.1B: Funding for Maintenance and Capital Costs. Consider ways to improve the reliability of maintenance funding, such as establishing a reserve fund or voter-approved parcel taxes and special assessments. Identify potential funding sources for unmet and anticipated future capital project needs, such as grants, bond measures, and impact fees.
  - Program CSI-4.1C: Community-Supported Services. Consider community-supported (e.g., cooperative) services as an alternative to bring fundamental service upgrades to neighborhoods and managing capital costs.
- Policy CSI-4.2: Adequacy of City Infrastructure and Services, requires applicants to demonstrate that their projects can be adequately served by the City's infrastructure as part of the development review

[51] Las Gallinas Valley Sanitary District, 2019. Correspondence between Michael Cortez, PE, District Engineer, LGVSD, and Steve Bush, PE, Senior Engineer, PlaceWorks. Dated July 12, 2019.

process. All new infrastructure shall be planned and designed to meet the engineering standards of the City and various local service and utility providers.

- Program CSI-4.2A: Long-Term Planning. Continue to use the CIP to analyze and respond to local capital facility needs.
- Program CSI-4.2B: Engineering Standards. Require new development to comply with the subdivision standards in the San Rafael Municipal Code, as well as relevant Marin County and utility district engineering standards. Where feasible, encourage development to reach beyond current standards and collaborate with the community to innovate and define new best practices.
- Program CSI-4.2C: Impact Fees. Continue to collect impact fees and use other funding mechanisms to ensure that new development pays its fair share of providing/ upgrading services associated with that development.

- Policy CSI-4.9, Wastewater Facilities: Ensure that wastewater collection, treatment and disposal infrastructure is regularly maintained and meets projected needs. Improvements should be programmed to meet state and federal standards, respond to sea level rise and seismic hazards, repair and replace aging or leaking pipes, and protect environmental quality.
  - Program CSI-4.9A: Coordination of Services. Support efforts by the Las Gallinas Sanitary District, Central Marin Sanitation Agency and San Rafael Sanitation District to maintain high-quality wastewater collection and treatment facilities.

Potential future development in the EIR Study Area would not require the construction or expansion of a WWTP. Therefore, with adherence to and implementation of the NPDES permits and the City's regulatory requirements as well as the proposed General Plan goals, policies, and programs, impacts associated with WWTP's capacities would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Wastewater from the Downtown Precise Plan Area would be collected by SRSD and transported to the CSMA WWTP. As shown in Table 4.17-5, the estimated wastewater demand for the Downtown Precise Plan Area would be 0.25 mgd at full buildout. This is approximately 2.5 percent of the maximum permitted dry weather flow rate of 10 mgd for the CMSA WWTP. Since the WWTP currently has a surplus wastewater capacity of 6.9 mgd, the wastewater demand for the Downtown Precise Plan Area would not exceed the permitted capacity of CMSA's WWTP or require the construction or expansion of new wastewater facilities. In addition, compliance with and implementation of the City and LGVSD and CSMA's requirements for new sewer connections and the General Plan goals, policies, and programs listed above would result in *less than significant* impacts with respect to WWTPs.

Significance without Mitigation: Less than significant.

UTIL-5	**Implementation of the proposed project could result in the determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.**

As described under Impact Discussion UTIL-4, the LGVSD WWTP is permitted by the RWQCB to treat 2.92 mgd during dry weather conditions, and the CSMA WWTP is permitted to treat 10 mgd during dry weather conditions. According to LGVSD and CSMA plant managers, the dry weather flows during recent years have averaged 2.36 mgd and 3.1 mgd, respectively. Therefore, the residual dry weather flow capacity is 0.56 mgd for the LGVSD WWTP and 6.9 mgd for the CSMA WWTP. The LGVSD WWTP is currently undergoing an expansion project and upgrades that will increase its capacity to 18 mgd during wet weather conditions.

Implementation of the proposed project would generate an additional 0.62 mgd within the EIR Study Area. Assuming that 65 percent of the wastewater is directed to the CSMA WWTP and 35 percent of the wastewater is directed to the LGVSD WWTP, the increased wastewater demand would represent about 39 percent of the LGVSD WWTP's excess capacity and about 5.8 percent of the CSMA WWTP's excess capacity. However, the LGVSD WWTP is currently undergoing an upgrade to increase its capacity, and there is not expected to be a significant increase in wastewater demand for the LGVSD service area outside the boundaries of the EIR Study Area. The CSMA WWTP has excess capacity to treat future wastewater demands within its service area.

In addition, new projects and redevelopment projects within the EIR Study Area would be required to comply with CALGreen plumbing codes and implement active and passive water conservation measures. The reduction in water demand would also result in a reduction in the amount of wastewater generated. Also, potential future development pursuant to the proposed General Plan 2040 and Downtown Precise Plan would be required to comply with—and the City would be required to implement—the proposed General Plan goals, policies, and programs listed in Impact Discussion UTIL-4.

With continued compliance with applicable regulations, wastewater generated by the proposed project would not exceed the capacity of the LGVSD and CMSA WWTPs or the permitted capacities specified in the RWQCB's NPDES permits. Also, the proposed General Plan goals, policies, and programs listed in Impact Discussion UTIL-4 would ensure that potential future development would minimize impacts to wastewater collection and treatment capacity. Therefore, the proposed project would not result in a determination by the wastewater treatment providers that they do not have adequate capacity to serve the EIR Study Area's projected demand in addition to their existing and future commitments, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As described in Impact Discussion UTIL-4, the estimated wastewater demand for the Downtown Precise Plan Area would be 0.25 mgd at full buildout. This is approximately 2.5 percent of the maximum

permitted dry weather flow rate of 10 mgd for the CMSA WWTP. Since the WWTP currently has a surplus wastewater capacity of 6.9 mgd, the wastewater demand for the Downtown Precise Plan Area would not exceed the permitted capacity of CMSA's WWTP. Furthermore, the proposed General Plan goals, policies, and programs listed in Impact Discussion UTIL-4 would ensure that new development would minimize impacts to wastewater collection and treatment capacity. Sewer connection fees and wastewater collection fees associated with new development would help fund sewer and wastewater improvement projects. Impacts related to the capacity of the CSMA WWTP would be *less than significant*.

Significance without Mitigation: Less than significant.

UTIL-6 Implementation of the proposed project could result in a cumulatively considerable impact to wastewater service.

This section analyzes potential impacts related to wastewater treatment that could occur from the proposed project in combination with reasonably foreseeable growth within the service areas of SRSD, CMSA, and LGVSD.

Buildout of the EIR Study Area would generate an increase in the volume of wastewater delivered for treatment at the CMSA and LGVSD WWTPs. However, the increase in 2040 represents approximately 39 percent of the excess available treatment capacity of the LGVSD WWTP and approximately 5.8 percent of the excess treatment capacity of the CMSA WWTP. In addition, the LVGVSD WWTP is currently undergoing an expansion project to increase its capacity. The total increased wastewater flow represents less than 7.5 percent of the LGVSD WWTP's permitted dry weather flow and approximately 4.0 percent of the CMSA WWTP's permitted dry weather flow. Based on the current excess wastewater treatment capacities of the WWTPs, the current expansion of the LGVSD WWTP, and the projected population growth and water/wastewater demand in the service area, cumulative projected wastewater treatment demand is below the excess capacity of both WWTPs. Because the cumulative demand would not substantially impact the existing or planned capacity of the WWTP systems, which have sufficient capacity for wastewater that would be generated by the proposed project, the construction of new WWTPs would not be necessary.

Also, future development within the service area would be required to comply with all applicable regulations and ordinances issued by LGVSD, SRSD, and CSMA. Wastewater from cumulative projects is assumed in the LGVSD and SRSD SSMPs. The sanitation districts and WWTPs plan for increased demand with future development. Therefore, with continued compliance with applicable regulations, cumulative development combined with the proposed project would not exceed wastewater collection or treatment capacities. Therefore, the proposed project would not result in a cumulatively considerable impact related to wastewater and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

4.17.3 STORMWATER

4.17.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

The regulatory framework for stormwater is described in detail in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR. The regulatory requirements that pertain solely to storm drain systems are repeated below.

Federal Regulations

Federal Clean Water Act

Under Section 401 of the CWA, every applicant for a Section 404 permit that may result in a discharge to a water body must first obtain a state water quality certification indicating the proposed activity will comply with State water quality standards. Certifications are issued in conjunction with US Army Corps of Engineers (USACE) Section 404 permits for dredge and fill discharges. In addition, a water quality certification must be sought for any activity that would result in the placement of structures in waters of the United States that are not jurisdictional to the USACE, such as isolated wetlands, to ensure that the proposed activity complies with State water quality standards. In California, the authority to grant water quality certification or waive the requirement is delegated by the SWRCB to its nine RWQCBs.

National Pollutant Discharge Elimination System

Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for stormwater discharges are also regulated under this program. As previously described, the EIR Study Area lies within the jurisdiction of the San Francisco Bay RWQCB (Region 2). The City is subject to the requirements of the General Permit for Storm Water Discharges for Phase II Small Municipal Separate Storm Sewer Systems (MS4s).

Under Provision E.12 of the NPDES Permit, the co-permittees use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. The goal is to be accomplished primarily through the implementation of low impact development techniques. In addition, projects that create and/or replace one acre or more of impervious surfaces must comply with the hydromodification requirements specified in the E.12 provisions of the Phase II Small MS4 permit. These requirements include implementing site design measures to achieve infiltration, evapotranspiration, and/or harvesting/reuse of the 85th percentile, 24-hour, storm runoff event to the extent feasible and treatment of the remaining runoff with bioretention facilities. The hydromodification provisions also require that post-project runoff does not exceed pre-project runoff for the two-year, 24-hour storm event. The guidance document for implementing Provision E.12 of the NPDES permit is the Bay Area Stormwater Management Agencies Association (BASMAA) Post Construction Manual.

State Regulations

State Water Quality Control Board's Trash Amendment

On April 7, 2015, the SWQCB adopted an amendment to the Water Quality Control Plan for Ocean Waters of California to control trash. In addition, the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California added the section: Part 1, Trash Provisions. Together, they are collectively referred to as "the Trash Amendments." The purpose of the Trash Amendments is to provide statewide consistency for the RWQCBs in their regulatory approach to protect aquatic life and public health beneficial uses, reduce environmental issues associated with trash in State waters, and focus limited resources on high-trash-generating areas.[52]

The Trash Amendments apply to all Phase I and II permittees under the NPDES municipal separate storm sewer systems (MS4) permits. Compliance with the Trash Amendment requires municipalities to install certified trash treatment control systems on all catch basins no later than December 2, 2030.[53]

Regional Regulations

Marin County Flood Control and Water Conservation District

The mission of the Marin County Flood Control and Water Conservation District (MCFCWCD) is to reduce the risk of flooding for the protection of life and property within Marin County. It is responsible for the planning, design, construction, operation, and maintenance of facilities such as stormwater pump stations, detention basins, bypass drains, creeks, ditches, and levees.[54]

Eight zones have been established within the MCFCWCD to address specific flooding problems in watersheds in Marin County. Projects in each zone may include the construction, operation, and maintenance of levees, pumping stations, culverts, and drainage ways, and the cleaning and maintenance of creeks. All major actions within the zones require authorization by the board of supervisors of the MCFCWCD.[55] One of the eight zones is within the city limits of San Rafael. Zone 6, encompassing the residential area known as the San Rafael Meadows, was created in the 1960s to address frequent flooding in the low-lying area just west of US-101 across from the County Civic Center. It is overseen by a five-member advisory board. In the early 2000s, construction of a new subdivision rerouted stormwater around the community, eliminating a significant source of flooding in the zone. Work within Zone 6 includes an annual vegetation maintenance program along 0.75 mile of Gallinas Creek.

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[52] State Water Resources Control Board, April 7, 2015, *Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, https://www.waterboards.ca.gov/water_issues/programs/trash_control/docs/01_final_sed.pdf.

[53] State Water Resources Control Board, January 7, 2019, *Storm Water Program - Trash Implementation Program.* https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html.

[54] Marin County Flood Control & Water Conservation District, , *Flood Protection Introduction*. https://www.marinwatersheds.org/flood-protection, accessed on June 6, 2019.

[55] Marin County Flood Control & Water Conservation District, 2019, *Flood Control*. https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/flood-control.

Another zone is located outside of the city limits but within the EIR Study Area. Zone 7, Santa Venetia, was created in 1962 to address creek and tidal flooding within the low-lying unincorporated neighborhood of Santa Venetia. Santa Venetia was one of the first developments in Marin County to be constructed on fill over Bay mud. Due to the low initial elevation of the fill and compression of the underlying Bay mud, the area has subsided and is now below the high tide level. Work in Zone 7 includes regular servicing of 14 pumps at five pump stations, maintenance of five portable pumps, maintenance of 1.9 miles of flood protection levees, maintenance of tide gates and trash racks, and an annual vegetation maintenance program along 0.85 mile of Gallinas Creek.[56]

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to stormwater infrastructure and services are primarily in the Land Use, Infrastructure, and Air and Water Quality Elements. As part of the proposed project, some existing General Plan policies would be amended or substantially changed, and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.17.3.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives to ensure the safe, efficient management of stormwater in San Rafael. The SRMC is organized by title, chapter, and section. Most provisions related to stormwater are found in Title 9, Health and Sanitation, and Title 15, Subdivisions, as follows:

- Chapter 9.30, Urban Runoff Pollution Prevention. The purpose of this chapter is to ensure the future health, safety, and general welfare of the citizens of San Rafael and to protect and enhance watercourses and fish and wildlife habitat by:
  - Minimizing discharges other than stormwater runoff to storm drains or watercourses;
  - Responding to the discharge of spills, preventing and controlling the discharge of spills to storm drains or watercourses, and prohibiting dumping or disposal of materials other than stormwater;
  - Reducing pollutants in stormwater discharges to the maximum extent practicable;
  - Requiring operators of construction sites, new or redeveloped land, and industrial and commercial facilities to install, implement, or maintain appropriate best management practices;
  - Maintaining pre-development stormwater runoff rates and preventing nonpoint source pollution whenever possible, through stormwater management controls and ensuring that these management controls are properly maintained.
- Chapter 9.40, Regulatory Fee for Clean Stormwater Activities. This chapter ensures the future health, safety, and general welfare of the citizens of the city by establishing a funding source to provide

[56] Marin County Flood Control and Water Conservation District, 2020. About the Flood Control Zones. Accessed at https://www.marinwatersheds.org/flood-protection/flood-control-zones#undefined6 on June 23, 2020.

enforcement of the city's Urban Runoff Pollution Prevention Ordinance, to provide maintenance and repair of the city's stormwater drainage facilities, to provide capital improvements to the city's storm drainage system, and to provide other clean stormwater activities.

- Chapter 15.06, Subdivision Design Standards and Miscellaneous Requirements. Section 15.05.110, Grading and Drainage, mandates that all subdivisions be designed and improved to provide proper grading, drainage, and erosion and sediment control. All subdivisions must comply with the provisions of the Uniform Building Code for design of grading and the conveyance of drainage and stormwater runoff and must also comply with best management practices.

Existing Conditions

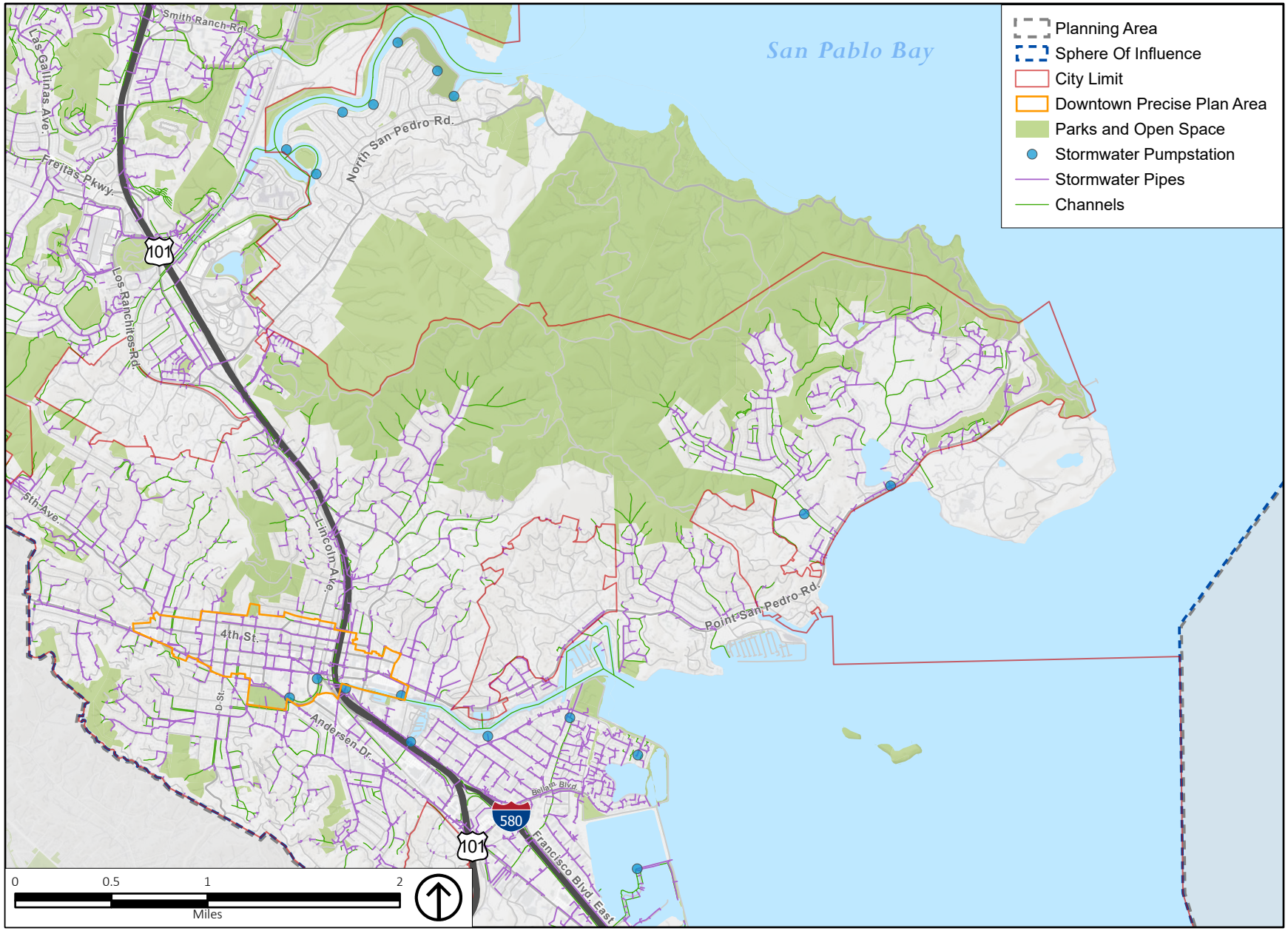
The City of San Rafael Department of Public Works (DPW) owns and maintains the storm drain system that is located throughout the city. The storm drain system comprises 20 miles of corrugated metal pipes, 84 miles of concrete pipe, and 12 miles of plastic pipe. It has 3,800 drain inlets, 20 major headwalls, and 745 smaller headwalls. DPW also maintains approximately 35 miles of open ditches and culverts and operates 12 stormwater pump stations.[57] Stormwater pipelines in San Rafael range from 4 to 48 inches in diameter. Stormwater pipes and pumping stations are shown on Figure 4.17-3.

The DPW is responsible for maintaining the storm drains in City easements, and property owners are responsible for storm drains on their properties. Similarly, DPW maintains certain waterways that have easements, and waterways without easements are maintained by private property owners. San Rafael Creek is maintained by the USACE because it is classified a navigable waterway.

The SWRCB, as the implementing agency for the Trash Amendments, mandates that the City must install certified trash treatment control systems on all catch basins no later than December 2, 2030. There currently are some trash devices installed at commercial properties, such as the Northgate Mall, but the City does not maintain these devices.

The MCFCWCD is responsible for the operation and maintenance of storm drains within the EIR Study Area that are outside of the city limits (e.g., the Lucas Valley-Marinwood neighborhood). The MCFCWCD is also responsible for the planning, design, construction, operation, and maintenance of all stormwater pump stations, detention basins, bypass drains, creeks, ditches, and levees in the county. Revenue is collected via taxes and fees paid by property owners in eight flood control zones in Marin County. Two of the flood control zones are in the EIR Study Area.

[57] City of San Rafael Department of Public Works, 2019. Correspondence between Kevin McCowan, Assistant Public Works Director/City Engineer, DPW, and Steve Bush, PE, Senior Engineer, PlaceWorks. Dated June 10, 2019.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.17-3
Stormwater Drainage System

Flood Control Zone 6 is entirely within the city limits and is MCFCWCD's smallest flood control zone, covering only 0.16 square mile. Zone 6 occupies a very small portion of the Gallinas Creek Watershed and was created in the 1960s to address frequent flooding in the low-lying neighborhood just west of US-101 across from the County Civic Center.[58] At that time, the neighborhood was unincorporated county land. However, the area was annexed by the City in 1975, at which point the MCFCWCD transferred easements to the City. The City now owns and maintains the drainage easements. In the early 2000s, construction of a new subdivision, Redwood Village, resulted in the diversion of stormwater around the Corrillo Drive neighborhood, which greatly improved the issues of flooding. In addition, the City DPW recently rehabilitated a set of storm drain pipes at the end of Corrillo Drive.[59] In the past, there have been issues with flooding of the tracks near the Marin Civic Center SMART station. The easement is not owned by the City or MCFCWCD, but Sonoma-Marin Area Rail Transit has agreed to keep the drainage ditches and culverts under US-101 clear of debris and maintain their capacity on an ongoing basis.

Flood Control Zone 7 is not within the city limits but is within the EIR Study Area. Zone 7, which encompasses the unincorporated neighborhood of Santa Venetia, was created in 1962 to address creek and tidal flooding within the low-lying area. Santa Venetia was one of the first developments in Marin County to be constructed on fill over bay mud and occurred in an era before the County had the authority to regulate or control development. Due to the low initial elevation of the fill and the compressible nature of the underlying bay mud, the area has subsided and is now below the high tide level. MCFCWCD currently operates and maintains five pumping stations within the affected area, maintains 1.9 miles of flood protection levees, maintains tide gates and trash racks, and conducts an annual vegetation maintenance program along 0.85 mile of creek.[60]

Capital Improvement Initiatives

Construction of new stormwater facilities and maintenance of existing facilities are managed through the City's CIP, which is updated on a bi-annual basis. The list of CIP projects and funding priorities change in response to the amount of funds available. Sources of funding include the City's General Fund, Stormwater Fund, State and regional grants, and private donations.[61] The Stormwater Fund receives approximately $840,000 in annual revenues from the City's Stormwater Activity fee. This covers expenses incurred in the maintenance of the City's storm drainage system and its stormwater pump stations and covers the cost of CIP projects to improve the City's drainage infrastructure, including storm drain pipes, drainage basins, levees, and pump stations. Future CIP projects include repair and replacement of damaged culverts, storm drain replacement/improvements at various locations, a flood warning system at Oleander Drive and Los Gamos Road, pump station reconstruction at San Quentin, and Spinnaker Point

[58] Marin County Flood Control & Water Conservation District, 2019, *Flood Control Zones*, http://www.marinwatersheds.org/flood-protection/flood-control-zones#undefined5, accessed on April 29, 2019.

[59] Marin County Flood Control & Water Conservation District, 2019. Flood Zone 6 Advisory Board Meeting. Dated March 5, 2019.

[60] Marin County Flood Control & Water Conservation District, 2019, *Flood Control Zones*, http://www.marinwatersheds.org/flood-protection/flood-control-zones#undefined5, accessed on June 2, 2020.

[61] City of San Rafael. April 28, 2017. General Plan 2020 – Infrastructure. https://www.cityofsanrafael.org/documents/gp-8-infrastructure-element/

salt marsh remediation. The City is also conducting studies to determine the feasibility of catch basin trash capture devices to comply with the State Trash Amendments and a levee analysis inventory.

The City's latest CIP (FY20/21-22/23) has specified funding to address current storm drain issues within the Downtown Precise Plan Area. This includes preparation of a design study to address flooding at the intersection of Second Street and C Street, which is caused by the settlement of storm drain pipes and the inability to adequately convey water to the downstream portion of the storm drain system. Pipe repairs as well as installation of a new underground drainage system on C Street from Second to First Street will be part of the project.[62] Another scheduled CIP project is located at the edge of the Downtown Precise Plan boundary at the intersection of First Street and D Street. The project has funding to replace the corrugated metal pipe storm drain on D Street between Frances Street and First Street and improve stormwater flow. Several storm drain pipes at the intersection of D Street and First Street feed into San Rafael Creek. The City's Third Street Rehabilitation Project will also make storm drain improvements along Third Street, where necessary. Within the Downtown Gateway sub-area of the Downtown Precise Plan, an urban flood control wetland project is suggested for consideration south of Second Street and east of Lincoln Avenue near US-101. The proposed urban flood control wetland project would help alleviate local flooding during the rainy season and combat sea-level rise in the future. The proposed urban flood control wetland project would require parcel acquisition along San Rafael Creek and is considered a high-priority project within the Downtown Precise Plan Area. The proposed urban flood control wetland project would widen the confluence of Irwin Creek and San Rafael Creek and create a natural downtown amenity.

4.17.3.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant stormwater related impacts if it would:

1. Require or result in the relocation or construction of new or expanded storm water drainage facilities, the construction or relocation of which could cause significant environmental effects.
2. Result in significant cumulative impacts related to stormwater facilities.

4.17.3.3 IMPACT DISCUSSION

UTIL-7	**Implementation of the proposed project could require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.**

General Plan 2040

Potential future development as part of the proposed General Plan 2040 and the change in land uses could result in an increase in impervious surfaces, which in turn could result in an increase in stormwater

[62] City of San Rafael, 2020. Capital Improvement Program, FY 20/21-22-23.

runoff, higher peak discharges to drainage channels, and the potential to cause nuisance flooding in areas without adequate drainage facilities. Potential future development sites are in infill areas or already developed areas that are paved, and new development on these sites should not create a substantial increase in impervious surfaces.

In addition, potential future development that involves the disturbance of one acre or more of land would be subject to NPDES construction permit requirements, including preparation of a Storm Water Pollution Prevention Plan, which includes best management practices to limit the discharge of sediment and non-stormwater discharges from the site. Potential future development that involve the creation and/or replacement of 2,500 square feet or more of impervious surfaces would trigger the implementation of source control measures and site design measures to address stormwater runoff, per the BASMAA Post-Construction Manual and the Phase II Small MS4 Permit requirements. In addition, stormwater treatment measures are required to contain site runoff for regulated projects that create or replace 5,000 square feet or more of impervious surface, using specific numeric sizing criteria based on volume and flow rate. Regulated projects would also be required to prepare a stormwater control plan that demonstrates that the regulatory requirements for temporary on-site stormwater runoff retention have been met. This would minimize the amount of stormwater runoff from potential future development in the EIR Study Area.

With the implementation of these provisions for potential future development, there would not be a significant increase in stormwater runoff to the City's storm drain system. The construction of stormwater facilities, implementation of best management practices, and preparation of related plans would serve to minimize any potential impacts.

The City's Public Works Department stated that there currently are no constraints in the storm drain system that would impact the proposed development in the EIR Study Area.[63] In addition, revenue from the City's Stormwater Activity fee (SRMC Chapter 9.40, Regulatory Fee for Clean Stormwater Activities) is used to fund storm drain improvements throughout the city, as described in the City's latest CIP. In addition to the storm drain improvements within the Downtown Precise Plan Area that are described in the Capital Improvement Initiatives section, there are current projects in the CIP to (1) replace the damaged CMP culvert located beneath Rotary Manor (on Fifth Avenue just west of Downtown); (2) reconstruct the San Quentin Pump Station; (3) replace the storm drain pipes on Francisco Boulevard East from the Bay Park Center office complex to Grange Way; (4) install a warning system to inform motorists of possible flooding at the intersection of Los Gamos Road and Oleander Drive; and (5) install an underground storm drain system on Woodland Avenue between Eva Street and Picnic Avenue that connects to the open ditch behind Woodland Avenue. The City is also conducting a study to design a storm drain system on Jessup Street between West Street and East Street that would connect to the City's existing system at Second Street and East Street.

In addition, the proposed Community Design and Preservation (CDP), Conservation and Climate Change (C), Safety (S), and Community Services and Infrastructure (CSI) Elements contains goals, policies, and

[63] City of San Rafael Public Work Department. May 8, 2019. Interview with Kevin McGowan, Assistant Public Works Director/City Engineer.

programs that require local planning and development decisions to consider impacts related to stormwater and stormwater facilities. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts related to stormwater:

Goal CDP-4: Quality Construction and Design. Encourage quality construction and design that enhances San Rafael's character and creates places of lasting value.

- Policy CDP-4.10: Landscape Design. Encourages privately owned and maintained landscaping that contributes to neighborhood quality, complements building forms and materials, improves stormwater management and drainage, and enhances the streetscape.
  - Program CDP-4.10A: Zoning Regulations. Periodically evaluate the landscape provisions in the Zoning Ordinance to respond to climate change, hazards, water availability, shading needs, and other issues. Zoning should support the City's goal of having a strongly landscaped character.
  - Program CDP-4.10B: Industrial Landscape Design. Ensure that landscape guidelines for new industrial and general commercial development provide effective buffering, while also supporting water conservation, water quality, and fire hazard reduction goals.
  - Program CDP-4.10C: Parking Lot Landscaping Requirements. Review City standards for parking lot landscaping to ensure that they adequately address visual screening, environmental quality, and climate-related issues. Standards should allow for solar shade structures within parking areas.

Goal C-3: Clean Water. Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources.

- Policy C-3.3: Low Impact Development. Encourages construction and design methods that retain stormwater on-site and reduce runoff to storm drains and creeks.
  - Program C-3.3A: Development Review. Provide guidance to developers, contractors and builders on the use of rain gardens, bioswales, bio-retention facilities, permeable pavers, grass parking lots, and other measures to absorb stormwater and reduce runoff rates and volumes.
  - Program C-3.3B: Non-Traditional Gardens. Evaluate best practices in the use of roof gardens, vertical gardens/ green walls, pollinator gardens and other measures that increase the City's capacity to sequester carbon, plant trees, and enhance environmental quality. Encourage the incorporation of such features in new development.

Goal S-3: Resilience to Flooding and Sea Level Rise. Recognize, plan for, and successfully adapt to the anticipated effects of increased flooding and sea level rise.

- Policy S-3.8: Storm Drainage Improvements. Require new development to mitigate potential increases in runoff through a combination of measures, including improvement of local storm drainage facilities. Other measures, such as the use of porous pavement, bioswales, and "green infrastructure" should be encouraged.
  - Program S-3.8A: Storm Drainage Improvements. Consistent with Countywide and regional stormwater management programs, require new development with the potential to impact storm drainage facilities to complete hydrologic studies that evaluate storm drainage capacity, identify improvements needed to handle a 100-year storm, and determine the funding needed to complete those improvements.

- Program S-3.8B: Green Infrastructure Guidelines. Evaluate potential measures to more sustainably manage stormwater, erosion, and improve water quality associated with urban runoff.

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.1, Capital Investment, requires the City to provide for ongoing, preventative maintenance of infrastructure and timely replacement, repair, and upgrading of City equipment.
  - Program CSI-4.1A: Capital Improvement Programming. Maintain and regularly update a multi-year Capital Improvement Plan (CIP) covering City owned and operated infrastructure and public facilities. Seek the input of other local service providers (MMWD, LGVSD, etc.) when preparing the City's CIP and encourage these agencies to seek City input as they prepare their own CIPs.
  - Program CSI-4.1B: Funding for Maintenance and Capital Costs. Consider ways to improve the reliability of maintenance funding, such as establishing a reserve fund or voter-approved parcel taxes and special assessments. Identify potential funding sources for unmet and anticipated future capital project needs, such as grants, bond measures, and impact fees.
  - Program CSI-4.1C: Community-Supported Services. Consider community-supported (e.g., cooperative) services as an alternative to bring fundamental service upgrades to neighborhoods and managing capital costs.
- Policy CSI-4.2: Adequacy of City Infrastructure and Services, requires applicants to demonstrate that their projects can be adequately served by the City's infrastructure as part of the development review process. All new infrastructure shall be planned and designed to meet the engineering standards of the City and various local service and utility providers.
  - Program CSI-4.2A: Long-Term Planning. Continue to use the CIP to analyze and respond to local capital facility needs.
  - Program CSI-4.2B: Engineering Standards. Require new development to comply with the subdivision standards in the San Rafael Municipal Code, as well as relevant Marin County and utility district engineering standards. Where feasible, encourage development to reach beyond current standards and collaborate with the community to innovate and define new best practices.
  - Program CSI-4.2C: Impact Fees. Continue to collect impact fees and use other funding mechanisms to ensure that new development pays its fair share of providing/ upgrading services associated with that development.
- Policy CSI-4.10, Storm Drainage Facilities: Requires the continued monitoring and improving of the storm drainage system, including programs to reduce flooding, improve water quality, remove trash, and respond to climate-related changes. Evaluate the potential for restoration of the natural hydrologic function of creeks and drainageways where possible.
  - Program CSI-4.10A: Replacement of Aging Facilities. Pursue the replacement of older or failing drainage facilities such as metal pipes and stormwater pumping stations with more durable and resilient materials, or with new structures and pumps.
  - Program CSI-4.10B: Silt Removal. Continue to remove accumulated silt from City maintained drainageways, ponds, and creeks subject to tidal siltation such as Mahon and Irwin Creeks. Sediment from stream flow and deposition should be considered a potential resource.
  - Program CSI-4.10C: Sustainable Stormwater Management. Seek funding for projects that restore the natural characteristics and functions of stormwater systems, such as bioswales and conversion

of concrete ditches to natural creeks. Such projects should mitigate the effects of urban runoff, reduce flood hazards, and improve water quality and habitat value.

Compliance with and implementation of these proposed General Plan goals, policies, and programs that ensure adequate infrastructure and the regulatory provisions in the Phase II Small MS4 permit that limit runoff from new development would ensure that the implementation of the proposed General Plan 2040 would not result in significant increases in runoff that contribute to the construction of new storm drain facilities or expansion of existing facilities, the construction of which would cause significant environmental impacts. In addition, the City will continue to repair, rehabilitate, and upgrade the storm drain system through implementation of the CIP program funded through the General Fund and Storm Water Fund, and potential future development would also be required to pay public facilities fees per Chapter 9.40 of the SRMC. Therefore, impacts with respect to stormwater infrastructure would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The storm drain system in the Downtown Precise Plan Area is operated and maintained by the City's Public Works Department. The network of storm drains within the Downtown Precise Plan Area is shown on Figure 4.17-3. As stated above, potential future development within the Downtown Precise Plan Area as well as the rest of the EIR Study Area would be required to implement site design, source control, and treatment control measures that would limit the amount of stormwater runoff that can be discharged from the site, per the E.12 provisions of the Phase II Small MS4 permit. Potential future development that create or replace 5,000 square feet of impervious surface or more are required to route runoff to bioretention or other facilities that are sized in accordance with the BASMAA Post Construction Manual. In addition, new projects that create or replace one acre or more of impervious surfaces will be required to match post-construction runoff rates to pre-development rates for the two-year, 24-hour storm event. This would minimize the amount of stormwater runoff that enters the City's storm drain system.

The City's Public Works Department has stated that there are no current deficiencies in the City's storm drain system that would hinder planned development as part of the proposed Downtown Precise Plan. Also, new development and redevelopment projects would create revenue for the Stormwater Fund that is used for storm drain improvement projects. Several storm drain improvement projects planned for the Downtown Precise Plan Area are discussed in the Capital Improvement Initiatives section. The City will continue to repair, rehabilitate, and upgrade the storm drain system through its CIP. Although there are plans for future replacement of storm drains in the Downtown Precise Plan Area, the construction of new storm drain facilities or the expansion of existing facilities is not required as part of the proposed project, and the impact to storm drain infrastructure would be *less than significant*.

Significance without Mitigation: Less than significant.

UTIL-8 Implementation of the proposed project could result in a cumulatively considerable impact to stormwater infrastructure.

The analysis of cumulative storm drainage impacts considers future development within the three major watersheds that encompass the EIR Study Area. Cumulative impacts can occur when impacts that are significant or less than significant from a proposed project combine with similar impacts from other past, present, or reasonably foreseeable future projects within a similar geographic area. Cumulative impacts could result from incremental changes that contribute to drainage and stormwater infrastructure problems within the watersheds or the city.

Development within the EIR Study Area would require conformance with State and local policies that would reduce hydrology and infrastructure construction impacts to less than significant levels. Any new development in the city would be subject to City policies and ordinances, design guidelines, zoning codes, and other applicable City requirements that reduce impacts related to hydrology and stormwater drainage facilities. More specifically, potential changes related to stormwater flows, drainage, impervious surfaces, and flooding would be minimized by the implementation of stormwater control measures, retention, infiltration, and low-impact-development measures and review by the City's Public Works Department to integrate measures to reduce potential stormwater drainage and flooding impacts.

All cumulative projects in towns and cities within the watershed areas would be subject to similar permit requirements and would be required to comply with various municipal codes and policies and County ordinances, as well as numerous water quality regulations that control construction-related and operational discharge of pollutants in stormwater. The water quality regulations implemented by the San Francisco Bay RWQCB take a basinwide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the Phase II Small MS4 Permit applies to all of the surrounding municipalities to manage stormwater systems and be collectively protective of water quality. For these reasons, impacts from future development within the EIR Study Area related to stormwater infrastructure construction are not cumulatively considerable.

In addition, the implementation of goals, policies, and programs of the proposed General Plan 2040 would require coordination with MCFCWCD to minimize potential impacts to hydrology and stormwater infrastructure from other projects within the watersheds. Therefore, the proposed project would not result in a cumulatively considerable impact to hydrology and stormwater infrastructure and cumulative impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

4.17.4 SOLID WASTE

4.17.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

Federal Regulations

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

State Regulations

Sanitary District Act of 1923

The Sanitary District Act of 1923 (Health and Safety Code Section 6400 et seq.) authorizes the formation of sanitation districts and enforces the sanitation districts to construct, operate, and maintain facilities for the collection, treatment, and disposal of wastewater. This act was amended in 1949 to allow sanitation districts to also provide solid waste management and disposal services, including refuse transfer and resource recovery.

California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties throughout California to divert 50 percent of all solid waste from landfills as of January 1, 2000, through source reduction, recycling, and composting. To help achieve this, the act requires that each city and county prepare a source reduction and recycling element to be submitted to the Department of Resources Recycling and Recovery (CalRecycle). AB 939 also established a goal for all California counties to provide at least 15 years of ongoing landfill capacity.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two factors: a jurisdiction's reported total disposal of solid waste divided by the jurisdiction's population. The California Integrated Waste Management Board was replaced by CalRecycle in 2010. CalRecycle sets a per capita disposal rate target for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate.

Organic Waste Methane Emissions Reduction Act (Senate Bill 1383)

In September 2016, SB 1383 was signed into law establishing methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants in various sectors of California's

economy. SB 1383 establishes goals to reduce the landfill disposal of organics by achieving a 50 percent reduction in the 2014 level of statewide disposal of organic waste by 2020 and a 75 percent reduction by 2025. SB 1383 grants CalRecycle the regulatory authority to achieve the organic waste disposal reduction targets and establishes an additional target that at least 20 percent of currently disposed edible food must be recovered for human consumption by 2025. Methane emissions resulting from the decomposition of organic waste in landfills are a significant source of greenhouse gas emissions contributing to global climate change. Organic materials—including waste that can be readily recycled or composted—account for a significant portion of California's overall waste stream.

Mandatory Commercial Recycling Requirements (Assembly Bill 341)

Assembly Bill (AB) 341 (Chapter 476) set a statewide solid waste diversion goal of 75 percent by 2020. AB 341, which was passed in 2011 and took effect July 1, 2012, mandates recycling for businesses producing four or more cubic yards of solid waste per week or multi-family residential dwellings of five or more units. Under AB 341, businesses and multi-family dwellings of five or more units in the EIR Study Area must separate recyclables from trash and either subscribe to recycling services, self-haul their recyclables, or contract with a permitted private recycler.

Mandatory Commercial Organics Recycling (Assembly Bill 1826)

AB 1826, which was enacted in 2014, mandates organic waste recycling for businesses and multifamily dwellings with five or more units. The commercial organics recycling law took effect on April 1, 2016, and organic waste includes food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. Currently, businesses and multi-family residences of five or more units that generate four or more cubic yards per week of solid waste (including recycling and organic waste) must arrange for organic waste recycling services. In the fall of 2020, CalRecycle will review the annual reports from various jurisdictions, and if the statewide goal of 50 percent reduction in organic waste as compared to 2014 has not been met, the organic recycling requirements will cover businesses and multi-family residences that generate two or more cubic yards of solid waste per week. Marin Sanitary Service offers two organics recycling programs that allow businesses to comply with the requirements of AB 1826:

- Food 2 Energy (F2E): The F2E program diverts organic food waste from local restaurants, delis, food vendors, and grocery stores and converts the material into biogas through anaerobic digestion that is used as a power source for the CSMA WWTP.
- Commercial Compost: This program provides commercial compostable carts for businesses that generate organic material, including food scraps, food-soiled paper, and plant/landscape trimmings, that are turned into organic compost at Redwood Landfill.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act requires development projects to set aside areas for collecting and loading recyclable materials. This act required CalRecycle to develop a model ordinance for adoption by any local agency to provide adequate areas for the collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or

an ordinance of their own that establishes standards, including space allocation, for the collection and loading of recyclable materials.

CALGreen Building Code

As previously described in Section 4.17.1.1 (Water Regulatory Setting) CALGreen establishes building standards for sustainable site development. Sections 4.408 and 5.408, Construction Waste Reduction Disposal and Recycling, mandate that, in the absence of a more stringent local ordinance, a minimum of 65 percent of nonhazardous construction and demolition debris generated during most new construction must be recycled or salvaged. CALGreen requires developers to prepare and submit a waste management plan for on-site sorting of construction debris, which is submitted to the City for approval, or use a waste management company with verifiable documentation. The waste management plan must:

- Identify the materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale.
- Specify if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identify the diversion facility where the material collected can be taken.
- Identify construction methods employed to reduce the amount of waste generated.
- Specify that the amount of materials diverted shall be calculated by weight or volume, but not by both.

Local Regulations

Zero Waste Marin

Zero Waste Marin is the formal name for the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA), which was formed in 1997 and consists of city and town managers from Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, Tiburon, and Marin County. The goal of Zero Waste Marin is to help residents and businesses in Marin County meet the County's goal of 94 percent diversion from landfills by 2025 by reducing and recycling their solid waste and safely disposing of hazardous wastes. Zero Waste Marin ensures the County's compliance with State recycling mandates and provides information on household hazardous waste collection, recycling, composting, and waste disposal. The Marin County Department of Public Works/Waste Management administers Zero Waste Marin, and the AB 939 Local Task Force provides citizen and industry review.[64]

Climate Change Action Plan 2030

The San Rafael Climate Change Action Plan 2030 was issued in April 2019 and includes a variety of strategies to reduce greenhouse gas emissions from both existing and future development in San Rafael.[65] The CCAP focuses on mitigation efforts such as renewable energy, low-carbon transportation, composting, and water conservation. About half of the organic material that is landfilled is recoverable. The City

[64] Zero Waste Marin, 2020. About Zero Waste Marin, accessed at https://zerowastemarin.org/who-we-are/about-zero-waste-marin/ on June 24, 2020.

[65] City of San Rafael, 2019. *Climate Change Action Plan 2030*. Dated April 23, 2019.

encourages residents and businesses to divert, recycle, and compost organic waste. The CCAP has the following goals for community and municipal waste.

- WR-C1: Commercial Organic Waste. Work with Zero Waste Marin, Marin Sanitary Service, and nonprofits such as Extra Food to divert commercial organic waste from the landfill through recycling, composting, and participation in waste-to-energy and food recovery programs.
  - Conduct outreach and education to businesses subject to State organic waste recycling mandates (AB 1826) and encourage or enforce compliance with the law.
  - Refer new and major remodel commercial and multifamily residential project proposals to the City's waste hauler for review and comment and require projects to provide adequate waste and recycling facilities and access as feasible.
  - Encourage and facilitate commercial and multifamily property owners to require responsible use of on-site recycling facilities in lease and rental agreements and to train and regularly evaluate janitorial, landscape, and other property management services.
- WR-C2: Residential Organic Waste. Work with Zero Waste Marin, Marin Sanitary Service, and other organizations to educate and motivate residents to utilize curbside collection services and home composting for food waste.
- WR-C3: Construction and Demolition Debris and Self-Haul Waste. Require all loads of construction and demolition debris and self-haul waste to be processed for recovery of materials as feasible. Investigate creation or an ordinance requiring deconstruction of buildings proposed for demolition or remodeling when materials of significant historical, cultural, aesthetic, functional, or reuse value can be salvaged.
- WR-C4: Mandatory Waste Diversion. Adopt an ordinance requiring mandatory subscription to and participation in waste diversion activities, including recycling and organics collection provided by Marin Sanitary Service. Consider including phase implementation of the ordinance, penalties, and practical enforcement mechanisms.
- WR-C5: Waste Processing Infrastructure. Review and revise the City's franchise agreement with Marin Sanitary Service to ensure waste reduction and diversion targets are met. Conduct a feasibility study and consider investing in new solid waste processing infrastructure to remove recoverable materials (recycling and organics) from the waste stream and reduce contamination. Require regular residential and commercial waste audits and waste characterization studies to identify opportunities for increased diversion and to track progress in meeting targets.
- WR-C6: Extended Producer Responsibility. Encourage the State to regulate the production and packaging of consumer goods and take-back programs. Encourage on-demand delivery services like Amazon and Blue Apron to reduce packaging waste and investigate requirements and incentives for same through ordinance or engagement campaigns.
- WR-C7: Inorganic Waste. Promote reuse, repair, and recycling of inorganic materials, and encourage reduced use of packaging and single use items through engagement campaigns. Investigate supporting a local building material reuse center.
- WR-M1: Waste from Public Facilities. Increase opportunities for recycling, reuse, and composting at City facilities.

- WR-M2: Waste from City Operations. Embark on an educational and social marketing-based campaign to increase recycling, composting, reuse, and waste reduction within municipal operations. Conduct periodic waste audits of City facilities to understand where opportunities for increased diversion lie and to track progress.

Marin Countywide Integrated Waste Management Plan

The California Integrated Waste Management Act of 1989 (AB 935) requires each county to prepare and adopt a Countywide Integrated Waste Management Plan (CIWMP). The CIWMP is a State-mandated plan prepared by Zero Waste Marin. The plan identifies solid waste facilities within Marin County and describes the countywide plan for reaching the State-mandated 50 percent recycling goal. Waste reduction and disposal facilities in the county that require solid waste facility permits must conform to policies and siting criteria in the CIWMP. The CIWMP includes, by reference, source reduction and recycling elements, household hazardous waste elements, and nondisposal facility elements as well as a plan that describes countywide diversion programs and landfill disposal needs. The elements must be reviewed every five years and revised if necessary. The latest five-year review report for the CIWMP was submitted by Zero Waste Marin in March 2018.

In addition, each city, county, or regional agency must prepare an annual report for submittal to CalRecycle that summarizes its progress in reducing solid waste as required by Public Resources Code Section 41821. Once every two or four years (depending on the compliance schedule), CalRecycle conducts its own jurisdictional review of the annual reports to determine if the jurisdiction has met the Integrated Waste Management Act goals.

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs that are relevant to solid waste facilities are primarily in the Sustainability and Conservation Elements. As part of the proposed project, some existing General Plan policies would be amended or substantially changed, and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact later in this chapter under Section 4.17.4.3, Impact Discussion.

San Rafael Municipal Code

The SRMC includes various directives to manage solid waste in San Rafael. The SRMC is organized by title, chapter, and section. Most such directives are found in Title 9, Health and Sanitation, and Title 12, Building Regulations, as follows:

- Chapter 9.19, Refuse and Recycled Materials Collections and Disposal. The purpose of this chapter is to prevent actual or potential public health hazards and/or public nuisance within the city of San Rafael by regulating the accumulation, collection and disposal of solid waste, including but not limited to garbage, rubbish, waste matter, yard waste, recyclable materials and refuse.

- Chapter 12.235, California Green Building Construction Standards Code Amendments. Section 12.235.020, Amendments, describes the deletions and amendments to the adopted 2019 CALGreen Building Code Standards as described in Section 12.100.010, Adopted Code.

Existing Conditions

The Marin Hazardous and Solid Waste Management JPA, now known as Zero Waste Marin, consists of member agencies that collectively implement programs to comply with AB 939 requirements and divert from landfills 50 percent of all the solid waste that is generated. Zero Waste Marin, which includes 11 cities and towns as well as unincorporated areas in the county, has the goal of 94 percent waste diversion from landfills by 2025. As the regional agency, the JPA reports diversion progress to CalRecycle on a countywide basis.[66] The JPA's disposal rate in 2018 was 5.2 pounds of waste per day (ppd) per resident and 11.8 ppd per employee, which is well below the CalRecycle targets of 7.6 ppd per resident and 17.3 ppd per employee.[67]

Marin Sanitary Service provides residential, multi-family, and commercial garbage, recycling, and compostable collection services in the city and the unincorporated areas that are in the EIR Study Area. Marin Sanitary Service also provides the Food 2 Energy program for large generators of food waste, such as restaurants and grocery stores. The program collects organic food waste, diverts it from the landfill, and delivers it to the CSMA WWTP where it is converted into biogas to power the WWTP.

The Marin Recycling Center (MRC), located at 565 Jacoby Street in San Rafael, is the processing facility for all residential and commercial curbside recyclable materials. These materials are collected by Marin Sanitary Service in dual-sort carts at the curbside throughout the city. In addition to processing all curbside recyclables, the Buy Back center inside the MRC pays for certain recyclable items. MRC accepts and processes collected recyclables, including glass bottles and jars, aluminum and tin cans, and plastic bottles that have California Redemption Value. In addition, the MRC provides safe, secure document shredding services for all of Marin County. A mobile shredding van is also available on an on-call basis, or an account can be established for regular pick-up service.

The Marin Resource Recovery Center (MRRC), also located at 565 Jacoby Street in San Rafael, accepts and processes nonhazardous materials that are not picked up curbside. Waste accepted at the MRRC includes mixed construction and demolition debris; building construction and remodeling materials; landscaping materials; and bulky items, such as mattresses, box springs, bed frames, furniture, and noncommercial car and truck tires. Waste at the MRRC goes through a customized system of screens, conveyors, blowers, magnets, and hand-sorting. Each month, the MRRC processes nearly 3,000 tons of recyclables. The recycling rate for the second quarter of 2020 was 55.6 percent.[68]

[66] R3 Consulting Group, Inc., March 2011, *Marin County Hazardous and Solid Waste Management JPA Zero Waste Tool Kit*. https://zerowastemarin.org/assets/Toolkits/FinalDraftZeroWasteFeasibilityStudy012710.pdf

[67] CalRecycle, 2020*, Jurisdiction Review Reports*. https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/ReviewReports/PerCapitaDisposalTrends.

[68] Marin Recycling Center, 2020. Marin Resource Recovery Center, Q2 2020 Recycling Certification. Accessed at https://marinresourcerecoverycenter.com/mobius_cms/mrrcwp-content/uploads/2020/07/Q2-20202-Recycling-Certification.pdf on July 24, 2020.

The Marin Household Hazardous Waste Facility, also located at 565 Jacoby Street in San Rafael, accepts hazardous materials from Marin County residents and businesses.[69] The Reuse It Marin program encourages the reuse of certain hazardous materials that otherwise would be disposed of. Some of the items offered for reuse include latex paint, aerosol cans, household cleaning products, and automotive products. Approximately 61 percent of the collected hazardous waste material is recycled, and only 2 percent is landfilled.[70]

There are currently two landfills that accept most of the solid waste from the county:

- Redwood Landfill. This landfill currently accepts approximately 54 percent of the solid waste generated by the county. The landfill is operated by Waste Management and is located on a 420-acre site at 8950 Redwood Highway north of Novato and east of US-101. Approximately 220 acres are dedicated to landfill operations, and the remaining 200 acres support composting, recycling, and reuse services as well as open space and a freshwater lagoon for migratory waterfowl. A plant was constructed in 2017 that converts landfill gas to clean, renewable electricity for use by Marin Clean Energy customers. Waste Management also operates the largest composting facility in Marin County and offers recycled compost and mulch as WM EarthCare products. The landfill is licensed as a Class III nonhazardous disposal facility. It has a maximum permitted throughput of 2,300 tons/day and a remaining capacity of 26 million tons. The estimated closure date is July 1, 2024.
- Potrero Hills Landfill. This landfill accepts approximately 41 percent of the waste generated by the county. The landfill is operated by Waste Connections Company and is located on a 526-acre site at 3675 Potrero Hills Lane, a few miles south of Suisun City in the hills of Suisun Marsh in Solano County. A compost facility and a landfill-gas-to-energy plant is also operated at this site. The landfill has a maximum permitted throughput of 4,330 tons/day and a remaining capacity of 13,872,000 tons. The closure date is estimated to be February 14, 2048.

Other landfills that accepted waste from the county in 2018 (latest year in CalRecycle records) were, in decreasing tonnage amounts:

- Keller Canyon: 14,029 tons
- Monterey Peninsula: 1,625 tons
- Recology Hay Road: 1,240 tons
- Altamont Landfill & Resource Recovery: 632 tons
- Corinda Los Trancos (Ox Mountain): 358 tons
- Vasco Road Sanitary: 77 tons
- Forward: 42 tons
- Azusa Land Reclamation County: 34 tons
- Guadalupe Sanitary: 21 tons
- Fink Road: 14 tons
- Sacramento County: 11 tons
- Foothill Sanitary: 8 tons
- Kirby Canyon Recycling and Disposal Facility: 8 tons
- Yolo County Central: 2 tons
- Newby Island Sanitary: 1 ton

[69] Marin Sanitary Service, About Marin Sanitary Service, https://marinsanitaryservice.com/support/about-us/, accessed on May 24, 2019.

[70] Marin Household Hazardous Waste Facility, 2020. About the Marin HHW Facility. Accessed at https://marinhhw.com/about-marin-hhw/ on July 24, 2020.

According to the latest available data (2018) from CalRecycle, 95 percent of solid waste collected from the county was taken to the Redwood and Potrero Hills landfills.[71] Table 4.17-6 describes these two facilities in addition to the other three landfills that received the majority of the solid waste in 2018. Comparing the maximum permitted daily throughput to the average disposal amounts in 2018, the five landfills in Table 4.17-6 collectively have an excess capacity of 5,888 tons/day. Although the Redwood Landfill is scheduled to close in 2024 and the Keller Canyon Landfill is scheduled to close in 2030, the other three landfills will be open to accept waste from 2048 to 2107. The latest five-year review of the Marin County Integrated Waste Management Plan prepared in March 2018 indicates that the county has adequate disposal capacity (i.e., equal to or greater than 15 years).

TABLE 4.17-6 LANDFILLS SERVING ZERO WASTE MARIN

Landfill	Redwood Landfill	Potrero Hills Landfill	Keller Canyon Landfill	Monterey Peninsula Landfill	Recology Hay Road Landfill
Total Waste received in 2018 (tons)	360,730	933,379	811,886	220,370	716,235
Waste received from Zero Waste Marin in 2018 (tons)	134,862	97,201	14,029	1,625	1,240
Percentage of total waste from Zero Waste Marin	37%	10%	1.7%	0.7%	0.2%
Maximum permitted throughput (tons/day)	2,300	4,330	3,500	3,500	2,400
Average 2018 daily disposal rate (tons/day)	1,202	3,111	2,706	734	2,387
Remaining capacity (tons)	26,000,000	13,872,000	63,408,410	48,560,000	30,433,000
Estimated closing date	7/1/2024	2/14/2048	12/31/2030	2/28/2107	1/1/2077

Sources: CalRecycle. 2019. Solid Waste Information System (SWIS) Facility/Site Search; CalRecycle. 2019. Landfill Tonnage Reports.

Zero Waste Marin has set a goal of 94 percent diversion from landfills by 2025, which would greatly reduce the need for landfill disposal. The current diversion rate for 2018 is 66 percent, which is down from 75 percent in 2014.[72] Zero Waste Marin also provides grants to its member agencies to develop and implement programs that work toward the zero waste goal. The City has received an ongoing grant to continue its efforts for FY 2020–2021.

4.17.4.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the CEQA Guidelines, implementation of the proposed project would result in significant impacts related to solid waste if it would:

1. Generate solid waste in excess of State and local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

[71] CalRecycle, 2019, Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility.

[72] Marin County Hazardous & Solid Waste Management JPA, 2020. Board of Directors Meeting, May 28,2020. Accessed at https://zerowastemarin.org/wp-content/uploads/2020/05/Agenda-Packet.pdf on July 25, 2020.

2. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.
3. Result in significant cumulative impacts related to solid waste.

4.17.4.3 IMPACT DISCUSSION

UTIL-9	**Implementation of the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.**

General Plan 2040

Zero Waste Marin does not differentiate the amount of solid waste generated by each city or town within its jurisdiction. Therefore, the total amount of solid waste sent to landfills in 2018 (the latest year of record) for the service area was determined. The proportion of waste generated by the EIR Study Area was determined by dividing the service population of the EIR Study Area (i.e., residents plus employees) by the service population of the county. The existing service population of the EIR Study Area is approximately 32 percent of the county's service population. A three-year average disposal rate (from 2016 to 2018) for Zero Waste Marin shows that it collects approximately 235,070 tons of waste per year for landfill disposal.[73] Assuming that 32 percent of the collected solid waste is generated by the EIR Study Area, this equals approximately 75,222 tons/year under current conditions.

The service population in the EIR Study Area is anticipated to increase by 11 percent by the year 2040, which would result in an increase of 8,274 tons/year. At year 2040, it is estimated that 83,496 tons/year or approximately 278 tons/day would be sent to landfills for disposal. This estimate is conservative because it assumes that there is no change in the current diversion rate of 66 percent. With implementation of the Zero Waste Marin program's Integrated Waste Management Program, the diversion and recycling rate should increase over time. The results for the EIR Study Area and the Downtown Precise Plan Area are summarized in Table 4.17-7.

As shown in Table 4.17-7, a total of 83,496 tons/year would equate to about 278 tons/day (assuming 300 disposal days/year). Assuming that half of the solid waste is sent to Redwood Landfill and half to Potrero Hills Landfill, this would be about 12.5 percent of the current excess capacity of 1,098 tons/day at Redwood Landfill and about 11 percent of the current excess capacity of 1,219 tons/day at Potrero Hills Landfill. Assuming that Redwood Landfill closes in 2024 and Keller Canyon Landfill closes in 2030, the other three landfills would have an excess capacity of 4,020 tons/day, which would easily accommodate the 278 tons/day from the proposed project. In addition, these calculations conservatively assume that there is no increased diversion rate for recycling. The goal for Zero Waste Marin is a diversion rate of 94 percent by 2025, which would reduce the solid waste disposal to landfills. Also, the latest annual report by

[73] CalRecycle, 2019, Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility.

Zero Waste Marin indicates that there is sufficient landfill capacity to meet the needs of the county for the next 15 years.

TABLE 4.17-7 SOLID WASTE LANDFILL DISPOSAL FOR THE EIR STUDY AREA

Area	Existing Service Population [a,b]	Existing Solid Waste Generation (tons/years)	Service Population at Buildout [a,b]	Percentage Increase	Solid Waste Generated at Buildout (tons/year)
Total EIR Study Area	119,951	75,222	132,976	11	83,496
Downtown Precise Plan Area	9,015	5,642	14,605	62	9,140

Notes:
[a] Refer to Tables 3-4 and 3-5 of this Draft EIR.
[b] Service population is the sum of population and employment.

Furthermore, potential future development pursuant to the proposed General Plan 2040 would comply with Section 4.408 of the 2019 CALGreen, which requires that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Development would also comply with AB 341, which mandates recycling for commercial and multifamily residential land uses as well as schools and school districts. Additionally, potential future businesses pursuant to the proposed General Plan 2040 that generate organic waste in amounts over a certain threshold would be mandated to recycle organic matter in accordance with AB 1826. Therefore, solid waste facilities would be able to accommodate project-generated solid waste.

In addition, the proposed Community Services and Infrastructure (CSI) Element contains goals, policies, and programs that require local planning and development decisions to consider impacts related solid waste and solid waste facilities. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts related to solid waste:

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.17, Reducing Landfilled Waste Disposal: Requires the reduction of landfilled waste disposal and related greenhouse gas emissions by reducing material consumption; requiring curbside collection and composting of organic materials; increasing recycling, re- use, and resource recovery; and encouraging the use of recyclable goods and materials.
  - Program CSI-4.17A: Waste Reduction. Implement waste reduction programs consistent with the San Rafael Climate Change Action Plan and Zero Waste Goal. These include partnerships with Zero Waste Marin, Marin Sanitary Service, and other organizations; requirements for construction and demolition debris recycling; increased monitoring of waste diversion targets; waste audits; and additional infrastructure for removal of recoverable materials from the waste stream.
  - Program CSI-4.17B: Recycling. Continue recycling programs and expand these programs to increase waste diversion rates for homes, apartments and workplaces. .
  - Program CSI-4.17C: Construction and Demolition Waste. Continue to implement programs requiring recycling of construction and demolition debris. Encourage the reuse of recycled building materials in future projects.
  - Program CSI-4.17D: Waste Reduction Programs. Continue efforts to reduce electronic waste, refrigerants, and single use plastics; and ensure proper disposal of household hazardous waste.

This should include enforcement of City bans on plastic bags and polystyrene foam and potential new programs to reduce microplastics from waterways.
    - Program CSI-4.17E: Community Composting. Consider a mandatory community-scale program for curbside collection and composting of food and green waste, as well as vegetation cleared through fire prevention efforts.
    - Program CSI-4.17F: Food to Energy. Support the Central Marin Sanitation/ Marin Sanitary Food to Energy Program.
    - Program CSI-4.17G: Recyclable Waste Receptacles. Support efforts by Marin Sanitary to install waste receptacles for recyclables in areas of heavy pedestrian traffic.
- Policy CSI-4.18, Waste Reduction Advocacy and Education: Work with other cities and the County of Marin to advocate for programs and legislation to reduce waste and share waste reduction responsibilities with the manufacturers of consumer products.
    - Program CSI-4.18A: Recycling Education. Encourage Marin Sanitary to continue its recycling education programs and to expand awareness of "reduce, reuse, and recycle" principles among all residents and employees. Programs to promote reuse and repair of consumer goods rather than landfill disposal should also be supported.

With continued compliance with the applicable regulations, leading to increased recycling and waste diversion and adherence to and implementation of the proposed General Plan 2040 goals, policies, and programs, anticipated rates of solid waste disposal from the potential future development pursuant to the proposed project would be *less than significant* with respect to permitted landfill capacity.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As shown in Table 4.17-7, the existing service population for the Downtown Precise Plan is 9,015 (see Table 3-5). This amounts to approximately 2.4 percent of the service population of the county. Since Marin County generated on average approximately 235,070 tons of waste per year in the past three years, it is assumed that the Downtown Precise Plan Area generated 5,642 tons/year. With a service population increase to 14,605 by 2040, this would equate to an increased solid waste disposal rate of 3,498 tons/year for a total of 9,140 tons/year. This is equivalent to about 30 tons/day (assuming 300 disposal days/year), which is a small percentage of the existing capacity of the five landfills that serve Marin County. In addition, Zero Waste Marin plans to increase recycling and waste diversion rates to 94 percent by 2025. Therefore, there would be sufficient landfill capacity to accommodate the proposed potential future development in the Downtown Precise Plan Area, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

UTIL-10 Implementation of the proposed project would comply with federal, State, and local statutes and regulations related to solid waste.

General Plan 2040

As discussed above, Zero Waste Marin, which serves the EIR Study Area, complies with State requirements to reduce the volume of solid waste through recycling and organic waste diversion. Its per capita disposal rates of 5.2 ppd per resident and 11.8 ppd per employee are well below the CalRecycle targets of 7.6 ppd per resident and 17.3 ppd per employee. In addition, all potential future development pursuant to the proposed General Plan 2040 would comply with CALGreen, which requires that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse (Section 4.408 of the 2019 CALGreen). Potential future development would also comply with AB 341, which mandates recycling for commercial and multifamily residential land uses as well as schools and school districts. Additionally, potential future businesses pursuant to the proposed General Plan 2040 that generate organic waste in amounts over a certain threshold would be mandated to recycle organic matter in accordance with AB 1826. Therefore, the City and waste service providers would comply with all applicable federal, State, and local solid waste regulations, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

Zero Waste Marin, which serves the Downtown Precise Plan Area, complies with State requirements to reduce the volume of solid waste through recycling and organic waste diversion. Similar to potential future development in the areas outside of the Downtown Precise Plan Area, all potential future development pursuant to the Downtown Precise Plan would comply with Section 4.408 of the 2019 CALGreen and with the requirements of AB 341. Therefore, the City and waste service providers would comply with all applicable federal, State, and local solid waste regulations, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

UTIL-11 Implementation of the proposed project could result in a cumulatively considerable impact to solid waste.

The discussion below addresses two aspects of cumulative impacts: (1) would the effects of the cumulative development result in a cumulatively significant impact on the resources in question and, if that cumulative impact is likely to be significant, (2) would the contributions to that impact from the project, which is the subject of this Draft EIR, be cumulatively considerable?[74]

[74] CEQA Guidelines Section 15064(h)(1), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current, and probable future projects.

The area considered for cumulative impacts to solid waste disposal facilities is Marin County. As reported in Chapter 4.14, Population and Housing, of this Draft EIR (see Table 4.14-1), the 2040 projected service population for Marin County is 417,630, which amounts to an increase of 46,336, or approximately 12.5 percent, over the county's existing service population of 371,294. Since the county generated 235,070 tons of solid waste in 2019, it is assumed that in 2040 it would generate approximately 264,454 tons, or 882 tons per day. The five landfills that receive the majority of that solid waste have an excess capacity of 5,888 tons/day and could easily provide for the projected growth. In addition, 15 other landfills received solid waste from Marin County in 2018. If one or more of the landfills that currently receive most of the solid waste from the county were unavailable in the future, it is likely that the solid waste volume could be increased at one or more of the other landfills. In addition, Zero Waste Marin has a goal to recycle or divert 94 percent of its waste by 2025, which would reduce the volume of solid waste transported to landfills. Therefore, with continued compliance with the applicable regulations, in combination with past, present, and reasonably foreseeable development, solid waste cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

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4.18 WILDFIRE

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to wildfire. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project.

4.18.1 ENVIRONMENTAL SETTING

4.18.1.1 REGULATORY FRAMEWORK

This section summarizes key State and local regulations set forth to identify wildfire hazard areas and to reduce wildfire risks to new and existing structures. There are no federal regulations related to wildfires that are applicable to the Environmental Impact Report (EIR) Study Area.

State Regulations

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The Office of the State Fire Marshal provides for fire prevention by enforcing fire-related laws in State-owned or-operated buildings; investigating arson fires in California; licensing those who inspect and service fire protection systems; approving fireworks for use in California; regulating the use of chemical flame retardants; evaluating building materials against fire safety standards; regulating hazardous liquid pipelines; and tracking incident statistics for local and State government emergency response agencies. The California Fire Plan is the State's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.

Fire Hazard Severity Zones and Responsibility Areas

CAL FIRE publishes maps recommending fire hazard severity zones for every California county. The maps identify lands in California as falling within one of the following management areas: local responsibility area (LRA), state responsibility area (SRA), and federal responsibility area (FRA). Within each of these areas, a single agency has direct responsibility: in LRAs, local fire departments or fire protection districts are responsible; in SRAs, CAL FIRE is responsible; in FRAs, federal agencies such as the United States Forest Service, National Park Service, Bureau of Land Management, United States Department of Defense,

United States Fish and Wildlife Service, and Department of the Interior are responsible.[1] Within the LRA, CAL FIRE designates lands as being within a Very High Fire Hazard Severity Zone (VHFHSZ) or non-VHFHSZ.

State Responsibility Areas Fire Safe Regulations

Section 4290, Hazardous Fire Areas, of the California Public Resources Code (PRC) includes fire safety regulations that apply to development in San Rafael to decrease the risk of wildfire events. Section 4290 establishes minimum standards for roads for fire equipment access; standards for signs identifying streets, roads, and buildings; private water supply resources for emergency fire use; fuel breaks and greenbelts; basic emergency access; and wildland fuel modification. Section 4290 works in conjunction with current and new building construction development standards in SRAs, defined by the State Board of Forestry and Fire Protection as an area in which the State has primary financial responsibility for preventing and suppressing fires. Section 4291, Mountainous, Forest-, Brush- and Grass-Covered Lands, of the PRC requires annual defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, including land with such characteristics in portions of the EIR Study Area. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations.

California Office of Emergency Services

The California Office of Emergency Services (Cal OES) was established on January 1, 2009, and created by Assembly Bill (AB) 38, which merged the duties, powers, purposes, and responsibilities of the former Cal OES with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall state agency response to major disasters in support of local government. It is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, man-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. In 2018, Cal OES completed a *State Hazard Mitigation Plan*, which designated fire hazard severity zones and wildland-urban interface (WUI) areas.[2]

Senate Bill 1241

SB 1241 requires that the fire hazard severity zone maps prepared by CAL FIRE be included in each general plan in the state. Each map sets the foundation for subsequent policies, usually in a general plan's safety element, to address fire prevention and protection in areas with a High or VHFHSZ. SB 1241 additionally requires that General Plan Safety Elements get reviewed by CAL FIRE prior to adoption to ensure policies provide adequate wildfire protection.

[1] Association of Bay Area Governments and Metropolitan Transportation Commission, 2018, *White Paper: Bay Area Wildland Urban Interface Review of Risks, Plans, and Strategies*, page 7; and Contra Costa County, 2018, Contra Costa County Hazard Mitigation Plan, page 13-1.

[2] California Office of Emergency Management. 2018. *California State Hazard Mitigation Plan*, https://www.caloes.ca.gov/HazardMitigationSite/Documents/002-2018%20SHMP_FINAL_ENTIRE%20PLAN.pdf, accessed on April 25, 2019.

California Building Code

Building Design Standards

The California Building Code (CBC), Part 2 of 24 California Code of Regulations, identifies building design standards, including those for fire safety. The CBC is updated on a three-year cycle. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan checked by local city and county building officials for compliance with the CBC and any applicable local edits. Typical fire safety requirements of the CBC include the installation of sprinklers in all high-rise buildings and other facilities; the establishment of fire-resistance standards for fire doors, building materials, and particular types of construction in high fire hazard severity zones; requirements for smoke-detection systems; exiting requirements; and the clearance of debris. The City of San Rafael regularly adopts each new CBC update under the San Rafael Municipal Code (SRMC) Chapter 12.100, Adopted Codes.

Materials and Methods for Exterior Wildfire Exposure

Chapter 7A of the CBC, Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a fire hazard severity zone. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures.

California Fire Code

The California Fire Code incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official fire code for the state and all political subdivisions. It is found in California Code of Regulations Title 24, Part 9 and, like the CBC, it is revised and published every three years by the California Building Standards Commission. Also like the CBC, the California Fire Code is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions. The City of San Rafael regularly adopts each new fire code update under SRMC Title 4, Fire. The California Fire Code is a model code that regulates minimum fire safety regulations for new and existing buildings; facilities; storage; processes, including emergency planning and preparedness; fire service features; fire protection systems; hazardous materials; fire flow requirements; and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Wildland-Urban Interface Areas

Chapter 49 of the California Fire Code, Requirements for WUI Fire Areas, prescribes construction materials and methods in fire hazard severity zones; requirements generally parallel CBC Chapter 7A.

WILDFIRE

Defensible Space

California PRC Sections 4291 et seq. require that brush, flammable vegetation, or combustible growth within 100 feet be removed around all buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials. Requirements regarding hazardous vegetation and fuel management are also contained in Sections 4906 and 4907 of the California Fire Code.

2018 Strategic Fire Plan for California

CAL FIRE produced the 2018 *Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments.[3] The 2018 *Strategic Fire Plan for California* focuses on fire prevention and suppression activities to protect lives, property, and ecosystems in addition to providing natural resource management to maintain state forests as a resilient carbon sink to meet California's climate change goals. This plan provides State Responsibility Fire Safe Regulations, which requires that all parcels 1 acre or larger provide a minimum 30-foot setback for buildings from all property lines and/or the center of the road. A key component of the 2018 *Strategic Fire Plan for California* is the collaboration between communities to ensure fire suppression and natural resource management is successful.[4]

California Public Utilities Commission

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission (CPUC) began considering and adopting regulations to protect the public from fire hazards due to overhead power lines and nearby aerial communication facilities. The CPUC published a Fire Threat Map under Rulemaking 15-05-006, following procedures in Decision 17-01-009, revised by Decision 17-06-024, which adopted a work plan for the development of a utility High Fire Threat District where enhanced fire safety regulations in Decision 17-12-024 apply.[5] The fire regulations require electric utilities to:[6]

- Prioritize the correction of safety hazards.
- Correct nonimmediate fire risks in "Tier 2" (elevated fire threat) areas on the CPUC High Fire-Threat District within 12 months, and in "Tier 3" (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines within the High Fire Threat District.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the High Fire Threat District.

[3] California State Board of Forestry and Fire Protection. 2019. *2019 Strategic Fire Plan for California*, https://www.fire.ca.gov/media/5504/strategicplan2019-final.pdf, accessed on April 25, 2019.

[4] California State Board of Forestry and Fire Protection. 2019. *2019 Strategic Fire Plan for California*, https://www.fire.ca.gov/media/5504/strategicplan2019-final.pdf, accessed on April 25, 2019

[5] California Public Utilities Commission, http://www.cpuc.ca.gov/firethreatmaps/, accessed on March 23, 2020.

[6] California Public Utilities Commission, press release: CPUC Adopts New Fire-Safety Regulations, http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF, accessed on March 23, 2020.

Regional Regulations

Marin Community Wildfire Protection Plan

The *Marin Community Wildfire Protection Plan*[7] (CWPP), adopted in July 2016, is intended to provide a foundation for and facilitate continued collaboration between the multiple agencies providing fire protection within Marin County. The CWPP has five goals: (1) continue to identify and evaluate wildland fire hazards; (2) articulate and promote the concept of land use planning related to fire risk; (3) support and continue to participate in the collaborative development and implementation of wildland fire protection plans; (4) increase awareness, knowledge, and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires; and (5) integrate fire and fuels management practices.

Marin County Operational Area Emergency Recovery Plan

The *Marin County Operational Area Emergency Recovery Plan* (ERP), adopted in November 2012, establishes procedures and assigns responsibility to ensure the effective management of emergency recovery operations within the Marin County Operational Area, which includes San Rafael. The ERP describes operational concepts relating to recovery, identifies components of recovery organization, and describes general responsibilities of the Marin County Office of Emergency Services (Marin OES). Recovery operations in a multi-jurisdictional incident are coordinated and managed by the Marin OES in accordance with the California Emergency Services Act.

Marin Operational Area Emergency Operations Plan

The *Marin OES Emergency Operations Plan*, adopted in October 2014, establishes emergency management policies and procedures, in addition to assigning responsibilities to ensure the effective management of emergency operations within the Marin Operational Area. Cities and towns within the county participate in the Marin OES coordination of emergency management activities. Emergency operations are split into four phases: (1) Preparedness Phase, (2) Response Phase, (3) Recovery Phase, and (4) Prevention/Mitigation Phase. The City of San Rafael coordinates with Marin OES to ensure emergency management functions meet the expectation of the City.

Local Wildfire Prevention and Mitigation Initiative / Marin Wildfire Prevention Authority

The San Rafael Fire Department (SRFD) has partnered with FireSafe Marin and all of the neighboring cities and towns to develop a countywide wildfire prevention strategy. In September 2019, the SRFD introduced a proposed plan to create a new joint powers authority agreement (countywide coalition) named the Marin Wildfire Prevention Authority (MWPA). The MWPA would be a multi-agency authority that would include the cities and towns of Marin County, the County of Marin, and fire protection districts in Marin County to fund, coordinate, and oversee wildland fire detection, fuel reduction, public education, defensible space evaluations, and local agency wildfire prevention efforts.

[7] Marin County Fire Department. 2016. *Community Wildfire Protection Plan*, https://drive.google.com/file/d/0Bx15pyv0JoJZZ0tVR1pXOV9vTGRQVTRrQWxER0VOeVQxd2xz/view, accessed on April 25, 2019.

The proposed new revenue measure for sustained support of wildfire prevention activities (Measure C) was approved by voters in March of 2020 and will accomplish key initiatives:

- Improving emergency alert and warning systems to enhance early alert for organized evacuations.
- Expanding coordinated efforts to reduce combustible plants and vegetation.
- Improving evacuation routes and infrastructure to enhance traffic flow and promote safe evacuations.
- Expanding and enhancing defensible space and home evaluations and educating homeowners about how to reduce the vulnerability of their home and neighborhood to wildfire.
- Providing grants and support to seniors, persons with disabilities, and low-income homeowners who need assistance maintaining defensible space, making homes fire resistant, reducing combustible vegetation, and preparing for emergencies.
- Creating and sustaining a coordinated local wildfire public safety and disaster preparedness program.
- Supporting residents to establish Firewise USA programs in neighborhoods through ongoing public education.

Marin County Multi-Jurisdictional Local Hazard Mitigation Plan.

The Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP) was completed in November 2018 to assess risks posed by natural hazards and to develop a mitigation strategy for reducing the County's risks. Several jurisdictions and special districts participated in the creation of the MCM LHMP, including the City of San Rafael. The risks and mitigations in the MCM LHMP are broad and encompassing of the entirety of Marin County. The MCM LHMP incorporates each local jurisdiction's individual LHMP as appendices to ensure jurisdiction-specific information supplements the vulnerability mitigation in the MCM LHMP. The City of San Rafael LHMP is incorporated into the MCM LHMP as Appendix P.

Marin County Code of Ordinances

The Marin County Code of Ordinances (MCCO) is organized by title, chapter, and section. It contains all ordinances for the County. Most provisions relating to fire protection services are included in Title 16, Fire, which establishes the jurisdiction of the Marin County Fire Department (MCFD). Services of the MCFD include response to all types of fires and other emergencies in County unincorporated areas, fire prevention, investigation, emergency medical services, and management of the WUI, including areas within the EIR Study Area. Title 16, Fire, of the MCCO includes the following two chapters related to adoption of and amendments to adopted codes:

- Chapter 16.16: Adoption of California Fire Code and International Fire Code, which adopts prescriptions regulating governing conditions hazardous to life and property from fire or explosion. This includes the 2019 Fire Code, which consists of portions of the 2018 International Fire Code as amended by the California Building Standards Commission.
- Chapter 16.17: Urban-Wildlife Interface Code, which adopts the 2003 edition of the International Urban-Wildland Interface Code. This code governs the mitigation of wildfire hazards to life and property from the intrusion of fire from wildland exposures.

MCCO Title 19, Marin County Building Code, adopts the 2019 CBC and the 2018 International Building Code to promote healthy, safe, and sustainable communities. Title 19 includes building regulations related to the fire resistance of buildings.

Local Regulations

San Rafael General Plan 2020

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to the wildfire are primarily in the Safety and Resilience Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended or substantially changed and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact under Section 4.18.3, Impact Discussion, later in this chapter.

San Rafael Municipal Code

The SRMC includes various directives to minimize adverse impacts associated with wildfires in San Rafael. The SRMC is organized by title, chapter, and section. Most provisions related to wildfire prevention are included in Title 4, Fire, Title 12, Building Regulations, and Title 14, Zoning:

- Chapter 4.08, Fire Code. This chapter adopts the California Fire Code in its entirety except for portions that are changed or modified by Section 4.08.120 of the chapter. Section 4.08.010 of this chapter recognizes that the adoption of the California Fire Code is to prescribe regulations and building standards in order to protect life and property from fire, explosion, earthquake, and other disasters and to provide for permits. Flammable and combustible liquids materials are regulated in Sections 4.08.060 through Section 4.08.100.
- Chapter 4.12, Wildland-Urban Interface, Vegetation Management Standards. Section 4.12.010 establishes a WUI zone in the city, described in the city of San Rafael WUI map, dated July 2, 2007. The WUI is an area where structures and other human development are within a short distance of wildland vegetation that is prone to wildfires. WUI areas are managed by specific combustible vegetation management standards required in order to create defensible space around structures that will minimize the spread of fires from wildlands to structures, from structures to wildlands, and from structures to structures. Chapter 4.12 requires homeowners living within designated WUI zones to maintain up to 100 feet of defensible space around structures or to their property line, whichever is closer. Section 4.12.030 includes the vegetation management standards. Section 4.12.032 describes the exceptions to the vegetation management standards for creeks, drainage ways, and wetlands. Section 4.12.035 describes the exceptions to vegetation management standards for protected plants and wildlife.
- Chapter 12.100, Adopted Codes. This chapter adopts the CBC in its entirety except for portions that are changed or modified by Section 12.12.020 of the chapter.
- Chapter 14.16, Site and Regulations. Section 14.16.170, Geotechnical Review, requires that geotechnical reports consistent with the geotechnical matrix in the General Plan appendices to assess such hazards as potential seismic hazards, liquefaction, landsliding, mudsliding, erosion, sedimentation, and settlement and hazardous soils conditions to determine the optimum location for structures, to advise of special structural requirements, and to evaluate the feasibility and desirability of a proposed facility in a specific location.

WILDFIRE

San Rafael Local Hazard Mitigation Plan

The *San Rafael Local Hazard Mitigation Plan* (LHMP), adopted in November 2017, is a guide to hazard mitigation within the EIR Study Area and serves as a tool to help decision makers direct hazard mitigation activities and resources. In the context of an LHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including wildfire. Table 4.18-1 contains the hazard mitigation actions in the LHMP that reduce the risk of damage or injury from wildfire.

TABLE 4.18-1 LOCAL HAZARD MITIGATION PLAN ACTIONS RELEVANT TO EMERGENCY RESPONSE AND WILDFIRE

Number	Actions
Emergency Response Mitigation Actions	
Action 1	Integrate LHMP into Safety Element of General Plan.
Action 2	Identify the locations, then subsequently equip, stock, and train staff in order to establish emergency evacuation shelters to temporarily house people during major emergencies.
Action 3	Plan, prepare, conduct community outreach, and deploy emergency evacuation exercises in neighborhoods prone to wildfire or tidal flooding during extreme wet weather periods.
Wildfire Mitigation Actions	
Action 42	Funding for vegetation management coordinator position.
Action 43	Create a San Rafael–specific community wildfire protection plan.
Action 44	Create new strategic fuel interruption zones in WUI areas and maintain and expand existing fuel interruption zones.
Action 45	Juniper and bamboo clearing program from residential properties in the WUI.
Action 46	Create new point-specific wildfire prevention programs targeting areas where homeless encampments are known to be.
Action 47	San Rafael Measure A project implementation.

Source: City of San Rafael Local Hazard Mitigation Plan, adopted June 2017.

San Rafael Wildfire Prevention and Protection Action Plan

The *San Rafael Wildfire Prevention and Protection Action Plan* (WPPAP)—conditionally approved in March 2019 and formally adopted in August 2020 following review by a steering committee—provides a series of prescriptions, programs, and ordinance updates to make the city more fire and disaster resistant. The WPPAP is designed to serve as a master plan and framework to address all phases of disaster response: mitigation, preparedness, response, and recovery. The WPPAP considers and incorporates local, county, regional, and national findings and best practices. The WPPAP defines fuel, vegetation management plan, wildfire, and the WUI in the city. Table 4.18-2 summarizes the objectives of the WPPAP that are comprehensive in nature and reflect the need for a cohesive approach to reducing wildfire risk in the EIR Study Area. Objectives are organized into three categories: (1) Vegetation Management; (2) Wildfire Prevention and Protection; and (3) Notifications and Evacuation.

TABLE 4.18-2 WILDFIRE PREVENTION AND PROTECTION ACTION PLAN OBJECTIVES

Number	Objectives
Section 1: Vegetation Management	
Objective 1	Eliminate highly flammable vegetation near structures and roadways throughout San Rafael.
Objective 2	Apply vegetation management and defensible space standards citywide.

TABLE 4.18-2 WILDFIRE PREVENTION AND PROTECTION ACTION PLAN OBJECTIVES

Number	Objectives
Objective 3	Reduce ember ignitions within immediate zones to prevent structure ignitions through enhanced standards and support.
Objective 4	Expand goat grazing for vegetation maintenance.
Objective 5	Establish additional fuel interruption zones.
Objective 6	Improve public education regarding fire-safe landscaping and living with wildfire.
Objective 7	Establish more fire-wise communities in San Rafael.
Objective 8	Reduce hazardous fuels through an abatement process on privately owned unimproved lots and within 200 feet of a structure or 20 feet of a roadway.
Objective 9	Effectively coordinate the removal of vegetative debris from public and private property.
Objective 10	Engage Community Emergency Response Team members, neighborhood response groups, and other volunteers in fire prevention.
Objective 11	Reengage volunteer "broom pull days."
Objective 12	Review and update WUI map.
Objective 13	Adopt PRC Sections 4290 and 4291.
Objective 14	Develop new efforts, solutions, and resources dedicated to wildfire prevention and protection.
Section 2: Wildfire Prevention and Protection	
Objective 15	Immediately seize ignition sources at encampments and remove encampments in open space as quickly as possible.
Objective 16	Reduce likelihood of ignition in undeveloped land.
Objective 17	Explore opportunities in Fire and Building Code updates to increase use of fire-resistant materials and application of CA Fire Code 7A.
Objective 18	Eliminate fire hazard associated with shake and wooden roofs.
Objective 19	Develop comprehensive San Rafael hazardous vegetation study and mitigation measures.
Objective 20	Complete an analysis of fire roads and strategic fuel breaks.
Objective 21	Increase the number of hardened homes in San Rafael.
Objective 22	Improve development and implementation of vegetation management plans and create new resilient landscape templates.
Objective 23	Increase the number of completed vegetation management plans and resilient landscape templates.
Objective 24	Improve the public's fire risk awareness with sign improvements and installation.
Objective 25	Reduce fire risk and keep visitors using short-term rentals safe.
Objective 26	Hire additional staff dedicated to vegetation management and disaster mitigation.
Objective 27	Increase police ranger staffing.
Section 3: Notifications and Evacuations	
Objective 28	Reduce fuels along roadways.
Objective 29	Establish a residential hillside "parking box" program.
Objective 30	Improve public emergency alerting capabilities and policies.
Objective 31	Increase capability for early fire warnings and detection.
Objective 32	Review and expand evacuation plans, incorporating areas of refuge, and support neighborhood evacuation drills.
Objective 33	Ensure safe and resilient critical infrastructure.
Objective 34	Ensure that appropriate staff can send and receive emergency alerts.
Objective 35	Ensure that City staff can communicate during an emergency.
Objective 36	Ensure that residents can evacuate through garage doors if power is out.
Objective 37	Prevent potential entrapments by requiring two gates in any fence in designated areas.
Objective 38	Maintain and expand coordination of wildfire prevention and response planning with Marin County, other Marin jurisdictions, Marin County Fire, FireSafe MARIN, and neighboring landowning partners.

Source: City of San Rafael *Wildfire Prevention and Protection Plan*, adopted March 2019.

4.18.1.2 EXISTING CONDITIONS

Wildfire Background

Types of Wildfire

There are three basic types of wildland fires:

- Crown fires burn trees to their tops and are the most intense and dangerous wildland fires.
- Surface fires burn surface litter and duff and are known for being the easiest fires to extinguish and to cause the least damage. Brush and small trees enable surface fires to reach treetops, and so are referred to as *ladder fuels*.
- Underground fires occur underground in deep accumulations of dead vegetation. These fires move very slowly and can be difficult to extinguish due to limited access.[8]

Wildfires burn in many types of vegetation—forest, woodland, scrub (including chaparral, sage scrub, and desert scrub), and grassland.[9] Many species of native California plants are adapted to fire. Chaparral shrubs recover from fire in one of two ways: (1) woody root crowns or burls below the soil surface that survive a fire and resprout; and (2) shrubs (various species of *Manzanita* and *Ceanothus*) that are killed by fire and produce seeds requiring intense heat from a fire to germinate.[10] Additionally, many species of conifers have seed cones that require fire to open in order for them to reproduce.[11] Between 2010 and 2017, wildfires in California burned about 265,000 acres of forest land, 207,000 acres of scrub vegetation, 99,000 acres of grassland, 18,000 acres of desert vegetation, and 14,000 acres of other vegetation types.[12] Wildfires have been observed to be more frequent and growing in intensity the past several years, particularly in the State of California where prolonged drought and hot, dry temperatures have been common.

Wildfire Causes

Although the term *wildfire* suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of

[8] Natural Resources Canada. 2018. Fire Behavior, https://www.nrcan.gc.ca/forests/fire-insects-disturbances/fire/13145, accessed on December 21, 2018.

[9] California Department of Forestry and Fire Prevention (CAL FIRE). 1999. Learning to Live with Fire, http://www.fire.ca.gov/communications/downloads/live_w_fire.pdf, accessed on April 8, 2019.

[10] Rundel, Philip, and Gustafson, Robert. 2005. *Introduction to the Plant Life of Southern California*. Berkeley and Los Angeles, California: University of California Press.

[11] California Department of Forestry and Fire Prevention (CAL FIRE). 1999. Learning to Live with Fire, http://www.fire.ca.gov/communications/downloads/live_w_fire.pdf, accessed on April 8, 2019.

[12] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention (CAL FIRE). 2018. *2018 Strategic Fire Plan for California,* http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614. Pdf, accessed on April 8, 2019.

wildfires, accounting for 44 percent of acreage burned.[13] The three most common types of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.); arson; and equipment use.[14] Power lines can also ignite wildfires through downed lines, vegetation contact, conductors that collide, and equipment failures.[15] CAL FIRE determined that 16 wildfires in northern California in October 2017 were caused by electric power and distribution lines, conductors, and the failure of power poles.[16,17] Lightning is the most common cause of nature-induced wildfire.[18]

An analysis of US Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires was within 0.5 mile of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within approximately 650 feet (200 meters) of a road. The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters.[19]

There are three primary methods of wildfire spread:

- Embers. Embers are the most prolific cause of home ignition, at a rate of two out of every three homes destroyed. Embers are glowing or burning pieces of vegetation or construction debris that are lofted during a wildfire and can move up to a mile ahead of a firestorm. These small embers or sparks may fall on the vegetation near a home (on dry leaves, needles, or twigs on the roof) and subsequently ignite the home. Ember storms place at potential risk all structures without fire-resistant landscaping and construction that are within miles of the fire.
- Direct Flame Contact. Direct flame impingement refers to the transfer of heat by direct flame exposure. Direct contact will heat the building materials of the home, and if the time and intensity of exposure is severe enough, windows will break and materials will ignite.
- Radiant Heat. A house can catch fire from the heat that is transferred to it from nearby burning objects, even in the absence of direct flames or embers. By creating defensible space around homes,

[13] Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences (PNAS): Volume 114 No. 11, https://www.pnas.org/content/pnas/114/11/2946.full.pdf, accessed on December 20, 2018.

[14] Pacific Biodiversity Institute. 2007. Roads and Wildfires, http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf, accessed on April 12, 2019.

[15] Texas Wildfire Mitigation Project. 2018. How Do Power Lines Cause Wildfires? https://wildfiremitigation.tees.tamus.edu/faqs/how-power-lines-cause-wildfires, accessed on April 12, 2019.

[16] California Department of Forestry and Fire Prevention (CAL FIRE). 2018, June 1. CAL FIRE Investigators Determine Causes of 12 Wildfires in Mendocino, Humboldt, Butte, Sonoma, Lake, and Napa Counties, https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017_WildfireSiege_Cause.pdf, accessed on April 12, 2019.

[17] California Department of Forestry and Fire Prevention (CAL FIRE). 2018, May 25. CAL FIRE Investigators Determine Cause of Four Wildfires in Butte and Nevada Counties, https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017_WildfireSiege_Cause%20v2%20AB%20(002).pdf, accessed on April 12, 2019.

[18] Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences (PNAS): Volume 114 No. 11. https://www.pnas.org/content/pnas/114/11/2946.full.pdf, accessed on December 20, 2018.

[19] Pacific Biodiversity Institute. 2007. Roads and Wildfires, http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf, accessed on April 12, 2019.

the risk from radiant heat is significantly reduced. A home with 100 feet of clearance from forest or shrubs will usually have minimal impact from radiant heat or direct flame.[20]

Wildfire season in the Western US recently has lengthened from an average of between five and seven months to year-round. The number of large wildfires in California (i.e., greater than 1,000 acres) has increased from approximately 25 to 55 per year since the 1960s.[21] At the same time, the average annual temperature in the Western US has risen by nearly two degrees Fahrenheit since the 1970s, and the winter snowpack has declined.[22] The encroachment of urban development into wildland areas has been another contributing factor.

Frequent wildfires reduce recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate. Wildfires also increase invasion of nonnative grasses, resulting in the conversion of native shrublands to nonnative grassland.[23] Nonnative grasses are generally more flammable than the chaparral and sage scrub vegetation that is replaced; thus, such conversion exacerbates wildfire hazards.[24]

Secondary Effects

Secondary effects of wildfire include debris flows postfire and air pollution from the smoke generated by fires. The following sections describe the hazardous conditions created by these secondary wildfire effects.

Debris Flows

Postfire landslide hazards include fast-moving, highly destructive debris flows that can happen soon after wildfires in response to high intensity rainfall events, and flows that are generated over a longer time because of root decay and loss of soil strength. Fires increase the potential for debris flows by increasing the imperviousness of soil so that it repels water, and by destroying vegetation that would slow and absorb rainfall, and whose roots would help stabilize soil.[25] The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses.[26] Postfire debris flows are particularly hazardous because they can occur with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles. Postfire debris flows are

[20] City of San Rafael. 2019. Wildfire Prevention and Protection Action Plan.

[21] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention (CAL FIRE). 2018. 2018 Strategic Fire Plan for California, page 7.

[22] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention (CAL FIRE). 2018. 2018 Strategic Fire Plan for California.

[23] US Geological Survey. 2012. Fire-Driven Alien Plant Invasion in a Fire-Prone Community, http://www.californiachaparral.com/images/Fire_driven_alien_plants_Brief.pdf, accessed on April 12, 2019.

[24] See University of California Division of Agriculture and Natural Resources (ANR). 2009. Invasive Plants and Wildfires in Southern California, https://anrcatalog.ucanr.edu/pdf/8397.pdf, accessed on April 12, 2019.

[25] US Geological Survey. 2018. New post-wildfire resource guide now available to help communities cope with flood and debris flow danger, https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news_science_products=1#qt-news_science_products, accessed on December 27, 2018.

[26] California Geological Survey. 2018. Post-Fire Debris Flow Facts, https://www.conservation.ca.gov/index/Pages/Fact-sheets/Post-Fire-Debris-Flow-Facts.aspx, accessed on December 20, 2018.

most common in the two years after a fire; they are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas.

Debris flows are considered a type of landslide, which is defined as a mass-movement process that generates a down-slope movement of mud, soil, rock, and/or vegetation.[27] Debris flows occur when surface soils become completely saturated by intense rainstorms and break away from the hillside. These flows are highly fluid, and therefore follow the gulches and creek canyons to the base of the slope.[28] Areas with steep slopes are typically within debris flow areas.

Air Pollution

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles ($PM_{2.5}$), which are microscopic particles that can penetrate the lungs and cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. Some populations are more sensitive than others to smoke—for instance, people with heart or lung diseases, the elderly, children, people with diabetes, and pregnant women.[29]

Fire Protection Resources

The SRFD provides fire protection and prevention services in the EIR Study Area and operates six fire stations and one fire administration office. The SRFD, along with a vegetation management specialist, vegetation management inspector, and two open-space rangers with the San Rafael Police Department, manage fire prevention efforts throughout the city. Existing programs include monthly chipper days, WUI home inspections, and removal of dangerous items at encampments that pose immediate fire risks.[30] In addition, because wildfires do not respect jurisdictional boundaries, the SRFD recently introduced a proposed plan to create a new joint powers authority with the MWPA to improve regional wildfire prevention efforts. A description of fire protection resources in San Rafael as it relates to the impacts to the SRFD is provided in Chapter 4.15, Public Services and Parks and Recreation, of this Draft EIR.

EIR Study Area

Wildfire History

The City of San Rafael 2017 LHMP describes two wildfire disaster declarations in Marin County and eight wildfires in the county from 1919 to 2016. Two of the eight wildfires were within close proximity to the city of San Rafael (Kent Woodlands Wildfire, 1972; Sorich Park Wildfire, 1976).

[27] Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

[28] Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

[29] Airnow. 2018. How Smoke from Fires Can Affect Your Health, https://airnow.gov/index.cfm?action=smoke.index, accessed on December 21, 2018.

[30] City of San Rafael. 2019. *Wildfire Prevention and Protection Action Plan*.

WILDFIRE

The LHMP also describes three structural fires that in the city, including the Downtown Fire in July 1957, the Courthouse Fire in May 1971, and the Marin History Museum Fire in July 1990.[31] CAL FIRE's *Historic Wildfire Perimeters (1950–2017)* database shows three additional fires within the city limits: Margarita Drive Fire in 1968, San Rafael Assist Fire in 1975, and the San Rafael Hill fires in 2000 and 2001.[32] One additional fire occurred in June 2018 on lands within Boyd Park and burned approximately 13 acres.

Wildfire Hazards

The EIR Study Area is not in an FRA but contains land in an SRA and LRA, as shown on Figure 4.18-1. The SRA includes approximately 6,457 acres in the Sun Valley, Santa Venetia, China Camp, and Lucas Valley neighborhoods.[33] The LRA covers the remaining acreage within the city, approximately 14,169 acres.[34]

As shown on Figure 4.18-1, the approximately 6,457 acres within the SRA are designated as a moderate fire hazard severity zone. The land in the LRA has 8,315 acres that are not within a fire hazard severity zone, 3,467 acres in a moderate fire hazard severity zone, and 2,387 acres in a high fire hazard severity zone.[35] There is no acreage in the EIR Study Area classified by the State of California as being a VHFHSZ.

According to Cal OES, a WUI is defined as any area where structures and other human development meet or intermingle with wildland vegetation.[36] Developments in the WUI exacerbate fire occurrence and fire spread in several ways, including:

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to buildup of fuel and increasing wildfire hazard further.[37]

Increased fire frequency tends to eliminate and replace native shrubs with weedy, highly flammable annual grasslands.[38]

[31] Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*, pages 4-91 to 4-100.

[32] California Department of Forestry and Fire Protection. 2018. Historic Wildfire Perimeters (1950-2017) Database. http://www.arcgis.com/home/item.html?id=853e0aa557e54adc95c9e9c68b585889, accessed April 12, 2019.

[33] Marin County. 2017. Fire Hazard Severity Zone. http://www.arcgis.com/home/item.html?id=0683285b35354c18a93de194a8e3b70d, accessed April 17, 2019.

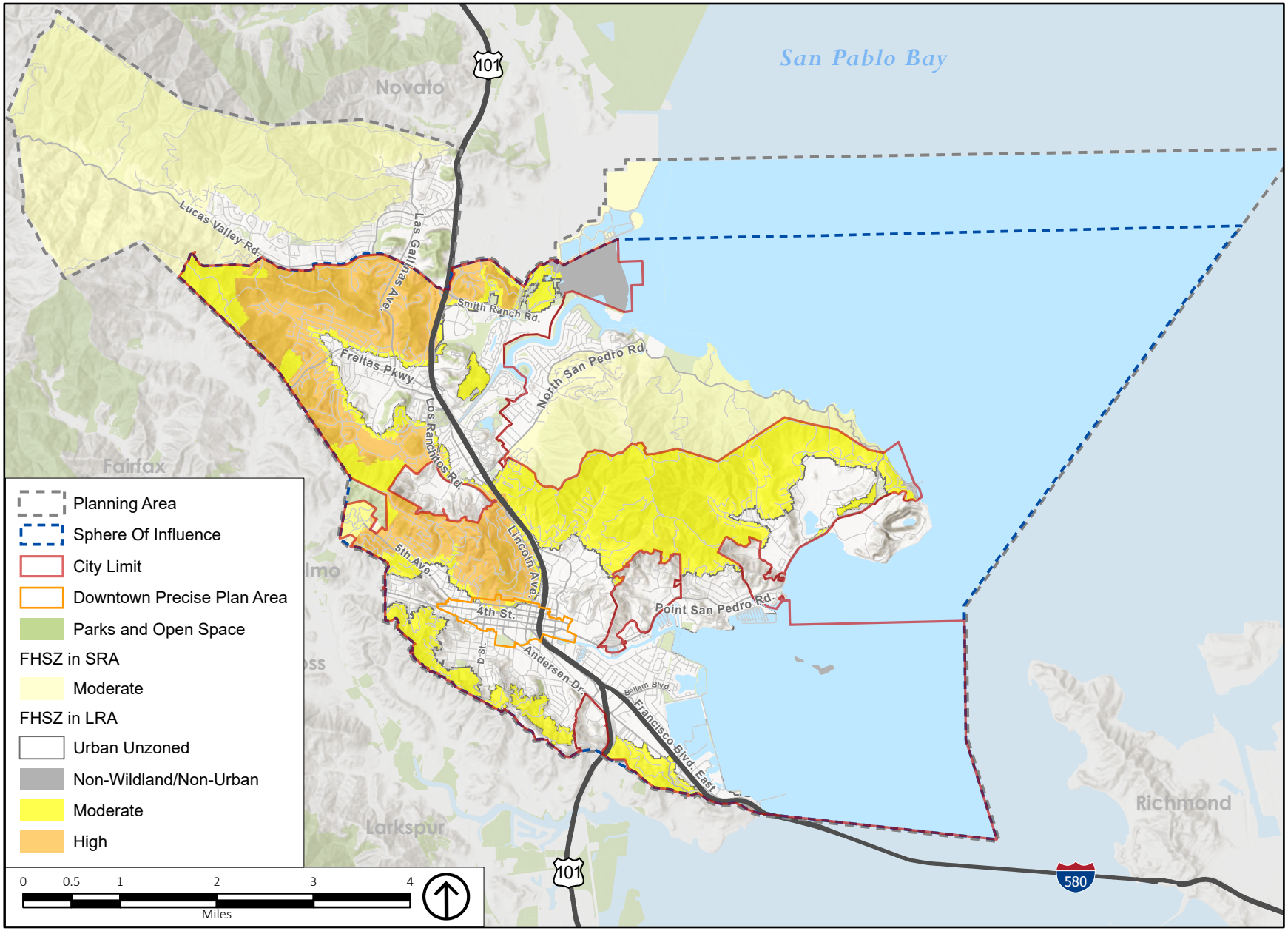
[34] Marin County. 2017. Fire Hazard Severity Zone. http://www.arcgis.com/home/item.html?id=0683285b35354c18a93de194a8e3b70d, accessed April 17, 2019.

[35] Marin County. 2017. *Fire Hazard Severity Zone*. http://www.arcgis.com/home/item.html?id=0683285b35354c18a93de194a8e3b70d, accessed April 17, 2019.

[36] Cal OES. 2018. *California State Hazard Mitigation Plan*.

[37] Radeloff, Volker; Helmers, David; Kramer, H., et al. 2018. Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk. Proceedings of the National Academy of Sciences (PNAS): Volume 115 No. 13, https://www.pnas.org/content/pnas/115/13/3314.full.pdf, accessed on April 18, 2019.

[38] US Geological Survey. 2012. Why Are Biologists Studying Housing Loss from Wildfires? https://www.usgs.gov/center-news/why-are-biologists-studying-housing-loss-wildfires, accessed on April 18, 2019.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-1

Wildfire Responsibility Areas and Fire Hazard Severity Zones

WILDFIRE

Approximately 6,000 acres of land within San Rafael is in the WUI, as shown on Figure 4.18-2.[39] Land uses in the WUI consist of approximately 3,960 acres of residential uses and approximately 2,025 acres of industrial, commercial, and open space uses. According to the WPPAP, the City's current wildfire prevention efforts are focused on the WUI.[40]

The unincorporated portion of the EIR Study Area is primarily within moderate fire hazard severity zones, as shown previously on Figure 4.18-1, and is under the County's jurisdiction and therefore regulated under the Marin CWPP, the Local Wildfire Prevention and Mitigation Initiative and Marin Wildfire Prevention Authority, and CAL FIRE.

Landcover and Vegetation

As described in more detail in Chapter 4.4, Biological Resources, of this Draft EIR, the EIR Study Area contains 12 vegetation communities, but nearly 38 percent of the plantings consist of urban and barren vegetation communities. The dominant nonurban vegetation types in the remaining 62 percent of the EIR Study Area consist of oak woodland (26 percent), annual grassland (14 percent), hardwood-conifer (11 percent), and saline marsh (6 percent). The remaining 5 percent of vegetation consists of coastal scrub, mixed chaparral, riparian woodland, lacustrine, freshwater marsh, eucalyptus, and cropland.

Slopes

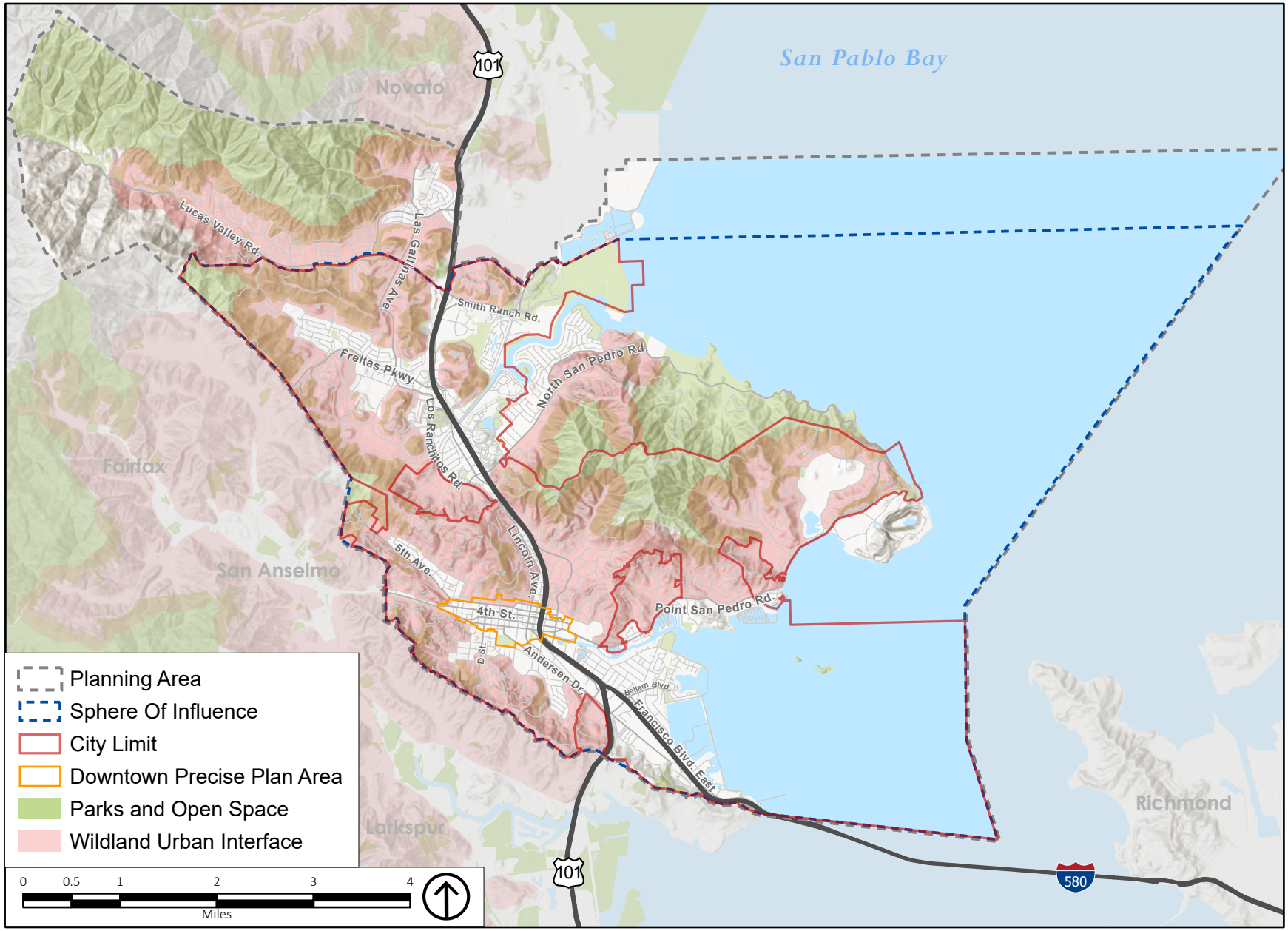
Slope is a measure of land steepness, and wildfire intensity and rate of spread increase as slope increases due to the tendency of heat to rise via convection.[41] For example, as slope increases from 20 to 40 percent, flame heights can double, and rates of fire spread can increase fourfold; from 40 to 60 percent, flame heights can become three times higher, and rates of spread can increase eightfold.[42] The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes. The topography in the EIR Study Area is diverse, with rolling hills, valleys, and ridges that trend from the northwest to the southeast. Areas with steep slopes in the EIR Study Area include Terra Linda and Sleepy Hollow Open Space Area in the northwest corner of the EIR Study Area, Southern Heights Ridge on the southwestern edge of the EIR Study Area, and Black Canyon and San Pedro Mountain in the eastern portion of the EIR Study Area. These areas would also be more susceptible to debris flow after a fire.

[39] County of Marin. 2019. Urban-Wildland Interface. http://www.marinmap.org/dnn/DataServices/GISDataDownload.aspx, accessed April 17, 2019.

[40] City of San Rafael. 2019. *Wildfire Prevention and Protection Action Plan*.

[41] Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

[42] Marin County Fire Department. 2016. *Community Wildfire Protection Plan*.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-2
Wildland Urban Interface

Prevailing Winds

Prevailing winds are considered the wind pattern from the direction that is predominant at a place or season. Winds in the EIR Study Area can be characterized as nontornadic (straight-line) winds, which can exacerbate fire conditions by drying out the vegetation, increasing fuel in the region, and increasing the intensity of existing fires.[43] Prevailing wind patterns consist of wind from the west from February to November, and winds from the north from November to February.[44] The windier part of the year is from February to July, with average wind speeds of 8.0 miles per hour, and the calmer wind months are from July to February, with an average wind speed of 6.9 miles per hour.[45]

Downtown Precise Plan Area

Wildfire History

There are no known wildfires that have occurred in the Downtown Precise Plan Area.

Wildfire Hazards

As shown on Figure 4.18-3, the Downtown Precise Plan Area contains both high and moderate fire hazard severity zones along the northern edge of the boundary. As shown on Figure 4.18-4, the northern, western, and southwestern portions of the Downtown Precise Plan Area are in the WUI.

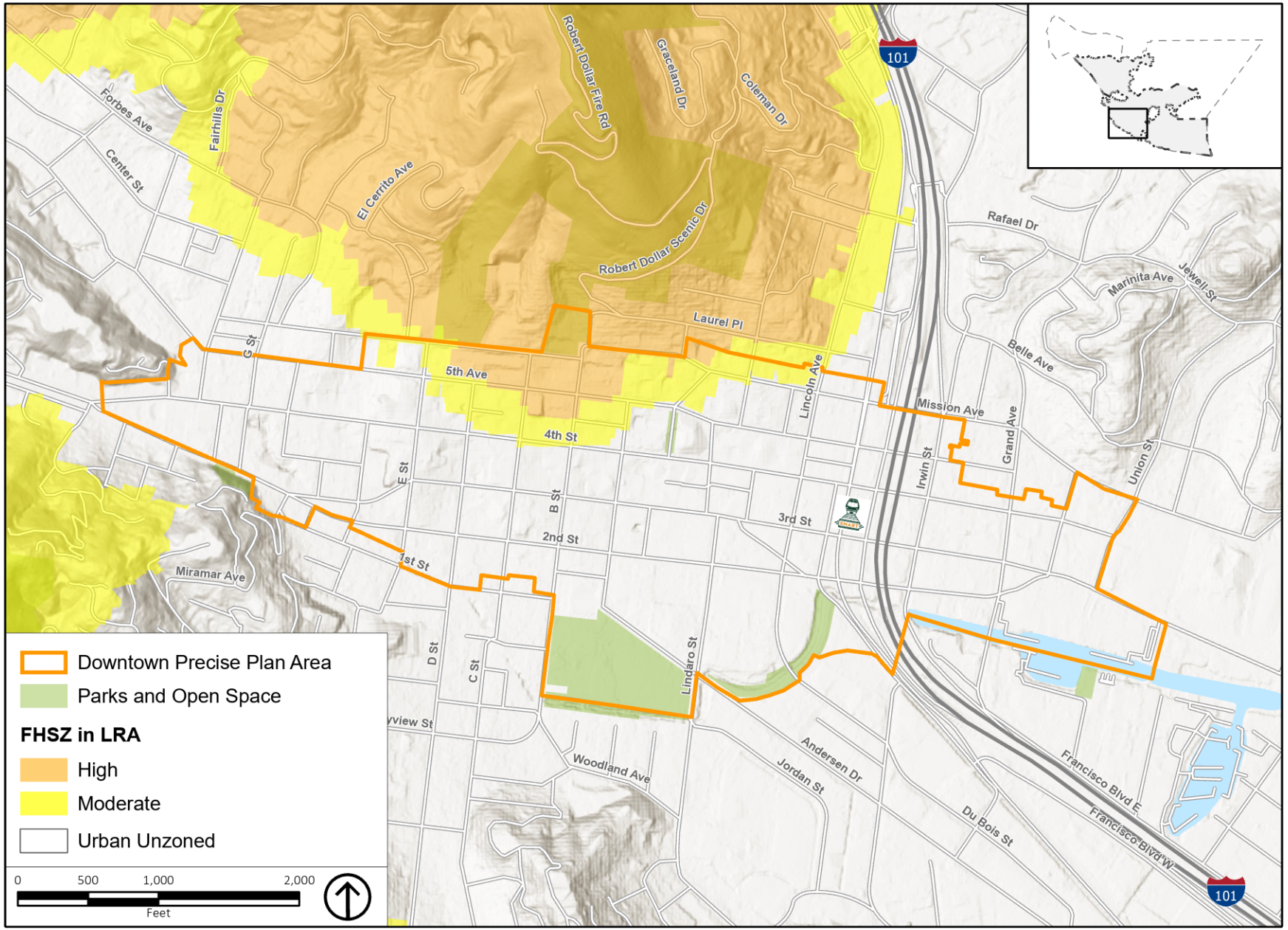
Landcover and Vegetation

The Downtown Precise Plan Area is designated as an urban, built-out portion of San Rafael. As such, there is little existing natural vegetation within the Downtown Precise Plan Area boundary. Vegetation in the Downtown Precise Plan Area is primarily associated with street trees and associated landscaping. Natural vegetation does exist on San Rafael Hill, which sits on the northern boundary of the Downtown Precise Plan Area. As described in Chapter 4.4, Biological Resources, of this Draft EIR, the vegetation cover of San Rafael Hill consists entirely of oak woodland.

[43] Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

[44] Weather Spark. 2016. Average Weather in San Rafael California, United States. https://weatherspark.com/y/562/Average-Weather-in-San-Rafael-California-United-States-Year-Round, accessed on April 18, 2019.

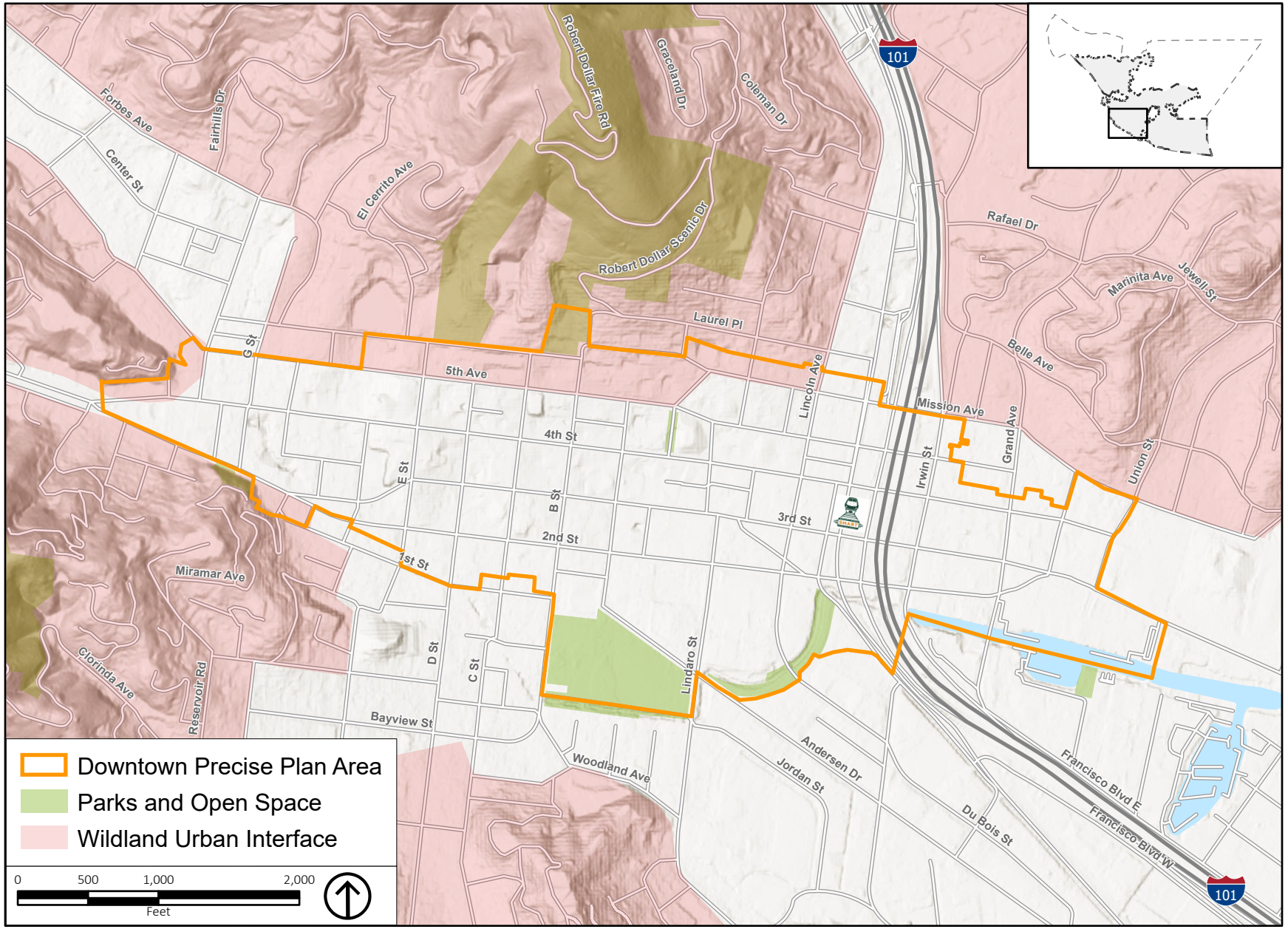
[45] Weather Spark. 2016. Average Weather in San Rafael California, United States. https://weatherspark.com/y/562/Average-Weather-in-San-Rafael-California-United-States-Year-Round, accessed on April 18, 2019.



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-3

Downtown Wildfire Responsibility Areas and Fire Hazard Severity Zones



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-4
Downtown Wildland Urban Interface

Slopes

The Downtown Precise Plan Area has zero to gentle slopes.[46] Approximately 92 percent of the Downtown Precise Plan Area contains slopes ranging from 0 to 9 percent to the south between First Street on the southern boundary and Fourth Street towards the north. The additional 8 percent of the Downtown Precise Plan Area ranges from 15 to 50 percent.[47] The northern boundary of the Downtown Precise Plan Area sits at the base of the San Rafael Hill, which has a slope of 50 percent or more at Boyd Park. Therefore, the portion of the Downtown Precise Plan Area which slopes between 15 and 50 percent is concentrated north of Fourth Street until reaching the base of San Rafael Hill.

Prevailing Winds

Wind patterns are uniform for the entire EIR Study Area. As discussed above, prevailing wind patterns consist of wind from the west or north with average wind speeds between 6.9 and 8.0 miles per hour.

4.18.2 STANDARDS OF SIGNIFICANCE

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would result in significant wildfire impacts if it would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.
5. Result in significant cumulative impacts related to wildfire.

4.18.3 IMPACT DISCUSSION

The standards of significance listed in Section 4.18.2, apply to projects that are within or near lands within the SRA or lands that are within a VHFHSZ. As shown on Figure 4.18-1, the EIR Study Area is within the SRA, and as shown on Figure 4.18-2, a large portion of the EIR Study Area is within the WUI. Therefore, the standards of significance in Section 4.18.2 apply to the proposed project.

[46] USDA, Natural Resource Conservation Service. 2017. Web Soil Survey (WSS). https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed on April 22, 2019.

[47] USDA, Natural Resource Conservation Service. 2017. Web Soil Survey (WSS). https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed on April 22, 2019.

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FIRE-1 Implementation of the proposed project could substantially impair an adopted emergency response plan or emergency evacuation plan.

General Plan 2040

As discussed in Section 4.18.1.1, Regulatory Framework, the Marin OES provides emergency management and recovery services through the Marin ERP and the Marin Emergency Operations Plan (EOP). All cities and towns within Marin County participate in the regional coordination of emergency management activities by Marin OES. As described in Impact Discussion HAZ-6 in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, implementation of the proposed General Plan 2040 would not impair implementation of or physically interfere with either the Marin ERP or the Marin EOP.

At the local level, San Rafael is responsible for managing emergency preparedness, response, and evacuation through the LHMP. As discussed above in Section 4.18.1.1, Regulatory Framework, the City of San Rafael LHMP includes actions that support emergency response in the event of a disaster, including wildfire. LHMP Action 1 requires the integration of the LHMP into the Safety and Resilience Element of the General Plan 2040, and Actions 2 and 3 instruct the City to adequately prepare both first responders and the community on emergency evacuations in the event of a natural disaster.

LHMP Action 43 instructs the City to adopt a WPPAP and this was accomplished in August 2020 as described above in Section 4.18.1.1, Regulatory Framework. The WPPAP is San Rafael's master plan and framework to address all phases of a wildfire disaster: mitigation, preparedness, response, and recovery. The framework of the WPPAP is outlined through a series of objectives organized into three categories. Category 3, Notifications and Evacuation, includes several objectives that are focused on maintaining clear routes for emergency vehicle access, improving public emergency alerting capabilities, supporting neighborhood evacuation drills, reviewing and expanding evacuation plans as needed, ensuring safe and resilient critical infrastructure, and limiting design review provisions. Action 32 of the WPPAP specifically states that the City shall review Countywide evacuation plans and expand existing plans to address San Rafael's unique needs which would establish additional transportation network redundancies and potentially reduce the burden on a single egress artery during an emergency. Further, as stated in Section 4.18.1.1, Marin County residents approved Measure C to fund proactive state-of-the-art wildfire prevention and preparedness efforts in Marin County which includes a key initiative aimed to improve evacuation routes and infrastructure to enhance traffic flow and promote safe evacuations.

The proposed Safety and Resilience (S) Element contains goals, policies, and programs that require local planning and development decisions to take into account existing plans related to wildfire. The following General Plan goals, policies, and programs would serve to ensure that future development takes existing plans into account:

Goal S-1: A Safer, More Resilient City. Minimize San Rafael's vulnerability to the impacts of environmental hazards and public health emergencies.

- Policy S-1.1: Local Hazard Mitigation Plan (LHMP). The San Rafael LHMP is adopted by reference into the General Plan. Policies and actions throughout the General Plan shall be consistent with the LHMP and support its goals and objectives.

- Program S-1.1A: LHMP Mitigation Action Plan. Implement the Mitigation Action Plan in the LHMP. The City will consider opportunities to advance each action through operating procedures, development approvals, budgets, public education, and capital improvement projects.
- Program S-1.1B: Mitigation Program Funding. Develop an overall funding strategy to prioritize and pursue mitigation projects, including identification and tracking of grants and regular coordination with FEMA and State hazard mitigation agencies.
- Program S-1.1C: LHMP Updates. Periodically update the Local Hazard Mitigation Plan to reflect new data, technology, available resources, partnership opportunities, and state and federal requirements.
- Program S-1.4A: LHMP Amendments. Amend local emergency preparedness documents as needed to address public health emergencies, including communication protocol, emergency operating procedures, and provisions for sheltering-in-place.

Goal S-4: A Fire-Safe Community. Minimize injury, loss of life, and damage to property resulting from wildland fire hazards.

- Policy S-4.1: Wildfire Hazards. Continue vegetation management and maintenance programs to reduce the destructive potential of wildfires.
  - Program S-4.1A: Wildfire Prevention and Protection Action Plan. Implement the Wildfire Prevention and Protection Action Plan (August 2020) in a manner consistent with the direction provided by the San Rafael City Council.

Additional General Plan 2040 policies and programs related to emergency response and evacuation are included in the Land Use (LU), Mobility (M), and Community Services and Infrastructure (CSI) Elements. Such policies and programs address emergency access, adequate emergency facilities and response times, and the density of development to ensure growth in San Rafael does not block emergency services access in the event of an emergency. Such policies and programs include:

Goal LU-1: Well-Managed Growth. Grow and change in a way that serves community needs, improves fiscal stability, and enhances the quality of life.

- Policy LU-1.8: Density of Residential Development. Use the density ranges in the Land Use Element to determine the number of housing units allowed on properties within the Planning Area. The following provisions apply:
  - The density "range" includes a maximum and minimum. A given General Plan designation may have multiple corresponding zoning districts, including at least one district in which the maximum density may be achieved. Other zoning districts may have maximum densities that are less than the maximum indicated by the General Plan.
  - The number of units permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, City design policies, and prevailing densities in adjacent areas.
  - The maximum net density shown on the General Plan excludes density bonuses that may be provided for affordable housing or other community benefits, in accordance with State law and local housing policies.

WILDFIRE

- As required by State law, an accessory dwelling unit (ADU) or junior ADU shall not be counted as a dwelling unit for the purposes of calculating net density.
- Areas in the "Downtown" General Plan category shall be exempt from the requirements of this policy and are instead subject to standards defined by the Downtown San Rafael Precise Plan.

- Policy LU-1.10: Intensity of Non-Residential Development. Use the Floor Area Ratio limits on Figure 3-2 to determine the square footage of building space allowed on properties with non-residential General Plan designations. The following provisions apply:
  - As with density, FAR is calculated on a "net" basis, and is based on the area of each parcel excluding streets and easements.
  - The maximum FAR stated by the General Plan is not guaranteed. The square footage permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, and City design policies.
  - The maximum FARs shown in Figure 3-2 exclude any residential development on the property. In the event that residential uses or mixed use projects are proposed on these sites, the maximum area is the sum of the FAR allowance plus the residential density allowance for the property. This Clause does not apply to Downtown San Rafael, which is regulated by the Downtown Precise Plan.

Goal M-2: Improved Transportation Efficiency and Access. Sustain an efficient, cost-effective transportation network that continuously improves mobility and accessibility for all users.

- Policy M-2.8: Emergency Access. Identify alternate ingress and egress routes (and modes of travel) for areas with the potential to be cut off during a flood, earthquake, wildfire, or similar disaster.

Goal CSI-3: Exceptional Public Safety Services. Provide and maintain exceptional fire, public safety, and paramedic services.

- Policy CSI-3.2: Mitigating Development Impacts. Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public safety, fire prevention, and emergency access and response needs are considered and effectively addressed.
  - Program CSI-3.1B: Capital Facilities. Complete improvements to essential public safety facilities made possible by voter-approved measures. Conduct periodic evaluations of facility and technology needs in the future to ensure that the Police and Fire Departments are equipped to respond to emergencies and deliver quality services.
  - Program CSI-3.2B: Emergency Response Time. Use the development review process to identify appropriate measures to reduce fire hazards and ensure adequate emergency response capacity.
- Policy CSI-3.6: Mutual Aid. Maintain mutual aid agreements for police and fire service with other jurisdictions and community service districts to ensure that the capacity exists to adequately respond to local emergencies.

As discussed in Section 4.18.1.1, Regulatory Framework, there are various local, regional, and State agencies that have adopted plans relevant to emergency response and evacuation. Implementation of General Plan 2040 would include the requirement to comply with all existing adopted regulations, which include the 2019 California Fire Code and the 2019 California Building Code regulations, the Marin ERP, the Marin EOP, the SRMC, the LHMP, and the WPPAP. Each of these documents incorporate emergency

response and evacuation provisions to ensure existing and future development comply with best management practices. As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development. All future development, regardless of the location, is required to comply with adopted local, regional, and State plans and regulations addressing emergency response and evacuation. As such, and as determined in Impact Discussion HAZ-6 in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, implementation of General Plan 2040 would not substantially impair an adopted emergency response or emergency evacuation plan, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to wildfires. Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would be required to comply with adopted local, regional, and State plans and regulations addressing emergency response and evacuation. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not substantially impair an adopted emergency response or emergency evacuation plan, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

FIRE-2	**Implementation of the proposed project could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.**

General Plan 2040

Pursuant to the 2015 *California Building Industry Association v. Bay Area Air Quality Management District* case, CEQA applies to a project's impacts on the environment and not the environment's impacts on the project, unless the project would exacerbate the environmental hazard.[48] Implementation of General Plan 2040 would result in a significant impact if it would exacerbate wildfire risks due to site characteristics such as slope, prevailing winds, or vegetation.

The proposed Safety and Resilience (S) Element and the Conservation and Climate Change (C) Element contain goals, policies, and programs that require local planning and development decisions to consider

[48] California Supreme Court, 2015, California Building Industry Association v. Bay Area Air Quality Management District, Opinion No. S213478, date filed December 17, 2015.

the risk of wildfire hazards. In addition to the goals, policies, and programs listed in Impact Discussion FIRE-1, the following General Plan goals, policies, and programs would serve to minimize potential adverse impacts from wildfire hazards:

Goal S-4: Reduction of Wildfire Hazards. Minimize injury, loss of life, and damage to property resulting from wildland fire hazards.

- Policy S-4.1: Wildfire Hazards. Continue vegetation management and maintenance programs to reduce the destructive potential of wildfires.
  - Program S-4.1B: Fire Hazard Maps. Maps identifying potential fire hazard areas in San Rafael. Use these maps for vegetation management and planning purposes.
  - Program S-4.1C: Fire Protection Ordinance. Continue to implement Municipal Code standards to reduce fire hazards in areas, including vegetation management requirements and the designation of a Wildland-Urban Interface (WUI) Zone. Periodically update these standards and the WUI map to implement Wildfire Action Plan measures and other programs to further reduce wildfire risks.
  - Program S-4.1D: Wildfire Fuel Breaks. Where necessary, create new fuel interruption zones in Wildland Urban Interface areas and maintain and expand zones that are already in place. Highly flammable exotic vegetation should be strategically removed in these areas to slow the spread of wildfire and reduce threats to homes.
  - Program S-4.1E: Goat Grazing. Continue the use of goat grazing on lands where native vegetation will not be harmed through cooperative relationships with contractors and public agencies.
  - Program S-4.1F: Encampment-Related Hazards. Work collaboratively with service providers for homeless residents and other partners to reduce fire hazards associated with illegal encampments and campfires. Consider partnerships to employ unsheltered residents in vegetation management work.
  - Program S-4.1G: Open Space and Forestry Management. Develop science-based open space and forest management plans to reduce fuel loads, maintain fuel breaks, replace highly flammable species with native species, and increase the health and carbon sequestration potential of open space lands.
- Policy S-4.2: Fire Resilience in Developed Areas. Improve the resilience of neighborhoods and business districts to wildfire hazards.
  - Program S-4.2A: Reduction of Structure Hazards. Implement measures to reduce wildfire hazards to existing structures, including fire-resistant landscaping and building materials, protected vents and gutters, phasing out wood shake roofs, vegetation management requirements around structures, limits on highly flammable plant materials, restricted parking on narrow streets, and enforcement and abatement programs. Focus on measures that provide the greatest fire safety benefits relative to their costs to the City and private sector.
  - Program S-4.2B: Tree Maintenance. Undertake a tree safety maintenance program to maintain the health and safety of trees along public roadways and minimize safety impacts from trees falling in road rights of way.
  - Program S-4.2C: Public Education on Fire Resilience and Response. Improve public education and awareness about fire-safe structures and landscaping. This should include demonstration projects ("Resilient Landscape Templates") that help property owners understand what species to remove and what to plant, and how to make their homes more fire-resistant. Education programs also

should address actions to be taken in the event a fire is approaching, including warnings, evacuation routes, shelters, and provisions for "go bags" and personal safety.

- Policy S-4.3: New Development in Fire Hazard Areas. Design new development to minimize fire hazards. Densities, land uses, and site plans should reflect the level of wildfire risk and evacuation capacity at a given location.
  - Program S-4.3A: Fire Hazard Mitigation in New Development. Through the development review process, require appropriate mitigation measures such as fire preventive site design, landscaping and building materials, and the use of fire suppression techniques such as interior and exterior sprinklers. Before adopting new Code standards and requirements, consider and disclose their potential costs to applicants relative to the benefits they may provide.
  - Program S-4.3B: Development Review for Emergency Response. Review development applications in fire prone areas to ensure adequate emergency vehicle access, and adequate water pressure and supply for fire-fighting purposes (see also Goal CSI-4).
  - Program S-4.3C: Wildfire Prevention Funding. Develop new partnerships, revenue opportunities, and funding avenues for wildfire prevention and hazard abatement.

Goal C-1. Goal C-1: Supporting Our Natural Communities. Protect, restore, and enhance San Rafael's environment and natural communities.

- Policy C-1.14: Control of Invasive Plants. Remove and control undesirable non-native plant species from City-owned open space and road rights-of-way and encourage the removal and control of these species from non-City owned ecologically sensitive or fire-prone areas.
  - Program C-1.14D: Wildfire Action Plan Implementation. Implement the provisions of San Rafael's Wildfire Action Plan (2020) relating to the control of invasive plants, including further limiting the sale or planting of highly flammable non-native plants in the city, supporting volunteer activities to remove Scotch and French broom, revising standards for Eucalyptus, providing fuel breaks on public property, and educating the public on fire-safe landscaping.

Slope

As discussed in Section 4.18.1.2, Existing Conditions, the EIR Study Area contains moderate to steep slopes as well as flatter valley areas. Construction on sloped project sites may require grading and site preparation activities, which could change the slope of a single parcel or site. Each development would be required to submit grading plans and construction drawings, which would be reviewed and approved by City staff based on the California Building Code and California Fire Code. Additionally, new development would be required to comply with General Plan 2040 goals, policies, and programs described in Impact Discussion FIRE-1 and in Impact Discussion FIRE-2.

New slopes created by potential future development would be minor and would not be expected to exacerbate the spread of wildfires within the EIR Study Area because future development is anticipated to occur in existing urban areas. Future development that may occur on sloped land in the greater EIR Study Area is not anticipated to change the overall characteristics of the city. Implementation of the proposed project would not involve new development or redevelopment within the SRA, and therefore would not involve the creation of substantial new slopes that would exacerbate wildfire risks. As described above, implementation of the proposed project would largely occur in existing urbanized areas and would not

create new slopes in flat areas of the EIR Study Area. Therefore, significant risk of loss, injury, or death due to slopes would be *less than significant.*

Prevailing Winds

The windier part of the year in the EIR Study Area is from February to July, with average wind speeds of over 8.0 miles per hour. During this time of year, prevailing winds are generally from the west. During the calmer part of the year, from July to February, the winds are generally from the north. Given prevailing wind patterns, the calmer part of the year aligns with the months of driest precipitation; during this time, prevailing winds are blowing from the north.

Implementation of the proposed project would not change prevailing winds. However, wildfires and fire-related air pollution hazards that could originate in the EIR Study Area could be spread by prevailing winds. Figure 4.18-1 shows that the EIR Study Area includes land within an SRA Moderate Fire Hazard Severity Zone, as well as in LRA Moderate and High Fire Hazard Severity Zones. Figure 4.18-2 shows that nearly half of the EIR Study area is within the WUI. Of particular concern would be a wildfire during the dry season that spread due to prevailing winds toward the adjacent cities and SRA-designated areas.

Section 4.18.1.1, Regulatory Framework, describes plans, policies, regulations, and procedures that help to reduce wildfire risks. The Marin CWPP, the Local Wildfire Prevention and Mitigation Initiative, and Marin Wildfire Prevention Authority would reduce wildfire hazards on a regional scale. Implementation of the proposed project and compliance with the San Rafael LHMP and the San Rafael WPPAP would reduce wildfire hazards to structures, residents, and businesses. SRMC Chapter 4.12, Wildland-Urban Interface, Vegetation Management Standards, would further reduce the risk of wildfire through defensible space standards. The proposed project would incorporate the goals, policies, and programs listed earlier in Impact Discussion FIRE-1, earlier in Impact Discussion FIRE-2, and below in Impact Discussion FIRE-3, which would reduce the risk of wildfire hazards in the EIR Study Area.

In addition, the Bay Area Air Quality Management District offers air quality alerts, advisories, and forecasts by email through http://baaqmdsparetheair.enviroflash.info/. The district also maintains an interactive online map to view current air quality conditions in the region.

The proposed Conservation and Climate Change (C) and Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider air quality impacts as a result of wildfire. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on air quality due to wildfires:

Goal C-2: Clean Air. Reduce air pollution to improve environmental quality and protect public health.

- Policy C-2.4: Particulate Matter Pollution Reduction. Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
  - Program C-2.4B: Wildfire Smoke. Support efforts to reduce health hazards associated from wildfire smoke, such as limits on outdoor activities, access to respirators and air filtration systems, access to clean air refuge centers, and public education.

Goal EDI-2: Healthy Communities and Environmental Justice. Support public health and wellness through community design in all parts of the city.

- Policy EDI-2.3: Community Health. Increase community awareness about best practices for maintaining physical and mental health. Incorporate such practices in City-sponsored activities and programs.
  - Program EDI-2.3C: Municipal Code Review. Periodically evaluate City codes and ordinances for their impact on health, including provisions for tobacco, vaping, and smoke-free multi-family housing; standards for indoor air quality; and HVAC systems able to sustain safe living conditions during wildfires, power outages, and extreme weather events.

Prevailing regulatory requirements and policies, in addition to air quality response programs, would minimize the exposure of people to a significant risk of loss, injury, or death due to prevailing winds, and impacts would be *less than significant*.

Vegetation

Nearly 38 percent of the EIR Study Area consists of urban and barren vegetation communities. The dominant nonurban vegetation types within the remaining 62 percent of the EIR Study Area consist of oak woodland, annual grassland, and hardwood-conifer. Grassland, oak woodland, and hardwood-conifer fires are easily ignited, and during late summer and fall, natural vegetation is extremely flammable, and wildfires are serious hazards in areas with extensive, unirrigated vegetation.

Although the EIR Study Area largely consists of nonurban vegetation, the proposed project would introduce management activities that would reduce wildfire hazards. These vegetation management measures would include those detailed in Impact Discussion FIRE-3, below. Additionally, new development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels, in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development.

Furthermore, the San Rafael LHMP and San Rafael WPPAP include a comprehensive and cohesive set of actions to reducing wildfire risks within the EIR Study Area, as shown in Table 4.18-1 and Table 4.18-2, above. These actions include maintaining and expanding fuel breaks, applying vegetation and defensible space standards throughout the EIR Study Area, reducing the likelihood of ignition of undeveloped land, and reducing fuels along roadways. Prevailing regulatory requirements and policies, in addition to vegetation management policies and programs in the proposed project, would minimize the exposure of people to a significant risk of loss, injury, or death due to vegetation characteristics, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

As discussed in Chapter 3, Project Description, of this Draft EIR, roughly half of the potential future development in San Rafael throughout the horizon year of the General Plan 2040 would occur in the

Downtown Precise Plan Area. Development would consist of infill or redevelopment in fully urbanized areas.

Slope

As discussed in Section 4.18.1.2, Existing Conditions, the Downtown Precise Plan Area is primarily gently sloped. Similar to the rest of the EIR Study Area, development in the Downtown Precise Plan Area would require developers to submit grading plans and construction drawings, which would be reviewed and approved by City staff based on the California Building Code and California Fire Code, in addition to complying with general plan goals, policies, and programs described in Impact Discussion FIRE-1 and earlier in Impact Discussion FIRE-2.

New slopes created by potential future development would be minor and would not be expected to exacerbate the spread of wildfires within or beyond the Downtown Precise Plan Area because of the built-out and urban character of the Downtown Precise Plan Area. Future development that may occur on sloped land in the Downtown Precise Plan Area is limited to the northern edge of the Downtown Precise Plan Area. Such development is not expected to change the overall characteristics of the Downtown Precise Plan Area. Such development would not create new slopes in flat areas of the Downtown Precise Plan Area. Therefore, significant risk of loss, injury, or death due to slopes in the Downtown Precise Plan Area would be *less than significant.*

Prevailing Winds

As discussed above, implementation of the proposed project, including the Downtown Precise Plan, would not change prevailing winds. However, wildfires and fire-related air pollution hazards that could originate in the greater EIR Study Area could be spread by prevailing winds and could reach the Downtown Precise Plan Area. Figure 4.18-3 shows that the Downtown Precise Plan Area has a small portion of land on the northern boundary that is located in LRA Moderate and High Fire Hazard Severity Zones. Figure 4.18-4 shows that only a small portion of the Downtown Precise Plan Area, particularly in the north, west, and southwest portions, are within the WUI. There is additional WUI land to the northeast and south that touch or are within one mile of the Downtown Precise Plan Area.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to wildfires. Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would be required to comply with adopted local, regional, and State plans and regulations addressing wildfires. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, these regulations, in addition to the General Plan 2040 air quality response programs, would minimize the exposure of people in the Downtown Precise Plan Area to a significant risk of loss, injury, or death due to prevailing winds, and impacts would be *less than significant*.

Vegetation

The Downtown Precise Plan Area is characterized as built-out urban land that does not contain much natural vegetation. San Rafael Hill to the north of the Downtown Precise Plan Area does contain natural vegetation; however, that land is outside of the Downtown Precise Plan Area. Adoption of the proposed

project and implementation of the Downtown Precise Plan would incorporate the same plans and policies as General Plan 2040, including provisions in the San Rafael LHMP and San Rafael WPPAP, as well as goals, policies, and programs in the General Plan 2040. Such regulatory requirements and policies, in addition to vegetation management policies and programs, would minimize the exposure of people to a significant risk of loss, injury, or death due to vegetation characteristics, and impacts would be *less than significant*.

As determined in Impact Discussion FIRE-1, potential future development in the Downtown Precise Plan Area would be required to comply with the local, regional, and State plans and regulations adopted to ensure that proposed development would not—due to slope, prevailing winds, or vegetation—expose project occupants to pollutant concentrations from a wildfire, and the impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

FIRE-3	**Implementation of the proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) but would not exacerbate fire risk or result in temporary or ongoing impacts to the environment.**

General Plan 2040

As discussed in Chapter 3, Project Description, of this Draft EIR, roughly half the projected buildout in San Rafael would occur outside of the Downtown Precise Plan Area. As described in Impact Discussion FIRE-2, the EIR Study Area includes land within an SRA Moderate Fire Hazard Severity Zone and LRA Moderate and High Fire Hazard Severity Zones. Such development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development, and would utilize existing infrastructure. Existing infrastructure in San Rafael, including roadways, emergency water sources, water infrastructure, power lines, and other utilities, are capable of accommodating an increase in development and population. Therefore, the proposed project does not propose installation of large-scale new infrastructure as part of General Plan 2040 buildout. However, the proposed project does include goals, policies, and programs that require the maintenance of infrastructure such as fuel breaks in the EIR Study Area, most of which are included to ensure achievement of the WPPAP objectives. Previously listed goals, policies, and programs that outline the creation and maintenance of fuel breaks include Goal S-4, Program S-4.1D, and Program 4.1G, along with Program C-1.14D, Wildfire Action Plan Implementation, which would implement fuel break objectives of the WPPAP detailed in Impact Discussion FIRE-2.

The proposed Community Services and Infrastructure (CSI) Element contains goals, policies, and programs that require local planning and development decisions to consider infrastructure maintenance to reduce the risk and impact of wildfires. The following General Plan policy and programs would serve to minimize potential adverse impacts related to wildfire:

WILDFIRE

Goal CSI-4: Reliable, Efficiently Managed Infrastructure. Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- Policy CSI-4.14: Utility Undergrounding. Continue to pursue undergrounding of overhead utility lines, and support maintenance and replacement programs to reduce wildfire hazards.
  - Program CSI-4.14A: Funding for Undergrounding. Explore funding opportunities and financing mechanisms to accelerate the undergrounding of utilities, including Rule 20A and B funds, private funding, and assessment districts.
  - Program CSI-4.14B: Prioritizing of Undergrounding Projects. Develop a process to prioritize utility undergrounding projects. Among the factors to be considered are aesthetics, visibility, fire hazards, and vulnerability to flooding and sea level rise.
  - Program CSI-4.8C: Water Pressure and Storage. Work with MMWD to ensure that water pressure and storage remains adequate for fire-fighting, and to implement standards for new development that ensure adequate water flow.

General Plan 2040 does not propose the installation of large infrastructure projects; however, several policies and programs encourage the City to pursue upgrades and maintenance of such infrastructure. New development would, however, require minor alterations of utility systems to connect water, natural gas, and sewer line piping to new buildings and facilities. Although General Plan 2040 does not anticipate such infrastructure being needed, such infrastructure, if necessary, would be required to comply with the adopted State and local regulations to mitigate the impact of infrastructure on the environment. Furthermore, any development or redevelopment within a fire hazard severity zone and the WUI would be required to comply with building design standards in the California Building Code, Chapter 49 of the California Fire Code, the CPUC's fire regulations for electric utilities, and the San Rafael WPPAP, which would reduce the risk of wildfire due to installation and maintenance of infrastructure. Therefore, the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

Downtown Precise Plan

The Downtown Precise Plan Area is designated as urban, built-up land, with Moderate and High Fire Hazard Severity Zones located to the north in the WUI. Potential future development in the Downtown Precise Plan Area would not require the installation of new roads, emergency water sources, or power lines, which already exist in the Downtown Precise Plan Area. Similar to development outside of the Downtown Precise Plan Area, new development would require minor alterations of utility systems to connect water, natural gas, and sewer line piping to new buildings and facilities. Such new development would be required to comply with the State regulations and the General Plan 2040 goals, policies, and programs related to the installation and maintenance of infrastructure, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

FIRE-4 Implementation of the proposed project could expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, postfire slope instability, or drainage changes.

Catastrophic wildfire can create favorable conditions for other hazards, such as flooding and landslides during the rainy season. A project would result in a significant impact if—due to slopes, drainage patterns, or post-fire slope instability—it would expose people or structures to significant risks from landsides, debris flows, or flooding.

General Plan 2040

As discussed in Chapter 4.7, Geology and Soils, of this Draft EIR, the EIR Study Area contains areas susceptible to landslides and debris flows. The EIR Study Area varies, with rolling hills, valleys, and ridges that trend from the northwest to the southeast. Landslides have the potential to occur in the EIR Study Area, most notably on the steeper slopes on the western edge of the EIR Study Area, in addition to hilly areas surrounding China Camp State Park, Boyd Park, and Harry Barbier Memorial Park. There are both residential and commercial structures surrounding these landslide-prone areas in the EIR Study Area. With respect to flooding, and as described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, there are several areas in the EIR Study Area that are within the 100-year and 500-year floodplain, primarily along the eastern edge and in the central area of the EIR Study Area. In the event that a catastrophic wildfire were to occur in these areas with existing landslide and flooding susceptibility, the risk of such a hazard could be exacerbated post-fire. In addition, areas without an existing risk of landslide or flooding hazards that abut areas with risk may become susceptible to such hazards in the wake of a catastrophic wildfire.

While potential future development as a result of the proposed project is primarily expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing development, future projects could occur in areas either already prone to landslide or flooding hazards, or in areas which could be susceptible to landslide or flooding hazards post-fire. Therefore, potential future development in the EIR Study Area could contribute to postfire slope instability or drainage changes upstream. In the event that development is proposed downslope, the development proposal would have to comply with State and local regulations, such as the California Building Code and the SRMC building codes. For example, Section 1803 of the 2019 California Building Code requires a geotechnical investigation that must assess existing landslide susceptibility on a project site. Geotechnical review is also required as described in Section 4.18.1.1, Regulatory Framework, and as outlined in Appendix F, Geotechnical Review Matrix, of the proposed General Plan 2040. Recommendations of the geotechnical investigation, as they pertain to structural design and construction recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic considerations, must be incorporated into the design and construction of the development. Further, as identified in Impact Discussion FIRE-1, development in the EIR Study Area must also comply with best management practices regarding wildfire prevention, action, and recovery as outlined in the Marin ERP, the Marin EOP, the SRMC, the LHMP, and the WPPAP. All future development, regardless of the location, is required to comply with

adopted local, regional, and State plans and regulations addressing wildfire prevention which would minimize risks of potential wildfires and post-fire hazards.

In addition, the National Resource Conservation Service's Emergency Watershed Protection program from the United States Department of Agriculture, exists to provide emergency technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms and other natural disasters that impair a watershed. Standard practices of the Emergency Watershed Protection program include undertaking post-disaster emergency measures for runoff retardation and soil erosion prevention to safeguard lives and property from floods and the products of erosion on any watershed whenever a wildfire causes or has caused a sudden impairment of the watershed. Emergency Watershed Protection program funds address erosion related watershed impairments by supporting activities such as removing debris from stream channels, road culverts, and bridges; reshaping and protecting eroded banks; correcting damaged drainage facilities; repairing levees and structures; and reseeding damaged areas to establish vegetative cover on critically eroding lands.[49]

The primary purpose of the wildfire hazard policies discussed in this chapter, prevailing regulatory requirements, and the National Resource Conservation Service's Emergency Watershed Protection program, is to minimize risks from downslope or downstream flooding or landslides as a result of postfire slope instability. As such, compliance with these policies and regulatory requirements would ensure impacts from postfire instability would be *less than significant*.

Significance without Mitigation: Less than significant.

Downtown Precise Plan

With respect to flooding, and as described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, the majority of the Downtown Precise Plan Area is within the 100-year and 500-year floodplain, in the San Rafael Creek Watershed. This watershed begins in the surrounding mountain areas, which are within Moderate to High Fire Hazard Severity Zones, and drains down into the San Rafael Creek. The Downtown Precise Plan is not anticipated to create new slopes or be located downslope in such a manner that poses a risk to people or structures. Even though the Downtown Precise Plan Area does not have an existing risk of landslide hazards, it does abut areas with landslide risks (Boyd Memorial Park) that may become susceptible to such hazards in the wake of a catastrophic wildfire.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to wildfires and post-wildfire hazards. Implementation of the Downtown Precise Plan is required to comply with prevailing regulatory requirements to minimize risks from downslope or downstream landslides or flooding as a result of postfire slope instability. Therefore, the impacts described for the proposed General Plan 2040 would also apply to Downtown Precise Plan and the impact from postfire instability would be *less than significant.*

Significance without Mitigation: Less than significant.

[49] Natural Resources Conservation Service, Disaster Recovery Assistance, https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?cid=nrcseprd1361073, accessed March 24, 2020.

FIRE-5 Implementation of the proposed project could result in a cumulatively considerable impact to wildfire impacts.

As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, the cumulative setting includes growth within the EIR Study Area in combination with projected growth in the rest of Marin County and the surrounding region. Future development under the proposed project would not interfere with implementation of emergency response plans or result in significant wildfire-related impacts. Potential impacts associated with wildfires would be reduced through compliance with proposed policies and existing local, regional, and State regulations. Cumulative development in adjacent jurisdictions and unincorporated Marin County would be subject to the same State and regional regulations, as well as regional safety plans, such as the Marin CWPP and FireSafe Marin's Local Wildfire Prevention and Mitigation Initiative.

With respect to the implementation of the proposed project, wildfire hazards and the WUI are addressed in the goals, policies, and programs detailed in Impact Discussion FIRE-1, FIRE-2, and FIRE-3. Future development in the WUI would be required to incorporate fuel breaks, fire-resistant landscaping, adequate vegetation clearances around structures, and other vegetation management measures in the EIR Study Area. Additionally, development review would occur for each proposed project. Cumulative projects would be required to comply with the requirements of the California Building Code Chapter 7A, California Fire Code Chapter 49, PRC Sections 4291 et seq., and the SRA Fire Safe regulations for areas in the SRA. Furthermore, overhead power lines would be required to comply with the CPUC fire safety regulations. Although not required by CEQA, the proposed project includes policies and programs, detailed below, that would enhance public education programs to train the community in the EIR Study Area to prepare for and respond to emergency situations such as wildfire, which would increase regional education and, therefore, cumulative preparedness.

Goal S-6: Emergency Preparedness. Improve disaster preparedness, resiliency, response, and recovery.

- Policy S-6.2: Neighborhood Disaster Preparedness Programs. Encourage educational outreach to promote awareness and readiness among residents regarding disaster preparedness. Outreach and education should be targeted for each hazard type and risk area, including climate-related incidents. Community involvement is an essential part of resilience and recovery, and residents play an important role in disaster response.
  - Program S-6.2A: Educational and Training Programs. Support educational and training programs through the Police and Fire Departments and community-based organizations. These Programs include Community Emergency Response Teams (CERT), Citizens Police Academy, Neighborhood Response Groups (NRGs), and Voluntary Organizations Active in Disaster (VOAD) among others. Neighborhood teams should supplement City resources during emergency situations and can assist in disaster preparedness and mitigation efforts.
  - Program S-6.2E: Disaster Management Drills. Conduct emergency response drills to test the effectiveness of local procedures, including evacuation and emergency shelter drills in neighborhoods prone to flooding and wildfire.

WILDFIRE

Compliance with these requirements would reduce cumulative impacts related to wildfire hazards and emergency response. Accordingly, the proposed project would not cumulatively contribute to a cumulatively significant impact to wildfire impacts. The proposed project would not contribute to a cumulative increase in wildland fire hazards in the immediate vicinity of the Downtown Precise Plan Area or greater EIR Study Area, and the potential for cumulative impacts associated with wildfire hazards would be *less than significant*.

Significance without Mitigation: Less than significant.

5. Alternatives to the Proposed Project

The following discussion is intended to inform the public and decision makers of feasible alternatives to the proposed project that would avoid or substantially lessen any of the significant effects of the proposed project. The California Environmental Quality Act (CEQA) Guidelines set forth the intent and extent of alternatives analysis to be provided in an environmental impact report (EIR). Section 15126.6(a) of the CEQA Guidelines states that:

> *An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives, which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason*.

5.1 PURPOSE

The alternatives evaluated in this Draft EIR were developed consistent with Section 15126.6(b) of the CEQA Guidelines, which states that:

> *Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.*

5.2 PROJECT OBJECTIVES

As stated above, the range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the proposed project. As listed in Chapter 3, Project Description, of this Draft EIR, the primary purposes of the proposed project are to plan for the growth and conservation of San Rafael over a 20-year time horizon and to achieve a more equitable, sustainable, and prosperous future for all residents. Objectives related specifically to growth include focusing growth in the Downtown Precise Plan Area, capitalizing on transit opportunities in and around Priority Development Areas (PDAs), and streamlining future development that is consistent with the proposed project. This

requires extending the buildout horizon to year 2040 and updating goals, policies, and programs so that they meet current State requirements and community priorities. As part of this process, the City drafted 2040 Guiding Principles, which build upon the framework of the vision, guiding principles, and goals of the current General Plan 2020 and reflect the community's desires for San Rafael's future. The draft 2040 Guiding Principles will serve as the project objectives for the EIR. The Guiding Principles are organized in six distinct categories, as listed here and shown on Figure 3-4 in Chapter 3, Project Description, of this Draft EIR.

- Adapting to the Future. These principles include preparing for climate change, living green and sustainably, restoring natural systems, being prepared for disasters, embracing innovation, adapting to economic shifts, creating great public spaces, and accommodating change.
- Economic Vitality. These principles include investing in education, creating a positive business climate, promoting a thriving downtown, supporting entrepreneurship, encouraging diverse job growth, sustaining a healthy tax base, improving transportation and infrastructure, and nurturing arts and entertainment.
- Opportunity for All. These principles include reducing income inequality, ending homelessness, integrating diverse cultures, improving health and wellness, supporting educational excellence, and ensuring environmental justice.
- Housing Our Growing Community. These principles include conserving and modernizing existing housing, building more housing, increasing housing choices for the local workforce, meeting special housing needs, encouraging aging in community, improving housing affordability, and treating all residents fairly.
- Mobility. These principles include effectively managing congestion, improving bicycle and pedestrian modes, enhancing public transit, reducing neighborhood conflicts, improving safety for all modes of transportation, and using technology to improve efficiency.
- Building on Our Foundation. These principles recognize the City's strengths and its legacy of conserving open space, sustaining great neighborhoods, revitalizing Downtown, maintaining a strong sense of place, preserving its history, and providing quality public services.

5.3 SELECTION OF A REASONABLE RANGE OF ALTERNATIVES

Section 15126.6(c) of the CEQA Guidelines states:

> *The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.*

5.3.1 ALTERNATIVES ANALYSIS

Three project alternatives and the comparative merits of the alternatives are discussed in this section in accordance with the CEQA Guidelines. All the potential environmental impacts associated with adoption and implementation of the proposed project were found to be either less than significant without mitigation or less than significant with mitigation, except for impacts to air quality, greenhouse gas emissions, cultural resources (historic buildings), and transportation, which were found to be significant and unavoidable with mitigation measures at the program level. These significant and unavoidable impacts include the following:

- Impact AIR-2.2: Operational activities associated with potential future development could cumulatively contribute to the non-attainment designations of the San Francisco Bay Area Air Basin.
- Impact AIR-3.2. Operational activities associated with potential future development could expose sensitive receptors to substantial toxic air contaminant concentrations from nonpermitted sources.
- Impact CULT-1. Future development in San Rafael on sites that contain a historic resource may cause the demolition, destruction, or alteration of a historic resource such that the significance of the resource is "materially impaired." Such adverse changes or potential adverse changes in the significance of a CEQA-defined historic resource would constitute a significant impact.
- Impact GHG-1: Implementation of the proposed project may not meet the long-term GHG reduction goal under Executive Order S-03-05.
- Impact TRAN-1a Implementation of the proposed project would result in a significant land use VMT impact for Total VMT and Work VMT due to forecast land use growth through 2040, based on a comparison of the VMT rate increment for Total VMT Per Service Population and Work VMT Per Employee to the corresponding average baseline rates for the full nine-county Bay Area.
- Impact TRAN-1b: Implementation of the proposed project would result in a significant road network VMT impact due to the planned capacity of the roadway system.
- Impact TRAN-6: Implementation of the proposed project would cumulatively contribute to regional VMT.

The alternatives were selected because of their potential to further reduce and avoid these impacts. The alternatives to be analyzed in comparison to the proposed project include:

- Alternative A: No Project Alternative (Current General Plan)
- Alternative B: Greater Residential Growth
- Alternative C: Lower Residential Growth

The first alternative is the CEQA-required “No Project” Alternative, which assumes the current General Plan 2020 is carried through instead of the proposed project. Alternative B assumes more households, housing units, and population, and slightly fewer jobs, when compared to the proposed project. Alternative C assumes fewer households, housing units, and population, and a slightly greater number of jobs when compared to the proposed project.

5.3.2 ASSUMPTIONS AND METHODOLOGY

The alternatives analysis is presented as a comparative analysis to the proposed project. The development intensity for the alternatives varies from the proposed project. The estimated growth under each alternative, as well as the proposed project, is provided in Table 5-1.

TABLE 5-1 FORECASTED ADDITIONAL GROWTH FOR THE PROPOSED PROJECT AND ALTERNATIVES TO THE PROPOSED PROJECT

Category	Proposed Project	Alternative A: No Project	Alternative B: Greater Residential Growth	Alternative C: Lower Residential Growth
DOWNTOWN PRECISE PLAN AREA				
Households	2,100	340	2,550	1,535
Residential Units	2,200	360	2,690	1,615
Population	3,570	800	4,335	2,610
Jobs	2,020	435	2,000	2,050
REMAINDER OF EIR STUDY AREA				
Households	2,150	1,375	3,280	1,325
Residential Units	2,260	1,455	3,440	1,390
Population	5,340	2,615	8,165	3,215
Jobs	2,095	5,310	1,915	2,190
TOTAL EIR STUDY AREA				
Households	**4,250**	**1,715**	**5,830**	**2,860**
Residential Units	**4,460**	**1,815**	**6,130**	**3,005**
Population	**8,910**	**3,415**	**12,500**	**5,825**
Jobs	**4,115**	**5,745** [a]	**3,915**	**4,240**

Note:
[a] This figure represents the increment of job growth shown in the Transportation Authority of Marin's traffic model which is based on regional forecasts that will be outdated as soon as *Plan Bay Area* 2050 is adopted. This figure is not the increment of job growth assumed in General Plan 2020. Most of the job growth assumed in General Plan 2020 has already occurred. Therefore, this is a reasonable assumption about what would occur in the No Project conditions (CEQA Guidelines Section 15126.6(e)(3)(C)).
Source: City of San Rafael, 2020.

The alternatives analysis assumes that all applicable mitigation measures recommended for the proposed project and the proposed General Plan 2040 goals, policies, and programs would apply to Alternatives B and C, but would not apply to Alternative A. The following discussion compares the environmental impacts of the alternatives with those of the proposed project for each of the environmental topics analyzed in detail in Chapter 4, Environmental Analysis, of this Draft EIR. The impacts of each alternative are classified as fewer, similar to (or comparable to), or greater than the level of impacts associated with the proposed project. Table 5-2 summarizes the relative impacts of each of the alternatives compared to the proposed project.

TABLE 5-2 COMPARISON OF IMPACTS OF THE PROJECT ALTERNATIVES AND THE PROPOSED PROJECT

Topic	Proposed Project [a]	Alternative A: No Project	Alternative B: Greater Residential Growth	Alternative C: Lower Residential Growth
Aesthetics	LTS	<	=	<
Agriculture and Forestry Resources	LTS	=	=	=
Air Quality	SU	>	<	>
Biological Resources	LTS/M	>	=	=
Cultural and Tribal Cultural Resources	SU	>	>	<
Energy	LTS	>	=	>
Geology and Soils	LTS	=	=	=
Greenhouse Gas Emissions	SU	>	<	>
Hazards and Hazardous Materials	LTS/M	=	=	=
Hydrology and Water Quality	LTS	=	=	=
Land Use and Planning	LTS	=	=	=
Mineral Resources	LTS	=	=	=
Noise	SU	>	<	=
Population and Housing	LTS	=	=	=
Public Services and Recreation	LTS	<	>	<
Transportation	SU	>	<	>
Utilities and Service Systems	LTS	<	>	<
Wildfire	LTS	=	=	=

Notes:
[a] The impacts listed in this column represent the highest significance determination for each respective standard of significance.

LTS	Less Than Significant	<	Less impacts in comparison to the proposed project
LTS/M	Less Than Significant with Mitigation	=	Similar impacts in comparison to the proposed project
SU	Significant and Unavoidable	>	Greater impact in comparison to the proposed project

5.4 ALTERNATIVE A: NO PROJECT (CURRENT GENERAL PLAN)

5.4.1 DESCRIPTION

Pursuant to CEQA Guidelines Section 15126.6(e)(1), the No Project Alternative is required as part of the "reasonable range of alternatives" to allow decision makers to compare the impacts of approving the proposed project with the impacts of taking no action or not approving the proposed project. Consistent with CEQA Guidelines Section 15126.6(e)(3)(A), when the project is the revision of a plan, as in this case, the no project alternative will be the continuation of the existing plan. Under Alternative A, potential future development in San Rafael would continue to be subject to existing policies, regulations, development standards, and land use designations of the existing General Plan 2020 and Zoning Code.

As described in Chapter 3, Project Description, of this Draft EIR, the existing General Plan 2020 involved a major overhaul and modernization of the prior General Plan 2000 that was adopted in 1988. The City determined that General Plan 2020 provided a good foundation for the proposed General Plan 2040. General Plan 2020 went through a comprehensive review process, resulting in a broad range of community goals and policies. Many of the community issues vetted in General Plan 2020 are still relevant, well addressed, and do not require major changes. Therefore, while the proposed General Plan

2040 is not a major departure from General Plan 2020 in terms of its underlying vision and fundamental growth concepts, Alternative A would not incorporate the topics that are now required by State law and would not revise relevant policies and programs to meet those requirements.

Pursuant to CEQA Guidelines Section 15126.6(e)(3)(C), the City of San Rafael, acting as the lead agency, should analyze the impacts of the No Project Alternative by projecting what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved, based on current plans and consistent with available infrastructure and community services. Implementation of the No Project Alternative assumes that development growth throughout the city would remain unchanged until the buildout horizon year 2040, which is consistent with other regional plans, including *Plan Bay Area* 2040.

Future development permitted under the No Project Alternative would not increase development potential in San Rafael beyond what was considered in the existing General Plan 2020 and analyzed in the associated EIR (State Clearinghouse No. 2003052031), but rather assumes the remaining development growth shown in Table 5-1 would occur through 2040. No General Plan land use designations or Zoning District changes would be required to accommodate these uses. Table 5-3 shows the difference between 2020 to 2040 growth of the proposed project compared to Alternative A. As shown in Table 5-3, Alternative A would result in less residential growth and more job growth when compared to the proposed project.

TABLE 5-3 2020 TO 2040 GROWTH UNDER THE PROPOSED PROJECT AND ALTERNATIVE A

Category	Proposed Project	Alternative A: No Project	Change between the Proposed Project and Alternative A
Downtown Precise Plan Area			
Households	2,100	340	1,760 fewer households
Residential Units	2,200	360	1,840 fewer residential units
Population	3,570	800	2,770 fewer population
Jobs	2,020	435	1,585 fewer jobs
Remainder of EIR Study Area			
Households	2,150	1,375	775 fewer households
Residential Units	2,260	1,455	805 fewer residential units
Population	5,340	2,615	2,725 fewer population
Jobs	2,095	5,310	3,215 more jobs
Total EIR Study Area			
Households	**4,250**	**1,715**	**2,535 fewer households**
Residential Units	**4,460**	**1,815**	**2,645 fewer residential units**
Population	**8,910**	**3,415**	**5,495 fewer population**
Jobs	**4,115**	**5,745 [a]**	**1,630 more jobs**

Note:
[a] This figure represents the increment of job growth shown in the Transportation Authority of Marin's traffic model, which is based on regional forecasts that will be outdated as soon as *Plan Bay Area* 2050 is adopted. This figure is not the increment of job growth assumed in General Plan 2020. Most of the job growth assumed in General Plan 2020 has already occurred. Therefore, this is a reasonable assumption about what would occur in the No Project conditions (CEQA Guidelines Section 15126.6(e)(3)(C)).
Source: City of San Rafael, 2020.

Alternative A would not include the Downtown Precise Plan, which updates the 1993 *Our Vision of Downtown San Rafael and Our Implementation Strategy* (1993 Downtown Vision) and incorporates key

recommendations of the 2012 *San Rafael Downtown Station Area Plan*, as well as the 2017 *Downtown Parking and Wayfinding Study*, and other more focused projects, such as the 2019 *Third Street Rehabilitation Project* and the 2018 *Third and Hetherton Intersection Improvements*. The urban design, placemaking, historic preservation, transportation, parking, economic development, affordable housing, and antidisplacement strategies included in the Downtown Precise Plan would not be realized in Alternative A.

The alternatives analysis assumes that none of the applicable mitigation measures recommended for the proposed project would apply to Alternative A.

5.4.2 IMPACT DISCUSSION

The potential environmental impacts associated with Alternative A when compared to the proposed project are described herein.

5.4.2.1 AESTHETICS

As described in Chapter 4.1, Aesthetics, of this Draft EIR, the proposed project would not result in any significant impacts related to aesthetics and no mitigation measures are required.

Like the proposed project, potential future development in the EIR Study Area under Alternative A is anticipated to occur in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where future development would have a lesser impact on scenic vistas. The proposed General Plan 2040 does not include any new land use changes that would increase building height beyond what is previously accounted for under the current General Plan 2020, but would increase maximum height limits in the Downtown Precise Plan Area as part of the proposed Downtown Code. These changes would not be realized under Alternative A. While the areas of potential change under the proposed project are developed with a mix of buildings that range from 1 to 10 stories in height and views would continue to be visible between elements of the existing built environment and over lower-intensity areas, less development potentially obstructing views would occur and impacts to views of the existing scenic resources would be *less* when compared to the proposed project.

There are no State-designated scenic highways within, or in the vicinity of, the EIR Study Area. Therefore, implementation of either scenario would not damage existing scenic resources within a state scenic highway and impacts would be *similar.*

Applicable future projects under both scenarios would be subject to design review prior to project approval pursuant to San Rafael Municipal Code (SRMC) Chapter 14.25, Major Environmental and Design Review Permits, and comply with the various planning documents that govern scenic quality in the city, as described in Section 4.1.1, Regulatory Framework, in Chapter 4.1. However, Alternative A would not realize the proposed Community Design and Preservation Element that was reorganized as part of the proposed General Plan 2040 update to address five primary goals: a beautiful city, a sense of place, an improved public realm, quality construction and design, and protected cultural heritage. The policies emphasize protection of natural features, views, and the waterfront; improvements to gateways and

corridors; and upgrades to plazas, public spaces, and streetscapes. This element also covers street trees, landscaping, and wayfinding signage more comprehensively than General Plan 2020. Furthermore, principles of good design have been incorporated into the proposed project. Thus, unlike the proposed project, which includes these new policies, development under this alternative would not provide the same level of design consideration related to the visual character or quality of a project site and its surrounding; thus, aesthetic impacts related to these topics would be *greater* than those of the proposed project.

Similar to the proposed project, Alternative A would result in new lighting sources that could result in sources of glare. Potential future development under both scenarios would be required to comply with best management practices in CALGreen and SRMC provisions that ensure new land uses do not generate excessive light levels and reduce light and glare spillover from future development to surrounding land uses. Because Alternative A would result in less development than the proposed project, fewer impacts related to light or glare would occur and impacts would be *less* when compared to the proposed project.

Overall, development in the EIR Study Area under Alternative A would be less and would be guided by the current policies and regulations that guide development in San Rafael, and impacts related to aesthetics would be ***less*** when compared to the proposed project.

5.4.2.2 AGRICULTURE AND FORESTRY RESOURCES

As determined in Chapter 4.2, Agriculture and Forestry Resources, the proposed project would result in less-than-significant impacts to agricultural resources and no impacts to forest resources. No mitigation measures are required.

The EIR Study Area does not have any land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, nor are there any lands under an active Williamson Act Contract or zoned for forestry, timberland, or timberland production. The California Department of Conservation has designated approximately 2,000 acres of land as Farmland of Local Importance in the EIR Study Area, specifically used as grazing, in the northern unincorporated portion of the EIR Study Area.

The proposed project includes Policy LU-1.5, Development Beyond the Urban Service Area, which serves to retain areas outside of San Rafael's Urban Service Area boundary, but within the Planning Area, as agricultural or open space uses. Policy LU-1.5 would ensure that potential future development under implementation of the proposed project would not result in the conversion of Farmland of Local Importance in the EIR Study Area. Alternative A would continue to allow development under the existing General Plan 2020, which does not contain any goals, policies, or programs that address agricultural land in the EIR Study Area. However, the existing General Plan 2020 encourages development to occur in existing urbanized areas, which would reduce the likelihood that future development under Alternative A would occur in a location that would adversely impact agricultural land. Therefore, impacts would be ***similar*** under Alternative A when compared to the proposed project.

5.4.2.3 AIR QUALITY

As described in Chapter 4.3, Air Quality, of this Draft EIR, the proposed project would result in significant and unavoidable impacts during the operational phase even with implementation of Mitigation Measures AIR-2.2 and AIR-3.2. Implementation of Mitigation Measure AIR-2.1 3.1a, and AIR-3.1b, would reduce significant impact from construction to a less-than-significant level.

As described in Chapter 4.3, Air Quality, of this Draft EIR, implementation of the proposed project would not conflict with the 2017 *Clean Air Plan*, would pose no operational community risks or hazards, and would not generate any substantial odors. However, at a program level, implementation of the proposed project would result in significant and unavoidable impacts related to construction and operation of potential future development, as well as the cumulative contribution to the non-attainment designations of the San Francisco Bay Area Air Basin.

Alternative A would continue development as allowed under the existing General Plan 2020, which would result in less redevelopment in the EIR Study Area. Development under both scenarios would be subject to the Bay Area Air Quality Management District's (BAAQMD's) basic control measures for fugitive dust control and screening sizes. Additionally, future development under both scenarios could result in construction activities within 1,000 feet of residential and other sensitive land uses, thus, temporarily elevating concentrations of toxic air contaminants and diesel-$PM_{2.5}$ in the vicinity of sensitive land uses. While the regulatory setting mitigating construction impacts is the same, less development would occur under Alternative A; therefore, construction impacts would be *less* when compared to the proposed project.

Under Alternative A, reduced development would occur; therefore, less direct and indirect criteria air pollutant emissions from energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment) would occur. Under both scenarios, subsequent environmental review of applicable development projects would be required to assess potential impacts under BAAQMD's project-level thresholds. As demonstrated in Chapter 4.16, Transportation, the Total Vehicle Miles Traveled (VMT) Per Service Population and Work VMT Per Employee would be *greater* under Alternative A than the proposed project (29.5 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 17.5 Work VMT Per Employee compared to 16.9 Work VMT Per Employee). This is because the proposed project includes greater infill development in the PDAs and Transit Priority Areas (TPA), which would reduce VMT from automobiles. Alternative A would not include the goals, policies, and programs in the proposed project, which would concentrate development in existing urban areas and therefore could lessen the net benefit gained from siting future development near public transit and existing services. Therefore, as a result of reducing development, Alternative A would not necessarily reduce trips, which are the major source of criteria air pollutants from the proposed project. Therefore, while Alternative A would result in less overall development than the proposed project, air quality impacts from the operation of these uses would be considered *greater* when compared to the proposed project.

Same as the proposed project, Alternative A is not the type of project that would result in significant impacts from odor and impacts would be *similar* under both scenarios.

Overall, because Alternative A would result in less infill development that would create a higher VMT per capita, air quality impacts under Alternative A would be ***greater*** when compared to the proposed project.

5.4.2.4 BIOLOGICAL RESOURCES

As described in Chapter 4.4, Biological Resources, of this Draft EIR, the proposed project would result in less-than-significant impacts to biological resources with implementation of Mitigation Measures BIO-1 through BIO-4.

The EIR Study Area is not within any local, regional, or State habitat conservation plan areas. Therefore, neither scenario would conflict with the conservation strategy in any Habitat Conservation Plan or Natural Community Conservation Plan and impacts would be *similar*.

The City of San Rafael General Plan is the primary planning document for the City of San Rafael. The existing General Plan 2020 and the proposed revisions to policies and programs under the Conservation and Climate Change (C) Element are intended to ensure consistency between the General Plan and Zoning Ordinance and would not conflict with local policies and ordinances protecting biological resources because the General Plan is the overriding planning document for San Rafael. Accordingly, impacts to biological resources under Alternative A would be *similar* when compared to the proposed project.

Although potential future development under the proposed project could potentially affect animal and plant species identified as candidate, sensitive, or special-status species, proposed goals, policies, and programs; proposed mitigation measures; and adherence to all federal, State, and local regulations relating to biological resources would fully mitigate any potential impacts. The proposed project would also have a less-than-significant impact on riparian habitats, wetlands, and wildlife movement corridors because compliance with proposed goals, policies, and programs; proposed mitigation measures; and adherence to all federal, State, and local regulations relating to biological resources would fully mitigate any potential impacts. Further, potential future development under the proposed project would primarily occur as infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, which reduces the likelihood that special-status plant and animal species could be impacted. Infill development also reduces the likelihood that the riparian habitats, wetlands, and wildlife movement corridors could be impacted.

The existing General Plan 2020 encourages development to occur in existing urbanized areas, which would mean that Alternative A would also reduce the likelihood of development in areas of the EIR Study Area that are more likely to cause an adverse impact to a sensitive riparian habitat, wetland, or wildlife movement corridor. Mitigation Measure BIO-1 requires that as part of the discretionary review process for development projects in the EIR Study Area, the City shall require all project applicants to prepare and submit project-specific baseline biological resources assessments (BRA) if the project site(s) contain natural habitat with features that could support special-status species and other sensitive biological resources, as well as active nests of birds protected under the Migratory Bird Treaty Act and California Fish and Game Code. No similar requirement currently exists in the General Plan 2020 conditions and these standards would not be realized under the Alternative A scenario; therefore, impacts would be *greater* when compared to the proposed project.

The proposed project could introduce taller buildings in the Downtown Precise Plan Area, which would increase impacts to birds resulting from colliding into buildings when compared to Alternative A. However, tall buildings subjecting birds to collision would occur under either scenario. The proposed project's potential bird collision impacts would be fully mitigated with implementation of Mitigation Measure BIO-4b, which would set standards for potential future development involving buildings exceeding 5,000 square feet or structures taller than 30 feet tall. These standards would not be realized under the Alternative A scenario; therefore, impacts would be *greater* when compared to the proposed project.

In summary, impacts to biological resources from potential future development as allowed under Alternative A would be ***greater*** when compared to the proposed project.

5.4.2.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

As described in Chapter 4.5, Cultural and Tribal Cultural Resources, of this Draft EIR, the proposed project would result in less-than-significant impacts to cultural and tribal cultural resources with implementation of Mitigation Measures CULT-2 through CULT-4 and would result in a significant and unavoidable impact with implementation of Mitigation Measure CULT-1.

Under Alternative A, new development would continue throughout the city under existing plans and regulations. As explained in Chapter 4.5, there are existing prehistoric, architectural, historical, or archaeological resources in the EIR Study Area that could all be impacted by new demolition, inappropriate modification, or inappropriate new construction under the proposed project or Alternative A. Like the proposed project, Alternative A would be subject to the procedures of conduct following the discovery of human remains set forth in California Health and Safety Code, Public Resources Code and the California Code of Regulations. Because less development would occur under the Alternative A scenario, the potential to impact these resources would be *less* when compared to the proposed project. However, the proposed project includes Mitigation Measures which require the proposed General Plan 2040 to adopt additional programs that would further protect historic resources in the EIR Study Area. Under Alternative A, these programs would not be adopted. Therefore, Alternative A would have ***greater*** impacts to cultural resources as compared to the proposed project when following common protocols.

5.4.2.6 ENERGY

As described in Chapter 4.6, Energy, of this Draft EIR, the proposed project would not result in any significant impacts related to energy and no mitigation measures are required.

All development that occurs in the State is required to comply with best management practices regulated in the 2019 California Green Building Code and 2019 Building and Energy Efficiency Standards, which ensure new development would not result in the wasteful or inefficient use of energy. Further, new development would automatically be enrolled in renewable energy supplied by Marin Clean Energy. Such requirements and enrollment in MCE would be required under both the proposed project and under Alternative A. Additionally, neither the proposed project nor Alternative A would introduce a level of development and population growth that would be anticipated to necessitate the construction of new energy supply facilities or transmission infrastructure.

Less development would occur under the Alternative A scenario, so energy consumption from construction would be *less* when compared to the proposed project. However, newer buildings would be more energy efficient, thus energy impacts from buildings would be less energy efficient under Alternative A when compared to the proposed project. Ultimately, as described in the air quality discussion, energy use from VMT would be greater under Alternative A because less infill development in PDAs and TPAs would occur when compared to the proposed project. Therefore, overall energy demand and consumption would be ***greater*** under Alternative A when compared to the proposed project.

5.4.2.7 GEOLOGY AND SOILS

As described in Chapter 4.7, Geology and Soils, of this Draft EIR, the proposed project would result in less-than-significant impacts related to geology and soils with implementation of Mitigation Measure GEO-6.

Future development under both Alternative A and the proposed project would be subject to the same federal, State, and local regulations that address and prevent hazards associated with geology, soils, and seismicity. Both General Plan 2020 and proposed General Plan 2040 encourage development in urbanized settings where there is less likelihood for impacts from geologic hazards to occur. Although Alternative A would result in less overall development, compliance with existing regulations related to geologic and seismic safety would apply similarly to both future development under Alternative A and the proposed project; therefore, Alternative A would result in ***similar*** impacts when compared to the proposed project.

5.4.2.8 GREENHOUSE GAS EMISSIONS

As described in Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, the proposed project would result in two significant and unavoidable impacts despite implementation of Mitigation Measures GHG-1.

Implementation of the proposed project would result in significant and unavoidable greenhouse gas (GHG) emissions impacts when applying program-level thresholds for the forecast year 2040. With respect to GHG emissions from construction, new buildings constructed would be subject to the triennial updates to California's Building and Energy Efficiency Standards, which would presumably improve over time. While new buildings would be more energy efficient, there would be an overall increase in energy usage under the proposed project from construction due to the amount of proposed growth. Even with implementation of the 2017 Scoping Plan, the 2050 target identified under Executive Order S-03-05, is estimated to not be achievable without major advances in technology. The identification of these program-level impacts does not preclude the finding of less-than-significant impacts for subsequent projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance.

Alternative A would not necessarily result in a concentration of development and redevelopment in the Downtown Precise Plan and other urban portions of the EIR Study Area. Reducing development in the Downtown Precise Plan Area specifically could lessen the net benefit gained from siting more intense infill near public transit and result in a higher percentage of transit users that may rely on automobiles (as opposed to walking or biking). Therefore, as a result of reducing infill development near transit, Alternative A would not necessarily reduce trips, which are the major source of criteria GHG emissions from the proposed project. As described in the air quality discussion, the transportation sector is the greatest emitter of air pollutants, which also include GHG emissions. Therefore, because greater Total

VMT Per Capita and Work VMT Per Employee would occur under Alternative A, impacts related to GHG emissions would be *greater* when compared to the proposed project.

Overall, impacts from GHG emissions under Alternative A would be ***greater*** when compared to the proposed project.

5.4.2.9 HAZARDS AND HAZARDOUS MATERIALS

As described in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, the proposed project would result in less-than-significant impacts related to hazards and hazardous materials with implementation of Mitigation Measure HAZ-4.

As discussed in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, there are sites within the EIR Study Area and the Downtown Precise Plan Area that are included on a list of hazardous materials sites. Impact Discussion HAZ-4 of this Draft EIR concluded that implementation of the proposed project could result in construction and operation activities on sites with known hazardous materials and, as a result, create a significant hazard to the public or the environment. However, such impacts were deemed less-than-significant with the adoption of mitigation measures. Alternative A would occur as projected in the existing General Plan 2020. General Plan 2020 includes policies that were evaluated in the General Plan 2020 EIR as reducing the impact of locating future development on sites with known hazardous materials as less than significant. Policies of General Plan 2020 require potential future development abide by federal and State law and follow best management practices related to hazards and hazardous materials. Accordingly, Alternative A would have a *similar* impact when compared to the proposed project.

The proposed project was found to have a less-than-significant impact related to the routine transport, use, or disposal of hazardous waste, the release of hazardous waste, or the emitting of hazardous emissions or handling of hazardous materials in the proximity of an existing or proposed school. As further discussed in Chapter 4.9, Hazards and Hazardous Materials, the EIR Study Area is not located within an airport land use plan area for which potential future development could conflict, and implementation of the proposed project would not conflict with an adopted emergency response plan or emergency evacuation plan. Potential future development that could occur in the EIR Study Area from implementation of the proposed project would be required to comply with all federal, State, and local regulations pertaining to hazards and hazardous materials, and the proposed project includes goals, policies, and programs that would further reduce impacts related to hazardous materials. Development that would occur under Alternative A would be required to comply with the same federal and State regulations and would be required to comply with policies in the existing General Plan 2020, which reduce impacts related to hazardous materials. Therefore, Alternative A would have a ***similar*** impact when compared to the proposed project.

5.4.2.10 HYDROLOGY AND WATER QUALITY

As described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, the proposed project would not result in any significant impacts related to hydrology and water quality and no mitigation measures are required. Compliance with existing State and local regulations and procedures would ensure that pre-

and post-construction impacts to water quality would be less than significant. These regulations and procedures would be maintained under Alternative A.

Although Alternative A would result in less development overall, future development would likely occur within previously urbanized areas and would connect to existing drainage systems already in place and be subject to the same existing federal, State, and local regulations relating to hydrology and water quality, similar to the proposed project. Compliance with existing regulations would ensure that pre- and post-construction impacts to water quality be minimized as future development occurs. While the proposed project has updated and expanded the General Plan 2020 goals, policies, and programs related to hydrology and water quality, impacts to hydrology and water quality were found to be less-than-significant in the General Plan 2020 EIR, which suggests that existing General Plan 2020 policies would ensure future development would not have a hydrology or water quality impact on the environment. Because Alternative A involves continuing implementation of General Plan 2020, and because implementation of General Plan 2020 was found to have less-than-significant impacts on hydrology and water quality, Alternative A would have *similar* impacts to hydrology and water quality when compared to the proposed project.

5.4.2.11 LAND USE AND PLANNING

As described in Chapter 4.11, Land Use and Planning, of this Draft EIR, the proposed project would not result in any significant impacts related to land use and planning and no mitigation measures are required.

The existing General Plan 2020 was adopted with the purpose of harmonizing changes to existing developed areas in order to better serve community needs. While the proposed project would aim to improve connectivity and would not create physical barriers within existing communities, Alternative A would also support the integration of infill development and does not propose physical features that could divide a community. Accordingly, impacts would be *similar* under both scenarios.

Under Alternative A, development would continue to occur throughout the EIR Study Area under the existing General Plan 2020 and Zoning Code and would not conflict with these already approved standards. However, Alternative A would not result in implementation of the Downtown Precise Plan which would establish a detailed vision for the Downtown Precise Plan Area to guide future development. As discussed in Chapter 3, Project Description, of this Draft EIR, implementation of the Downtown Precise Plan would result in the adoption of a Downtown Code, which would amend the existing SRMC Zoning Code. The Downtown Code would be form-based, which means that the physical design of development would be heavily regulated while the land uses within the Downtown Precise Plan Area are not specifically regulated and are instead driven by market forces. Nonetheless, implementation of either development scenarios would not conflict with any applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be *similar*.

5.4.2.12 MINERAL RESOURCES

As described in Chapter 4.12, Mineral Resources, of this Draft EIR, the proposed project would not result in any significant impacts related to mineral resources and no mitigation measures are required.

As discussed in Chapter 4.12, Mineral Resources, of this Draft EIR, the San Rafael Rock Quarry and McNear Brickworks are the only designated mineral resource sites with local, regional, or State significance within the EIR Study Area. The site is located outside of the San Rafael city limits, but within the EIR Study Area. The proposed project was found to have a less-than-significant impact on the San Rafael Rock Quarry and McNear Brickworks because potential future development under the proposed project would occur in existing urbanized areas not located near the mineral resource site. Future development under Alternative A would occur in the locations discussed in the existing General Plan 2020, which include already urbanized portions of the EIR Study Area that would not result in an impact to the mineral resource site. Therefore, impacts to mineral resources would be ***similar*** to the proposed project under Alternative A.

5.4.2.13 NOISE AND VIBRATION

As described in Chapter 4.13, Noise and Vibration, of this Draft EIR, the proposed project would result in a less-than-significant impact with implementation of Mitigation Measures NOISE-1, NOISE-2a, and NOISE-2b.

Future development allowed under the proposed project would be subject to the standards of the SRMC and existing General Plan 2020, including those relating to the interface between residential and non-residential land uses. As specific uses are proposed for particular sites, project-level design, permitting, and/or environmental review would serve to ensure that individual uses would comply with the noise regulations. Future development under Alternative A would also be subject to these applicable standards. Because less construction would occur, noise and vibration from construction would be less under Alternative A when compared to the proposed project.

Alternative A would result in less development but would generate more Total VMT Per Capita and Work VMT Per Employee, which potentially generate more mobile sources of noise. Because construction is temporary, the increased noise impacts from the operational phase would result in ***greater*** noise impacts under Alternative A when compared to the proposed project.

5.4.2.14 POPULATION AND HOUSING

As described in Chapter 4.14, Population and Housing, of this Draft EIR, the proposed project would not result in any significant impacts related to population and housing, and no mitigation measures are required.

As described in Chapter 4.14, Population and Housing, of this Draft EIR, implementation of the proposed project would slightly exceed current regional projections. However, implementation of the proposed project was found to have a less-than-significant impact due to the focus on infill development in PDAs and TPAs, which is in alignment with the regional planning framework of *Plan Bay Area.* Further, the proposed project is the overriding policy document in the EIR Study Area, which plans for population growth that is reasonably foreseeable through 2040.

Alternative A would result in less population and housing; thus, the regional projections would not be exceeded under this scenario. However, Alternative A would not include the updated policy framework of

the proposed project that ensure adequate planning occurs to accommodate the future population increase and future development to extended buildout year through 2040. Therefore, impacts under Alternative A would be *greater* when compared to those under the proposed project.

Although less than the proposed project, Alternative A would allow a net increase of residential and non-residential uses in the EIR Study Area through 2040. Since implementation of Alternative A would result in a net increase in housing, like the proposed project, it would not require replacement housing outside the EIR Study Area. Therefore, impacts under Alternative A would be *similar* when compared to those of the proposed project.

In summary, while Alternative A would result in a different growth potential, impacts related to population and housing would be ***similar*** when compared to the proposed project.

5.4.2.15 PUBLIC SERVICES AND RECREATION

As described in Chapter 4.15, Public Services and Recreation, of this Draft EIR, impacts under the proposed project to fire protection services, police services, parks, schools, and libraries were found to be less than significant. No mitigation measures are required.

Alternative A would result in fewer new residents and jobs to the EIR Study Area, and therefore, would result in less demand on the public service providers that serve the EIR Study Area. Potential future development under Alternative A would be required to comply with all existing City regulations adopted to ensure that development pays its fair share of the cost of delivering services, providing park space and libraries, while payment of property taxes would ensure that future development pays its fair share towards schools. Overall, impacts under Alternative A would be ***less*** than those of the proposed project.

5.4.2.16 TRANSPORTATION

As described in Chapter 4.16, Transportation, of this Draft EIR, the proposed project would result in two significant and unavoidable impacts related to transportation despite implementation of Mitigation Measures TRAN-1a TRAN-1b. These significant and unavoidable impacts are related to the inability of the proposed project to achieve the VMT reduction by 2040 of 15 percent below the baseline (2019) regional average. While the proposed General Plan 2040 results in a reduction in VMT Per Service Population by 2040, the VMT threshold of 15 percent below the current regional average would not be met.

As discussed in Chapter 4.16, Transportation, of this Draft EIR, the proposed project would result in a significant VMT impact for Total VMT and Work VMT and would not result in a significant Home VMT impact. The proposed project would focus potential future development in existing urban areas, half of which would occur specifically in the Downtown Precise Plan Area, which is located in a TPA and is therefore served by public transportation. As such, the VMT generated by potential future development would be lower than if development were proposed in areas not served by public transportation. The proposed project also includes goals, policies, and programs that expand upon General Plan 2020 and to ensure the transportation system in the EIR Study Area is multi-modal and designed to increase bicycle and pedestrian access and safety. Impacts related to hazards from design features, emergency access, and conflicting with adopted plans or decrease performance standards, were found to be less than significant.

Alternative A would be implemented under the existing General Plan 2020, which does not include the proposed Downtown Precise Plan, which would concentrate roughly half of the development in the EIR Study Area through 2040 in a TPA in the Downtown Precise Plan Area. While the General Plan 2020 focuses on development in urbanized portions of the EIR Study Area, it does not concentrate development in the Downtown Precise Plan Area, and therefore VMT as a result of implementation of Alternative A would have be higher than under the proposed project. As demonstrated in Chapter 4.16, Transportation, the Total VMT Per Service Population and Work VMT Per Employee would be greater under Alternative A than the proposed project (29.5 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 17.5 Work VMT Per Employee compared to 16.9 Work VMT Per Employee). Therefore, Alternative A would result *greater* VMT impacts when compared to the proposed project.

Impacts to bicycles and pedestrians would be *greater* under Alternative A when compared to the proposed project since the proposed project's improvements to bicycle and pedestrian facilities, particularly in the Downtown Precise Plan Area, would not be implemented.

Alternative A would not include the multi-modal circulation improvements that are included in the proposed project and the less intense development would result in higher VMT per capita. Overall, transportation impacts in the EIR Study Area under Alternative A would be ***greater*** when compared to the proposed project.

5.4.2.17 UTILITIES AND SERVICE SYSTEMS

As described in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, impacts to sanitary wastewater, solid waste and stormwater infrastructure, and solid waste, under the proposed project, were found to be less than significant with the compliance of all applicable regulations. No mitigation measures are required.

Demand and consumption trends generally demonstrate that advances in recycling and solid waste reduction requirements, water-efficient regulations in building and landscaping, and stricter stormwater retention requirements, would reduce impact from existing conditions. However, it is assumed that because Alternative A would result in less overall development than the proposed project, less overall water demand, and less wastewater and solid waste generation, impacts under Alternative A would be ***less*** than those of the proposed project.

5.4.2.18 WILDFIRE

As described in Chapter 4.18, Wildfire, of this Draft EIR, the proposed project would not result in any significant impacts related to wildfire and no mitigation measures are required.

Chapter 4.18, Wildfire, of this Draft EIR determined that, due to compliance with applicable local, regional, and State regulations, the proposed project would not impair the implementation of an emergency response or emergency evacuation plan. Additionally, potential future development as a result of the proposed project would not be located in an area that would expose persons to wildfire or wildfire pollutants, nor would the project expose people or structures to significant risks, including downslope or

downstream flooding or landslides. Finally, the proposed project would not result in the installation or maintenance of any infrastructure that could exacerbate fire risk or result in impacts to the environment.

Alternative A would continue implementation of the existing General Plan 2020, which focuses development in urbanized areas similar to the proposed project. The existing General Plan 2020 also does not include any infrastructure-related projects and would not conflict with an emergency response or emergency evacuation plan. Therefore, implementation of Alternative A would have ***similar*** impacts when compared to the proposed project.

5.4.3 RELATIONSHIP OF THE ALTERNATIVES TO THE OBJECTIVES

Under Alternative A, the proposed project would not be implemented and therefore, this alternative would not accomplish any of the project objectives.

5.5 ALTERNATIVE B: GREATER RESIDENTIAL GROWTH

5.5.1 DESCRIPTION

Table 5-4 shows the difference between the growth projections of the proposed project compared to Alternative B. As shown in Table 5-4, Alternative B would result in an increase in the number of households, housing units, and population while slightly reducing the number of jobs in the EIR Study Area when compared to the proposed project.

TABLE 5-4 2020 TO 2040 GROWTH UNDER THE PROPOSED PROJECT AND ALTERNATIVE B

Category	Proposed Project	Alternative B: Greater Residential Growth	Change between the Proposed Project and Alternative B
Downtown Precise Plan Area			
Households	2,100	2,550	450 more households
Residential Units	2,200	2,690	490 more residential units
Population	3,570	4,335	765 more residents
Jobs	2,020	2,000	20 fewer jobs
Remainder of EIR Study Area			
Households	2,150	3,280	1,130 more households
Residential Units	2,260	3,440	1,180 more residential units
Population	5,340	8,165	2,825 more residents
Jobs	2,095	1,915	180 fewer jobs
Total EIR Study Area			
Households	**4,250**	**5,830**	**1,580 more households**
Residential Units	**4,460**	**6,130**	**1,670 more residential units**
Population	**8,910**	**12,500**	**3,590 more residents**
Jobs	**4,115**	**3,915**	**200 fewer jobs**

Source: City of San Rafael, 2020.

Because Alternative B would include more aggressive housing production, a potential loss of light industrial, office, and retail jobs is presumed. Alternative B includes all the 2015–2023 Housing Element sites, all of the residential sites evaluated in General Plan 2020, all of the potential housing and mixed-use sites identified in the Downtown Precise Plan, and residential development at various locations throughout the EIR Study Area. Alternative B presumes the same General Plan land use designations as the proposed project, except that two sites, one undeveloped and one industrial, would be re-designated as residential. Further, Alternative B would result in a high-density land use designation change on one site that is currently designated Hillside Resource Residential.

The alternatives analysis assumes that all applicable mitigation measures recommended for the proposed project and the proposed General Plan 2040 goals, policies, and programs would apply to Alternative B.

5.5.2 IMPACT DISCUSSION

The potential environmental impacts associated with Alternative B when compared to the proposed project are described herein.

5.5.2.1 AESTHETICS

As described in Chapter 4.1, Aesthetics, of this Draft EIR, the proposed project would not result in any significant impacts related to aesthetics and no mitigation measures are required.

Alternative B does not propose changes that would result in substantial differences from the proposed growth potential of the proposed project. Like the proposed project, potential future development under Alternative B would still be anticipated to occur in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where future development would have a lesser impact on scenic vistas. Under Alternative B, the proposed increases in maximum height in the Downtown Precise Plan Area would occur. As shown in Table 5-4, Alternative B would result in 490 additional residential units in the Downtown Precise Plan Area and 1,180 additional units in the remainder of the city, compared to the proposed project. This increase in development and height, regardless of the location of the development, would result in higher overall impacts to scenic vistas under Alternative B, therefore, impacts would be *greater* when compared to the proposed project.

Alternative B would, however, benefit from the updated and expanded goals, policies, and programs, as well as the proposed Downtown Precise Plan and the associated Downtown Code. Alternative B would be required to comply with best management practices and SRMC provisions that ensure new land uses do not generate excessive light levels and reduce light and glare spillover from future development to surrounding land uses. Therefore, impacts from light and glare under Alternative B would be *similar* when compared to the proposed project.

Overall, the addition of 1,670 new units in the EIR Study Area under this alternative that would be guided by the same regulations as the proposed project and would occur in the same development pattern, would result in ***similar*** aesthetics impacts when compared to the proposed project.

5.5.2.2 AGRICULTURE AND FORESTRY RESOURCES

As determined in Chapter 4.2, Agriculture and Forestry Resources, the proposed project would result in less-than-significant impacts to agricultural resources and no impacts to forestry resources. The addition of 1,670 new units in the EIR Study Area under this alternative that would be guided by the same regulations and in the same development pattern as the proposed project, would result in ***similar*** impacts to agricultural and forestry resources when compared to the proposed project.

5.5.2.3 AIR QUALITY

As described in Chapter 4.3, Air Quality, of this Draft EIR, the proposed project would result in significant and unavoidable impacts during the operational phase even with implementation of Mitigation Measures AIR-2.2 and AIR-3.2. Implementation of Mitigation Measure AIR-2.1 3.1a, and AIR-3.1b, would reduce significant impact from construction to a less-than-significant level.

As described in Chapter 4.3, Air Quality, of this Draft EIR, implementation of the proposed project would not conflict with the 2017 *Clean Air Plan*, would pose no operational community risks or hazards, and would not generate any substantial odors. However, at a program level, implementation of the proposed project would result in significant and unavoidable impacts related to construction and operation of potential future development, as well as the cumulative contribution to the non-attainment designations of the San Francisco Bay Area Air Basin. These impacts were not determined based on the number of units, but due to the program-level nature of the project, which would be the same under each scenario. Nonetheless, the increased amount of construction from Alternative B would have *greater* air quality impacts from fugitive dust when compared to the proposed project.

Under Alternative B, increased development would occur; therefore, more direct and indirect criteria air pollutant emissions from energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment) would occur. Similar to the proposed project, development that would occur under Alternative B would be infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Alternative B would benefit from the updated and expanded goals, policies, and programs in the proposed project aimed at reducing air pollutants and would concentrate development in existing urban areas and therefore Alternative B maintains the net benefit gained from siting future development near public transit and existing services. As described in the transportation discussion for this alternative (Section 5.5.2.16), the Total VMT Per Service Population and Work VMT Per Employee would be less under Alternative B than the proposed project (27.3 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 16.1 Work VMT Per Employee compared to 16.9 Work VMT Per Employee). The addition of housing does slightly increase the Home VMT Per Resident when compared to the proposed project (11.9 Home VMT Per Resident compared to 11.3 Home VMT Per Resident), but the reduction in Total VMT Per Capita would still reduce emissions when compared to the proposed project. Therefore, as a result of increasing housing and concentrating redevelopment in existing urban areas, Alternative B would reduce VMT, which are the major source of criteria air pollutants from the proposed project.

Overall, while Alternative B would result in more residential development than the proposed project, air quality impacts from the operation of these uses would be considered ***less*** when compared to the proposed project.

5.5.2.4 BIOLOGICAL RESOURCES

As discussed in Chapter 4.4, Biological Resources, of this Draft EIR, the impacts to biological resources from the proposed project are fully mitigable with implementation of Mitigation Measures BIO-1 through BIO-4. Alternative B does not propose any changes that would result in substantial differences from the proposed growth potential of the proposed project. The 490 additional residential units in the Downtown Precise Plan Area and the 1,180 additional units in the remainder of the city would still be anticipated to occur in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where future development would have a lesser impact on biological resources. Under Alternative B, Mitigation Measure BIO-1, which requires project-specific baseline biological resources assessments for projects on sites that contain natural habitat with features that could support special-status species and other sensitive biological resources, as well as active nests of birds protected under the Migratory Bird Treaty Act and California Fish and Game Code, and Mitigation Measure BIO-4b, which would set standards certain development with the greater likelihood of causing bird collisions would be implemented. Therefore, while development would be more intensive under Alternative B, development would be concentrated in the same urban areas, and additional measures to protect biological resources would be realized, thus potential future development under Alternative B would result in ***similar*** impacts when compared to the proposed project.

5.5.2.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

As described in Chapter 4.5, Cultural and Tribal Cultural Resources, of this Draft EIR, the proposed project would result in less-than-significant impacts to cultural and tribal cultural resources with implementation of Mitigation Measures CULT-2 through CULT-4 and would result in a significant and unavoidable impact with implementation of Mitigation Measure CULT-1.

Under Alternative B, new development would continue throughout the city under existing plans and regulations, and would be guided by the Downtown Precise Plan and Downtown Code, which would establish new standards in the Downtown Precise Plan Area to further protect historic buildings. As explained in Chapter 4.5, there are existing prehistoric, architectural, historical, or archaeological resources in the EIR Study Area that could all be impacted by new demolition, inappropriate modification, or inappropriate new construction under the proposed project or Alternative B. Like the proposed project, Alternative B would be subject to the procedures of conduct following the discovery of human remains set forth in California Health and Safety Code, Public Resources Code and the California Code of Regulations. Alternative B would also include all mitigating policies and programs that the proposed project includes to further ensure the protection of historic resources, particularly in the Downtown Precise Plan Area. However, because more development would occur under the Alternative B scenario, the potential to impact these resources would be *greater* when compared to the proposed project. Overall, Alternative B would have a ***greater*** impact to cultural resources when compared to the proposed project.

5.5.2.6 ENERGY

As described in Chapter 4.6, Energy, of this Draft EIR, the proposed project would not result in any significant impacts related to energy and no mitigation measures are required.

All development that occurs in the State is required to comply with best management practices regulated in the 2019 California Green Building Code and 2019 Building and Energy Efficiency Standards, which would be subject to the triennial updates that would presumably improve over time. Compliance with these regulations ensure new development would not result in the wasteful or inefficient use of energy. Further, new development would automatically be enrolled in renewable energy supplied by Marin Clean Energy. Such requirements and enrollment in MCE would be required under both the proposed project and under Alternative B. Additionally, neither the proposed project nor Alternative B would introduce a level of development and population growth that would be anticipated to necessitate the construction of new energy supply facilities or transmission infrastructure.

More development would occur under the Alternative B scenario, so energy consumption from construction would be *greater* when compared to the proposed project. However, newer buildings would be more energy efficient, thus energy impacts from older buildings would be less efficient when compared to the proposed project. This assumes that the increased development potential for the additional housing would possibly involve demolition of older, less energy-efficient buildings than under the proposed project. Ultimately, as described in the air quality discussion and transportation section, energy use from VMT would be less under Alternative B because more infill development in PDAs and TPAs would occur when compared to the proposed project. Therefore, overall energy efficiency would be *similar* under Alternative B when compared to the proposed project.

5.5.2.7 GEOLOGY AND SOILS

As described in Chapter 4.7, Geology and Soils, of this Draft EIR, the proposed project would have less-than-significant impacts related to geology and soils in the EIR Study Area. The impacts related to unknown unique paleontological resources are fully mitigable with implementation of Mitigation Measure GEO-6.

Future development under both Alternative B and the proposed project would occur in the same urban areas and would be subject to the same federal, State, and local regulations that address and prevent hazards associated with geology, soils, and seismicity. Although Alternative B would result in less overall development, compliance with existing regulations related to geologic and seismic safety would apply similarly to both future development under Alternative B and the proposed project; therefore, Alternative B would result in *similar* impacts when compared to the proposed project.

5.5.2.8 GREENHOUSE GAS EMISSIONS

As described in Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, the proposed project would result in significant and unavoidable impacts despite implementation of Mitigation Measures GHG-1.

Implementation of the proposed project would result in significant and unavoidable GHG emissions impacts when applying program-level thresholds for the forecast year 2040. With respect to GHG emissions from construction, new buildings constructed would be subject to the triennial updates to California's Building and Energy Efficiency Standards, which would presumably improve over time. While new buildings would be more energy efficient, there would be an overall increase in energy usage under the Alternative B from construction due to the amount of proposed growth. Even with implementation of the 2017 Scoping Plan, the 2050 target identified under Executive Order S-03-05, is estimated to not be achievable without major advances in technology. The identification of these program-level impacts does not preclude the finding of less-than-significant impacts for subsequent projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance.

Development that could occur under Alternative B would occur similar to the proposed project in the Downtown Precise Plan and other urban portions of the EIR Study Area. Alternative B would result in a higher concentration of development in these areas, which would result in the same net benefit gained from siting more intense infill near public transit and result in a higher percentage of transit users that may rely on automobiles (as opposed to walking or biking). Therefore, as a result of placing development in these urban areas, Alternative B would result in less VMT (27.3 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 16.1 Work VMT Per Employee compared to 16.9 Work VMT Per Employee), which are the major source of criteria GHG emissions from the proposed project. Therefore, while Alternative B would result in the same type of urban development with additional housing, GHG emissions impacts from operation would be considered *less* when compared to the proposed project due to the higher concentration of development.

Under Alternative B, future development in the EIR Study Area would continue to occur under the proposed General Plan 2040 and would result in infill development in PDAs and TPAs near transit as approximately half of the proposed project's development would. Accordingly, impacts related to consistency with the 2017 Scoping Plan, *Plan Bay Area,* and the City's *Climate Change Action Plan* as integrated into the General Plan, would be *similar* under both scenarios.

Overall, because Alternative B would result in more infill development and less VMT, impacts from GHG emissions under Alternative B would be ***less*** when compared to the proposed project.

5.5.2.9 HAZARDS AND HAZARDOUS MATERIALS

As described in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, the proposed project would result in less-than-significant impacts related to hazards and hazardous materials with implementation of Mitigation Measure HAZ-4.

As discussed in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, there are sites within the EIR Study Area and the Downtown Precise Plan Area that are included on a list of hazardous materials sites. Impact Discussion HAZ-4 of this Draft EIR concluded that implementation of the proposed project could result in construction and operation activities on sites with known hazardous materials and, as a result, create a significant hazard to the public or the environment. However, such impacts were deemed less-than-significant with the adoption of mitigation measures. Implementation of Alternative B would occur in approximately the same locations as the proposed project, but would result in a higher intensity

of development. Alternative B would comply with the same federal and State regulations as the proposed project and would still result in the adoption of the same goals, policies, and programs related to hazardous materials as the proposed project. Therefore, Alternative B would have a *similar* impact when compared to the proposed project.

The proposed project was found to have a less-than-significant impact related to the routine transport, use, or disposal of hazardous waste, the release of hazardous waste, or the emitting of hazardous emissions or handling of hazardous materials in the proximity of an existing or proposed school. As further discussed in Chapter 4.9, Hazards and Hazardous Materials, the EIR Study Area is not located within an airport land use plan area for which potential future development could conflict, and implementation of the proposed project would not conflict with an adopted emergency response plan or emergency evacuation plan. Potential future development that could occur in the EIR Study Area from implementation of the proposed project would be required to comply with all federal, State, and local regulations pertaining to hazards and hazardous materials, and the proposed project includes goals, policies, and programs which would further reduce impacts related to hazardous materials. Development that would occur under Alternative B would be required to comply with the same federal and State regulations and would be required to comply with the same goals, policies, and programs that reduce impacts related to hazardous materials. Therefore, Alternative B would have a ***similar*** impact when compared to the proposed project.

5.5.2.10 HYDROLOGY AND WATER QUALITY

As described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, the proposed project would not result in any significant impacts related to hydrology and water quality and no mitigation measures are required. Compliance with existing State and local regulations and procedures would ensure that pre- and post-construction impacts to water quality would be less than significant. These regulations and procedures would be maintained under Alternative B.

Although Alternative B would result in more development overall, future development would largely occur within previously urbanized areas similar to the proposed project and would connect to existing drainage systems already in place and be subject to the same existing federal, State, and local regulations relating to hydrology and water quality. Compliance with existing regulations would ensure that pre- and post-construction impacts to water quality be minimized as future development occurs. Overall, potential future development under Alternative B and the proposed project would be in the same urbanized environments and would be subject to the same existing regulations that address hydrology and water quality impacts. Future development under each scenario would benefit from the updated and expanded General Plan 2040 goals, policies, and programs related to hydrology and water quality and impacts would be considered ***similar*** when compared to the proposed project.

5.5.2.11 LAND USE AND PLANNING

As described in Chapter 4.11, Land Use and Planning, of this Draft EIR, implementation of the proposed project would result in less-than-significant impacts related to land use and planning.

The proposed project would aim to improve connectivity and would not create physical barriers within existing communities. While implementation of Alternative B would result in higher intensity of development, the integration of such development would be *similar* to that of the proposed project and does not propose physical features that could divide a community. Accordingly, impacts would be *similar* under both scenarios.

Under Alternative B, development would occur throughout the EIR Study Area under the proposed General Plan 2040 and Zoning Code while development in the Downtown Precise Plan Area would occur under the Downtown Precise Plan and associated Downtown Code. Such development would be the same as under the proposed project and therefore implementation of either development scenario would not conflict with any applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be ***similar*** when compared to the proposed project.

5.5.2.12 MINERAL RESOURCES

As discussed in Chapter 4.12, Mineral Resources, of this Draft EIR, the San Rafael Rock Quarry and McNear Brickworks are the only designated mineral resource sites with local, regional, or State significance within the EIR Study Area. The site is located outside of the San Rafael city limits, but within the EIR Study Area. The proposed project was found to have a less-than-significant impact on the San Rafael Rock Quarry and McNear Brickworks because potential future development under the proposed project would occur in existing urbanized areas not located near the mineral resource site. Future development under Alternative B would occur in the locations discussed in the existing General Plan 2020, which include already urbanized portions of the EIR Study Area that would not result in an impact to the mineral resource site. Therefore, impacts to mineral resources would be ***similar*** to the proposed project under Alternative B.

5.5.2.13 NOISE AND VIBRATION

As described in Chapter 4.13, Noise and Vibration, of this Draft EIR, the proposed project would result in a less-than-significant impact with implementation of Mitigation Measures NOISE-1, NOISE-2a, and NOISE-2b.

Future development allowed under the proposed project would be subject to the standards of the SRMC as well as goals, policies, and programs proposed in General Plan 2040, including those relating to the interface between residential and non-residential land uses. As specific uses are proposed for particular sites, project-level design, permitting, and/or environmental review would serve to ensure that individual uses would comply with the noise regulations. Future development under Alternative B would also be subject to these applicable standards. Impacts would be *similar* under both scenarios in this regard.

Alternative B would result in higher-intensity development, which would result in more construction but less VMT. Because construction is temporary, the reduced noise from the operational phase, would result in ***less*** noise impacts under Alternative B when compared to the proposed project.

5.5.2.14 POPULATION AND HOUSING

As described in Chapter 4.14, Population and Housing, of this Draft EIR, the proposed project would not result in any significant impacts related to population and housing, and no mitigation measures are required.

As described in Chapter 4.14, Population and Housing, of this Draft EIR, implementation of the proposed project would slightly exceed current regional projections. However, implementation of the proposed project was found to have a less-than-significant impact due to the focus on infill development in PDAs and TPAs, which is in alignment with the regional planning framework of *Plan Bay Area*. Further, the proposed project is the overriding policy document in the EIR Study Area which plans for population growth that is reasonably foreseeable through 2040.

Alternative B would result in more population and housing than the proposed project; thus, the regional projections would be exceeded more than the proposed project under this scenario, but would still be in alignment with the regional planning framework of *Plan Bay Area*. Alternative B would include the updated policy framework of the proposed project, which ensures adequate planning occurs to accommodate the future population increase and future development. Therefore, impacts under Alternative B would be *similar* to those under the proposed project.

Alternative B would allow for a higher net increase of residential and non-residential development in the EIR Study Area through 2040. Alternative B would result in more housing than the proposed project and therefore it would not require replacement housing outside the EIR Study Area. Therefore, impacts under Alternative B would be *similar* to those of the proposed project.

In summary, while Alternative B would result in a different growth potential, impacts related to population and housing would be ***similar*** when compared to the proposed project.

5.5.2.15 PUBLIC SERVICES AND RECREATION

As described in Chapter 4.15, Public Services and Recreation, of this Draft EIR, impacts under the proposed project to fire protection services, police services, parks, schools, and libraries, were found to be less than significant. No mitigation measures are required.

Alternative B would result in more new residents in the EIR Study Area than the proposed project, and therefore, would result in more demand on the public service providers that serve the EIR Study Area. Potential future development under Alternative B would be required to comply with all existing and proposed new City regulations adopted to ensure that development pays its fair share of the cost of delivering services, providing park space, and libraries. As discussed in Chapter 4.15, the City has recently upgraded critical public service facilities and exceeds the existing parkland standard in General Plan 2020. However, because Alternative B would increase overall development which would result in an increase in demand. Therefore, impacts under Alternative B would be ***greater*** when compared to the proposed project.

5.5.2.16 TRANSPORTATION

As described in Chapter 4.16, Transportation, of this Draft EIR, the proposed project would result in two significant and unavoidable impacts related to transportation despite implementation of Mitigation Measures TRAN-1a and TRAN-1b. These significant and unavoidable impacts are related to the inability of the proposed project to achieve the VMT reduction by 2040 of 15 percent below the baseline (2019) regional average. While the proposed General Plan 2040 results in a reduction in VMT Per Service Population by 2040, the VMT threshold of 15 percent below the current regional average would not be met.

As discussed in Chapter 4.16, Transportation, of this Draft EIR, the proposed project would result in a significant VMT impact for Total VMT and Work VMT and would not result in a significant Home VMT impact. Both scenarios would result in similar development patterns, but Alternative B would yield more residential units. Therefore, the Total VMT Per Service Population and Work VMT Per Employee would be *less* under Alternative B than the proposed project (27.3 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 16.1 Work VMT Per Employee compared to 16.9 Work VMT Per Employee).

Both Alternative B and the proposed project would include the improvements recognized in the Downtown Precise Plan and updated goals, policies, and programs that expand upon General Plan 2020 and to ensure the transportation system in the EIR Study Area is multi-modal and designed to increase bicycle and pedestrian access and safety. Impacts related to hazards from design features, emergency access, and conflicting with adopted plans or decrease performance standards, were found to be less than significant.

Overall, transportation impacts in the EIR Study Area under Alternative B would be ***less*** when compared to the proposed project.

5.5.2.17 UTILITIES AND SERVICE SYSTEMS

As described in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, impacts to sanitary wastewater, solid waste and stormwater infrastructure, and solid waste, under the proposed project, were found to be less than significant with the compliance of all applicable regulations. No mitigation measures are required.

Since Alternative B would result in greater development, and thus, more water demand, wastewater, and solid waste generation, impacts under the Alternative B would be ***greater*** when compared to the proposed project.

5.5.2.18 WILDFIRE

Chapter 4.18, Wildfire, of this Draft EIR determined that, due to compliance with applicable local, regional, and State regulations, the proposed project would not impair the implementation of an emergency response or emergency evacuation plan. Additionally, potential future development as a result of the proposed project would not be located in an area that would expose persons to wildfire or wildfire pollutants, nor would the project expose people or structures to significant risks, including downslope or

downstream flooding or landslides. Finally, the proposed project would not result in the installation or maintenance of any infrastructure that could exacerbate fire risk or result in impacts to the environment.

Alternative B would result in higher-density development that would be located in the same locations as in the proposed project; would adopt the same goals, policies, and programs to reduce the risk of wildfire; and would not include the installation or maintenance of any infrastructure projects. Therefore, implementation of Alternative B would have ***similar*** impacts to the proposed project.

5.5.3 RELATIONSHIP OF THE ALTERNATIVES TO THE OBJECTIVES

As listed in Section 5.2, the primary purposes of the proposed project are to plan for the growth and conservation of San Rafael over a 20-year time horizon and to achieve a more equitable, sustainable, and prosperous future for all residents. This requires extending the buildout horizon to year 2040 and updating goals, policies, and programs so that they meet current State requirements and community priorities. As part of this process, the City drafted 2040 Guiding Principles, which build upon the framework of the vision, guiding principles, and goals of the current General Plan 2020 and reflect the community's desires for San Rafael's future. Big-picture objectives related specifically to growth include focusing growth in the Downtown Precise Plan Area, capitalizing on transit opportunities in and around PDAs, and streamlining future development that is consistent with the proposed project.

Alternative B would result in more housing and population growth in the EIR Study Area when compared to the proposed project. However, such growth would generally occur in the same locations as included in the proposed project, which were chosen based on their appropriateness in fulfilling the City's goals of focusing infill development in existing urban areas near public transportation. Therefore, Alternative B would meet the project objectives.

5.6 ALTERNATIVE C: LOWER RESIDENTIAL GROWTH

5.6.1 DESCRIPTION

Table 5-5 shows the difference between the 2020 to 2040 growth projections of the proposed project compared to Alternative C. As shown in Table 5-5, Alternative C would reduce the number of households, housing units, and population while slightly increasing the number of jobs in the EIR Study Area when compared to the proposed project.

TABLE 5-5 2020 TO 2040 GROWTH UNDER THE PROPOSED PROJECT AND ALTERNATIVE C

Category	Proposed Project	Alternative C: Lower Residential Growth	Change between the Proposed Project and Alternative C
Downtown Precise Plan Area			
Households	2,100	1,535	565 fewer households
Residential Units	2,200	1,615	585 fewer residential units
Population	3,570	2,610	960 fewer residents
Jobs	2,020	2,050	30 more jobs
Remainder of EIR Study Area			

Households	2,150	1,325	865 fewer households
Residential Units	2,260	1,390	870 fewer residential units
Population	5,340	3,215	2,125 fewer residents
Jobs	2,095	2,190	95 more jobs
Total EIR Study Area			
Households	**4,250**	**2,860**	**1,390 fewer households**
Residential Units	**4,460**	**3,005**	**1,455 fewer residential units**
Population	**8,910**	**5,825**	**3,085 fewer residents**
Jobs	**4,115**	**4,240**	**125 more jobs**

Source: City of San Rafael, 2020.

Alternative C presumes the same General Plan land use designations as the proposed project and differs only in the presumed rate of growth. Alternative C excludes several 2015–2023 Housing Element sites and Downtown Precise Plan sites included in the proposed project. This alternative would convert less commercial acreage to housing, which results in a slightly higher total of jobs anticipated by 2040.

The alternatives analysis assumes that all applicable mitigation measures recommended for the proposed project and the proposed General Plan 2040 goals, policies, and programs would apply to Alternative C.

5.6.2 IMPACT DISCUSSION

The potential environmental impacts associated with Alternative C when compared to the proposed project are described herein.

5.6.2.1 AESTHETICS

As described in Chapter 4.1, Aesthetics, of this Draft EIR, the proposed project would not result in any significant impacts related to aesthetics and no mitigation measures are required.

Alternative C does not propose any changes that would result in substantial differences from the proposed growth potential of the proposed project. Potential future development would still be anticipated to occur in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where future development would have a lesser impact on scenic vistas. Under Alternative C, the proposed increases in maximum height in the Downtown Precise Plan Area would still occur. However, Alternative C would result in 585 fewer residential units in the Downtown Precise Plan Area and the 870 fewer units in the remainder of the city, compared to the proposed project, and therefore, overall impacts to scenic vistas under Alternative C would be *less* when compared to the proposed project.

Alternative C would benefit from the updated and expanded goals, policies, and programs, as well as the proposed Downtown Precise Plan and the associated Downtown Code. Alternative C would be required to comply with best management practices and SRMC provisions that ensure new land uses do not generate excessive light levels and reduce light and glare spillover from future development to surrounding land uses. Therefore, impacts from light and glare under Alternative C would be *similar* when compared to the proposed project.

Overall, the reduction of 1,390 new units and addition of 125 more jobs in the EIR Study Area under this alternative that would be guided by the same regulations as the proposed project and would occur in the same development pattern, and would result in ***less*** aesthetics impacts when compared to the proposed project.

5.6.2.2 AGRICULTURE AND FORESTRY RESOURCES

As determined in Chapter 4.2, Agriculture and Forestry Resources, the proposed project would result in less-than-significant impacts to agricultural resources and no impacts to forestry resources. The reduction of 1,390 new units and addition of 125 more jobs in the EIR Study Area under this alternative that would be guided by the same regulations and in the same development pattern as the proposed project, would result in ***similar*** impacts to agricultural and forestry resources when compared to the proposed project.

5.6.2.3 AIR QUALITY

As described in Chapter 4.3, Air Quality, of this Draft EIR, the proposed project would result in significant and unavoidable impacts during the operational phase even with implementation of Mitigation Measures AIR-2.2 and AIR-3.2. Implementation of Mitigation Measure AIR-2.1 3.1a, and AIR-3.1b, would reduce significant impact from construction to a less-than-significant level.

As described in Chapter 4.3, Air Quality, of this Draft EIR, implementation of the proposed project would not conflict with the 2017 *Clean Air Plan*, would pose no operational community risks or hazards, and would not generate any substantial odors. However, at a program level, implementation of the proposed project would result in significant and unavoidable impacts related to construction and operation of potential future development, as well as the cumulative contribution to the non-attainment designations of the San Francisco Bay Area Air Basin. The increased amount of construction from Alternative C would have *greater* air quality impacts from fugitive dust when compared to the proposed project.

Under Alternative C, less development would occur; therefore, less direct and indirect criteria air pollutant emissions from energy (e.g., natural gas use), and area sources (e.g., aerosols and landscaping equipment) would occur. Similar to the proposed project, development that would occur under Alternative C would be infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development. Alternative C would benefit from the updated and expanded goals, policies, and programs in the proposed project aimed at reducing air pollutants and would concentrate development in existing urban areas and therefore Alternative C maintains the net benefit gained from siting future development near public transit and existing services. As described in the transportation discussion for this alternative (Section 5.6.2.16), the Total VMT Per Service Population and Work VMT Per Employee would be *slightly greater* under Alternative C than the proposed project (28.3 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 17.3 Work VMT Per Employee compared to 16.9 Work VMT Per Employee). The reduction of 1,390 new units and addition of 125 more jobs does slightly decrease the Home VMT Per Resident when compared to the proposed project (11.2 Home VMT Per Resident compared to 11.3 Home VMT Per Resident). Therefore, this combination of reduced housing and increased jobs in Alternative C would result in increased but similar VMT, which are the major source of criteria air pollutants from the proposed project.

Overall, while Alternative C would result in less housing and more employment than the proposed project, air quality impacts from the operation of these uses would be considered ***greater*** due to increased VMT when compared to the proposed project.

5.6.2.4 BIOLOGICAL RESOURCES

As discussed in Chapter 4.4, Biological Resources, of this Draft EIR, the impacts to biological resources from the proposed project are fully mitigable with implementation of Mitigation Measures BIO-1 through BIO-4. Alternative C does not propose any changes that would result in substantial differences from the proposed growth potential of the proposed project. The 585 fewer residential units and 30 more jobs in the Downtown Precise Plan Area and the 870 fewer units and 95 more jobs in the remainder of the city would still be anticipated to occur in the form of infill/intensification on sites either already developed and/or underutilized, and/or in close proximity to existing development, where future development would have a lesser impact on biological resources. Under Alternative C, Mitigation Measure BIO-1, which requires project-specific baseline biological resources assessments for projects on sites that contain natural habitat with features that could support special-status species and other sensitive biological resources, as well as active nests of birds protected under the Migratory Bird Treaty Act and California Fish and Game Code, and Mitigation Measure BIO-4b, which would set standards certain development with the greater likelihood of causing bird collisions would be implemented. Therefore, while development would be more intensive under Alternative C, development would be concentrated in the same urban areas, and additional measures to protect biological resources would be realized, thus potential future development under Alternative C would result in ***similar*** impacts when compared to the proposed project.

5.6.2.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

As described in Chapter 4.5, Cultural and Tribal Cultural Resources, of this Draft EIR, the proposed project would result in less-than-significant impacts to cultural and tribal cultural resources with implementation of Mitigation Measures CULT-2 through CULT-4 and would result in a significant and unavoidable impact with implementation of Mitigation Measure CULT-1.

Under Alternative C, new development would continue throughout the city under existing plans and regulations, and would be guided by the Downtown Precise Plan and Downtown Code, which would establish new standards in the Downtown Precise Plan Area to further protect historic buildings. As explained in Chapter 4.5, there are existing prehistoric, architectural, historical, or archaeological resources in the EIR Study Area that could all be impacted by new demolition, inappropriate modification, or inappropriate new construction under the proposed project or Alternative C. Like the proposed project, Alternative C would be subject to the procedures of conduct following the discovery of human remains set forth in California Health and Safety Code, Public Resources Code and the California Code of Regulations. Alternative C would also include all mitigating policies and programs that the proposed project includes to further ensure the protection of historic resources, particularly in the Downtown Precise Plan Area. However, because less development would occur under the Alternative C scenario, the potential to impact these resources would be *less* when compared to the proposed project. Overall, Alternative C would have ***fewer*** impacts to cultural resources when compared to the proposed project.

5.6.2.6 ENERGY

As described in Chapter 4.6, Energy, of this Draft EIR, the proposed project would not result in any significant impacts related to energy and no mitigation measures are required.

All development that occurs in the State is required to comply with best management practices regulated in the 2019 California Green Building Code and 2019 Building and Energy Efficiency Standards, which would be subject to the triennial updates that would presumably improve over time. Compliance with these regulations ensure new development would not result in the wasteful or inefficient use of energy. Further, new development would automatically be enrolled in renewable energy supplied by Marin Clean Energy. Such requirements and enrollment in MCE would be required under both the proposed project and under Alternative C. Additionally, neither the proposed project nor Alternative C would introduce a level of development and population growth that would be anticipated to necessitate the construction of new energy supply facilities or transmission infrastructure.

Less development would occur under the Alternative C scenario, so energy consumption from construction would be *less* when compared to the proposed project. However, newer buildings would be more energy efficient, thus energy impacts from older buildings would be less energy efficient when compared to the proposed project. This assumes that the increased development potential for the additional housing and jobs under the proposed project would possibly involve the demolition of older, less energy-efficient buildings than the proposed project. Ultimately, as described in the air quality discussion and transportation section for this alternative, energy use from VMT would be increased and therefore, while Alternative C would result in less housing and more employment than the proposed project, energy impacts would be considered ***greater*** due to increased VMT when compared to the proposed project.

5.6.2.7 GEOLOGY AND SOILS

As described in Chapter 4.7, Geology and Soils, of this Draft EIR, the proposed project would have less-than-significant impacts related to geology and soils in the EIR Study Area. The impacts related to unknown unique paleontological resources are fully mitigable with implementation of Mitigation Measure GEO-6.

Future development under both Alternative C and the proposed project would occur in the same urban areas and would be subject to the same federal, State, and local regulations that address and prevent hazards associated with geology, soils, and seismicity. Although Alternative C would result in *less* overall development, compliance with existing regulations related to geologic and seismic safety would apply similarly to both future development under Alternative C and the proposed project; therefore, Alternative C would result in ***similar*** impacts when compared to the proposed project.

5.6.2.8 GREENHOUSE GAS EMISSIONS

As described in Chapter 4.8, Greenhouse Gas Emissions, of this Draft EIR, the proposed project would result in two significant and unavoidable impacts despite implementation of Mitigation Measures GHG-1.

Implementation of the proposed project would result in significant and unavoidable GHG emissions impacts when applying program-level thresholds for the forecast year 2040. With respect to GHG emissions from construction, new buildings constructed would be subject to the triennial updates to California's Building and Energy Efficiency Standards, which would presumably improve over time. New buildings would be more energy efficient and there would be an overall decrease in energy usage under the Alternative C from construction due to the reductions of proposed growth. Even with implementation of the 2017 Scoping Plan, the 2050 target identified under Executive Order S-03-05, is estimated to not be achievable without major advances in technology. The identification of these program-level impacts does not preclude the finding of less-than-significant impacts for subsequent projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance.

Development that could occur under Alternative C would occur similar to the proposed project in the Downtown Precise Plan and other urban portions of the EIR Study Area. Alternative C would result in a higher concentration of development in these areas, which would result in the same net benefit gained from siting more intense infill near public transit and result in a higher percentage of transit users that may rely on automobiles (as opposed to walking or biking). Therefore, as a result of placing development in these urban areas, Alternative C would result in slightly increased VMT (28.3 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 16.1 Work VMT Per Employee compared to 17.3 Work VMT Per Employee), which are the major source of criteria GHG emissions from the proposed project. While the Work VMT Per Employee is greater than the proposed project, the Total VMT Per Capita is essentially the same. Therefore, while Alternative C would result in the same type of urban development with fewer housing and more jobs, GHG emissions impacts from operation would be considered *similar* when compared to the proposed project due to the higher concentration of development.

Under Alternative C, future development in the EIR Study Area would continue to occur under the proposed General Plan 2040 and would result in infill development in PDAs and TPAs near transit as approximately half of the proposed project's development would. Accordingly, impacts related to consistency with the 2017 Scoping Plan, *Plan Bay Area,* and the City's *Climate Change Action Plan* as integrated into the General Plan, would be *similar* under both scenarios.

Overall, because Alternative C would result in less infill development but slightly greater VMT, impacts from GHG emissions under Alternative C would be ***greater*** when compared to the proposed project.

5.6.2.9 HAZARDS AND HAZARDOUS MATERIALS

As described in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, the proposed project would result in less-than-significant impacts related to hazards and hazardous materials with implementation of Mitigation Measure HAZ-4.

As discussed in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, there are sites within the EIR Study Area and the Downtown Precise Plan Area that are included on a State recognized list of hazardous materials sites. Impact Discussion HAZ-4 of this Draft EIR concluded that implementation of the proposed project could result in construction and operation activities on sites with known hazardous materials and, as a result, create a significant hazard to the public or the environment. However, such impacts were deemed less-than-significant with the adoption of mitigation measures. Implementation of

Alternative C would occur in approximately the same locations as the proposed project but would result in a different mix of development (less residential and more jobs). Therefore, development under Alternative C would have a *similar* probability of being located on active hazardous materials sites. Alternative C would comply with the same federal and State regulations as the proposed project and would still result in the adoption of the same goals, policies, and programs related to hazardous materials as the proposed project. Therefore, Alternative C would have a *similar* impact when compared to the proposed project.

The proposed project was found to have a less-than-significant impact related to the routine transport, use, or disposal of hazardous waste, the release of hazardous waste, or the emitting of hazardous emissions or handling of hazardous materials in the proximity of an existing or proposed school. As further discussed in Chapter 4.9, Hazards and Hazardous Materials, the EIR Study Area is not located within an airport land use plan area for which potential future development could conflict, and implementation of the proposed project would not conflict with an adopted emergency response plan or emergency evacuation plan. Potential future development which could occur in the EIR Study Area from implementation of the proposed project would be required to comply with all federal, State, and local regulations pertaining to hazards and hazardous materials, and the proposed project includes goals, policies, and programs which would further reduce impacts related to hazardous materials. Development that would occur under Alternative C would be required to comply with the same federal and State regulations, and would be required to comply with the updated and expanded General Plan 2040 goals, policies, and programs that reduce impacts related to hazardous materials. Therefore, Alternative C would have a ***similar*** impact when compared to the proposed project.

5.6.2.10 HYDROLOGY AND WATER QUALITY

As described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, the proposed project would not result in any significant impacts related to hydrology and water quality and no mitigation measures are required. Compliance with existing State and local regulations and procedures would ensure that pre- and post-construction impacts to water quality would be less than significant. These regulations and procedures would be maintained under Alternative C.

Alternative C would result in less development overall and future development would occur within the same previously urbanized areas as the proposed project that would connect to existing drainage systems already in place and be subject to the same existing federal, State, and local regulations relating to hydrology and water quality. Compliance with existing regulations would ensure that pre- and post-construction impacts to water quality be minimized as future development occurs. Overall, potential future development under Alternative C and the proposed project would be in the same urbanized environments and would be subject to the same existing regulations that address hydrology and water quality impacts. Future development under each scenario would benefit from the updated and expanded General Plan 2040 goals, policies, and programs related to hydrology and water quality and impacts would be considered ***similar*** when compared to the proposed project.

5.6.2.11 LAND USE AND PLANNING

As described in Chapter 4.11, Land Use and Planning, of this Draft EIR, implementation of the proposed project would result in less-than-significant impacts related to land use and planning.

The proposed project would aim to improve connectivity and would not create physical barriers within existing communities. While implementation of Alternative C would result in a lower intensity of development, the integration of such development would be *similar* to that of the proposed project and does not propose physical features that could divide a community. Accordingly, impacts would be *similar* under both scenarios.

Under Alternative C, development would occur throughout the EIR Study Area under the proposed General Plan 2040 and Zoning Code while development in the Downtown Precise Plan Area would occur under the Downtown Precise Plan and associated Downtown Code. Such development would be the same as under the proposed project and therefore implementation of either development scenario would not conflict with any applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be ***similar*** when compared to the proposed project.

5.6.2.12 MINERAL RESOURCES

As discussed in Chapter 4.12, Mineral Resources, of this Draft EIR, the San Rafael Rock Quarry and McNear Brickworks are the only designated mineral resource sites with local, regional, or State significance within the EIR Study Area. The site is located outside of the San Rafael city limits, but within the EIR Study Area. The proposed project was found to have a less-than-significant impact on the San Rafael Rock Quarry and McNear Brickworks because potential future development under the proposed project would occur in existing urbanized areas not located near the mineral resource site. Future development under Alternative C would occur in the locations discussed in the existing General Plan 2020, which include already urbanized portions of the EIR Study Area that would not result in an impact to the mineral resource site. Therefore, impacts to mineral resources would be ***similar*** to the proposed project under Alternative C.

5.6.2.13 NOISE AND VIBRATION

As described in Chapter 4.13, Noise and Vibration, of this Draft EIR, the proposed project would result in a less-than-significant impact with implementation of Mitigation Measures NOISE-1, NOISE-2a, and NOISE-2b.

Future development allowed under the proposed project would be subject to the standards of the SRMC as well as goals, policies, and programs proposed in General Plan 2040, including those relating to the interface between residential and non-residential land uses. As specific uses are proposed for particular sites, project-level design, permitting, and/or environmental review would serve to ensure that individual uses would comply with the noise regulations. Future development under Alternative C would also be subject to these applicable standards. Impacts would be *similar* under both scenarios in this regard.

Alternative C would result in less intense development, which would result in more construction and increased but *similar* VMT. Because construction is temporary, the slightly greater but *similar* noise from the operational phase would result in ***similar*** noise impacts under Alternative C when compared to the proposed project.

5.6.2.14 POPULATION AND HOUSING

As described in Chapter 4.14, Population and Housing, of this Draft EIR, the proposed project would not result in any significant impacts related to population and housing, and no mitigation measures are required.

As described in Chapter 4.14, Population and Housing, of this Draft EIR, implementation of the proposed project would slightly exceed current regional projections. However, implementation of the proposed project was found to have a less-than-significant impact due to the focus on infill development in PDAs and TPAs, which is in alignment with the regional planning framework of *Plan Bay Area*. Further, the proposed project is the overriding policy document in the EIR Study Area which plans for population growth that is reasonably foreseeable through 2040.

Alternative C would result in less population and housing, and more jobs than the proposed project; thus, the regional projections would be closer to the 2040 regional forecasts for San Rafael under Plan Bay Area 2040. Alternative C would include the updated policy framework of the proposed project, which ensures adequate planning occurs to accommodate the future population increase and future development. Therefore, impacts under Alternative C would be *similar* to those under the proposed project.

Alternative C would allow for a lower increase of residential and higher non-residential development in the EIR Study Area through 2040. Alternative C would result in less housing than the proposed project but would still not require replacement housing outside the EIR Study Area. Therefore, impacts under Alternative C would be *similar* to those of the proposed project.

In summary, while Alternative C would result in a different growth potential, impacts related to population and housing would be ***similar*** when compared to the proposed project.

5.6.2.15 PUBLIC SERVICES AND RECREATION

As described in Chapter 4.15, Public Services and Recreation, of this Draft EIR, impacts under the proposed project to fire protection services, police services, parks, schools, and libraries, were found to be less than significant. No mitigation measures are required.

Alternative C would result in fewer new residents and more jobs in the EIR Study Area than the proposed project, and therefore, would result in *less* demand on the public service providers that serve the EIR Study Area. However, potential future development under Alternative C would be required to comply with all existing and proposed new City regulations adopted to ensure that development pays its fair share of the cost of delivering services, providing park space, and libraries. As discussed in Chapter 4.15, the City has recently upgraded critical public service facilities and exceeds the existing parkland standard in General Plan 2020; therefore, Alternative C would not result in an increase in demand, which would be anticipated to result in a significant impact. Further, the payment of property taxes and development fees that would ensure that future development pays its fair share towards schools as dictated by Senate Bill 50 while City regulations would ensure future development pays its fair share towards potential increases in demand on library services. Overall, impacts under Alternative C would be ***less*** than those of the proposed project.

5.6.2.16 TRANSPORTATION

As described in Chapter 4.16, Transportation, of this Draft EIR, the proposed project would result in two significant and unavoidable impacts related to transportation despite implementation of Mitigation Measures TRAN-1a and TRAN-1b. Both significant and unavoidable impacts are related to the inability of the proposed project to achieve the VMT reduction by 2040 of 15 percent below the baseline (2019) regional average. While the proposed General Plan 2040 results in a reduction in VMT Per Service Population by 2040, the VMT threshold of 15 percent below the current regional average would not be met.

As discussed in Chapter 4.16, Transportation, of this Draft EIR, the proposed project would result in a significant VMT impact for Total VMT Per Capita and Work VMT Per Employee and would not result in a significant Home VMT Per Resident impact. Both scenarios would result in similar development patterns, but Alternative C would yield fewer residential units and more jobs. Therefore, the Total VMT Per Service Population and Work VMT Per Employee would be *slightly* greater under Alternative C than the proposed project (28.3 Total VMT Per Capita compared to 28.1 Total VMT Per Capita and 16.1 Work VMT Per Employee compared to 17.3 Work VMT Per Employee).

Both Alternative C and the proposed project would include the improvements recognized in the Downtown Precise Plan and updated goals, policies, and programs that expand upon General Plan 2020 and to ensure the transportation system in the EIR Study Area is multi-modal and designed to increase bicycle and pedestrian access and safety. Impacts related to hazards from design features, emergency access, and conflicting with adopted plans or decrease performance standards, were found to be less than significant.

Overall, transportation impacts in the EIR Study Area under Alternative C would be ***greater*** when compared to the proposed project.

5.6.2.17 UTILITIES AND SERVICE SYSTEMS

As described in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, impacts to sanitary wastewater, solid waste and stormwater infrastructure, and solid waste, under the proposed project, were found to be less than significant with the compliance of all applicable regulations. No mitigation measures are required.

Since Alternative C would result in less residential development, and thus, less water demand, wastewater and solid waste generation, impacts under the Alternative C would be ***less*** when compared to the proposed project.

5.6.2.18 WILDFIRE

Chapter 4.18, Wildfire, of this Draft EIR determined that, due to compliance with applicable local, regional, and State regulations, the proposed project would not impair the implementation of an emergency response or emergency evacuation plan. Additionally, potential future development as a result of the proposed project would not be located in an area that would expose persons to wildfire or wildfire

pollutants, nor would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides. Finally, the proposed project would not result in the installation or maintenance of any infrastructure that could exacerbate fire risk or result in impacts to the environment.

Alternative C would result in lower-density development that would be located in the same locations as in the proposed project; would adopt the same goals, policies, and programs to reduce the risk of wildfire; and would not include the installation or maintenance of any infrastructure projects. Therefore, implementation of Alternative C would have *similar* impacts to the proposed project.

5.6.3 RELATIONSHIP OF THE ALTERNATIVES TO THE OBJECTIVES

As listed in Section 5.2, the primary purposes of the proposed project are to plan for the growth and conservation of San Rafael over a 20-year time horizon and to achieve a more equitable, sustainable, and prosperous future for all residents. This requires extending the buildout horizon to year 2040 and updating goals, policies, and programs so that they meet current State requirements and community priorities. As part of this process, the City drafted 2040 Guiding Principles, which build upon the framework of the vision, guiding principles, and goals of the current General Plan 2020 and reflect the community's desires for San Rafael's future. Big-picture objectives related specifically to growth include focusing growth in the Downtown Precise Plan Area, capitalizing on transit opportunities in and around PDAs, and streamlining future development that is consistent with the proposed project.

Alternative C would result in less housing and population growth in the EIR Study Area when compared to the proposed project. As discussed in Chapter 3, Project Description, of this Draft EIR, the proposed project specifically plans for infill development in existing urban areas near public transportation to meet the goals of the City. While the growth in Alternative C would occur in the same locations as included in the proposed project, Alternative C would result in less overall development, which would mean that the City would not meet their goal of providing adequate development to accommodate the growing population in the EIR Study Area. Therefore, Alternative C does not meet all the project objectives as outlined in the proposed project.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In addition to the discussion and comparison of impacts of the proposed project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be selected and the reasons for such a selection be disclosed. In general, the environmentally superior alternative is the alternative to the proposed project that would be expected to generate the least number of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative to the proposed project selected may not be the alternative to the proposed project that best meets the goals or needs of San Rafael. Because CEQA Guidelines Section 15126.6(c) requires an evaluation of a reasonable range of alternatives to the proposed project, the proposed project under consideration cannot be identified as the environmentally superior alternative. Additionally, in accordance with CEQA Guidelines Section 15126.6(e)(2), if the

environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

A summary of the impacts shown in Table 5-2 for each alternative is as follows:

- Alternative A would, in comparison to the project, result in *reduced* environmental impacts related to aesthetics, and utilities and service systems, but would ultimately result in *greater* impacts related to air quality, biological resources, cultural resources (historic buildings), energy, GHG emissions, noise (operational), and transportation.
- Alternative B would, in comparison to the project, result in reduced environmental impacts related to air quality, energy, GHG emissions, noise (operational), and transportation, but would result in *greater* impacts to cultural resources (historic buildings) and utilities and service systems.
- Alternative C would, in comparison to the project, would result in reduced environmental impacts related to aesthetics, cultural resources (historic buildings), and utilities and service systems, but would have greater impacts to related to air quality, energy, GHG emissions, noise (operational), and transportation.

Therefore, as shown in Table 5-2, Alternative B would be the environmentally superior alternative.

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6. CEQA-Required Conclusions and Findings

This chapter provides an overview of the impacts of the proposed project based on the analyses presented in Chapters 4.1 through 4.18 of this Draft Environmental Impact Report (EIR). The topics covered in this chapter include growth-inducing impacts and significant irreversible changes to the environment. A more detailed analysis of the effects that the proposed project would have on the environment, and proposed mitigation measures to minimize significant impacts, are provided in Chapter 4, Environmental Analysis, of this Draft EIR.

6.1 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(b) of the California Environmental Quality Act (CEQA) Guidelines requires that "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short- and long-term effects." Chapter 2, Executive Summary, contains Table 2-1, which summarizes the significant impacts, mitigation measures, and levels of significance with and without mitigation. While actions from the proposed project and mitigation measures, where feasible, would reduce the level of impact to less than significant, the following impacts would remain significant and unavoidable after mitigation measures are applied. As detailed in Chapters 4.3, Air Quality, Chapter 4.8, Greenhouse Gas Emissions, and Chapter 4.16, Transportation, of this Draft EIR, environmental impacts associated with the proposed project were found to be significant and unavoidable, as listed:

- Impact AIR-2.2: Operational activities associated with potential future development could cumulatively contribute to the non-attainment designations of the San Francisco Bay Area Air Basin.
- Impact AIR-3.2. Operational activities associated with potential future development could expose sensitive receptors to substantial toxic air contaminant concentrations from nonpermitted sources.
- Impact CULT-1. Future development in San Rafael on sites that contain a historic resource may cause the demolition, destruction, or alteration of a historic resource such that the significance of the resource is "materially impaired." Such adverse changes or potential adverse changes in the significance of a CEQA-defined historic resource would constitute a significant impact.
- Impact GHG-1: Implementation of the proposed project may not meet the long-term GHG reduction goal under Executive Order S-03-05. (This is a cumulative impact).
- Impact TRAN-1a Implementation of the proposed project would result in a significant land use VMT impact for Total VMT and Work VMT due to forecast land use growth through 2040, based on a comparison of the VMT rate increment for Total VMT Per Service Population and Work VMT Per Employee to the corresponding average baseline rates for the full nine-county Bay Area.

- Impact TRAN-1b: Implementation of the proposed project would result in a significant road network VMT impact due to the planned capacity of the roadway system.
- Impact TRAN-6: Implementation of the proposed project would cumulatively contribute to regional VMT.

6.2 GROWTH-INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth-inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development.

This section evaluates the proposed project's potential to create such growth inducements. As CEQA Guidelines Section 15126.2(d) requires, "[it] must not be assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment." In other words, negative impacts associated with growth inducement occur only where the projected growth would cause significant adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by, or attracted to, a new project.

Further, while implementation of the proposed project would induce growth, as discussed in detail in Chapter 4.14, Population and Housing, of this Draft EIR, the proposed project would be consistent with the regional planning objectives established for the Bay Area. While the project itself implements goals, policies, and programs to accommodate the project's projected growth, it would exceed the current population and household forecasts as projected by the Association of Bay Area Governments (ABAG). However, ABAG prepares forecasts of the region's population and employment every two to four years. Amongst other sources, ABAG's projections take into account local planning documents for the nine-county region, such as the City of San Rafael's General Plan. As such, while the proposed project exceeds the regional projections, both the General Plan and regional forecasts are long-range planning tools that assist local governments to identify policies that address changing environments. Accordingly, following adoption of the proposed project, the regional forecasts would take into account the new growth potential for San Rafael; thus, bringing the two long-range planning tools into better alignment. Additionally, this additional growth would come incrementally over a period of approximately 20 years and a policy framework is in place to ensure adequate planning occurs to accommodate it. The proposed project results in mixed-use development near transportation facilities and employment centers and implements energy and water conservation requirements related to existing and new development, thereby minimizing consumption of non-renewable resources to the extent practicable.

6.2.1 DIRECT IMPACTS

The proposed project is a plan-level document and does not propose any specific development; however, implementation of the proposed project would induce growth by increasing the development potential in the EIR Study Area, as shown in Tables 3-6 and 3-7 in Chapter 3, Project Description, of this Draft EIR.

As shown in Table 3-6, the 2040 forecast for the EIR Study Area is 32,382 households; 33,989 residential units; 84,661 total population, and 48,315 employees. As shown in Table 3-7, the forecast for the Downtown Precise Plan Area is 3,596 households; 3,771 residential units; 5,885 total population, and 13,020 employees.

State law requires the City to promote the production of housing to meet its fair share of the regional housing needs distribution made by ABAG. While the City provides adequate sites to meet its fair-share housing obligations, the additional housing capacity provided by the project would meet the additional demand generated by new job growth.

In addition, as shown on Figure 4-1 (see Chapter 4, Environmental Analysis), the EIR Study Area has three PDAs and three TPAs. The proposed General Plan 2040 is anticipating that these areas will absorb most of the City's future growth. The growth envisioned under the proposed project would result in regional benefits by promoting growth that encourages less automobile dependence and supports regional transit systems, which could have associated air quality and GHG benefits. Encouraging infill growth in designated areas would help to reduce development pressures on lands outside the city boundary.

6.2.2 INDIRECT IMPACTS

The proposed project is considered growth inducing because it encourages new growth in the urbanized areas of San Rafael. Development in these areas would consist of infill development on underutilized sites, sites that have been previously developed, and that are vacant and have been determined to be suitable for development. However, infrastructure is largely in place and growth would be required to comply with the City's General Plan, zoning regulations, and standards for public services and utilities; secondary effects associated with this growth do not represent a new significant environmental impact which has not already been addressed in the individual resource chapters of this EIR.

Additional population and employment growth would occur incrementally over a period of approximately 20 years and would be consistent with the regional planning objectives established for the Bay Area.

6.3 SIGNIFICANT AND IRREVERSIBLE CHANGES

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which the proposed project would commit nonrenewable resources to uses that future generations would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed herein.

6.3.1 CHANGES IN LAND USE THAT COMMIT FUTURE GENERATIONS

As described in detail in Chapter 3, Project Description, of this Draft EIR, the proposed project generally maintains the land use pattern of the existing General Plan. While new land uses are not introduced in the proposed project, development is encouraged in existing urban areas, particularly in the Downtown Precise Plan Area. The current General Plan provided development allocations for buildout of the city through the year 2020. The proposed project includes increased density and heights in the Downtown Precise Plan Area, but such future development under the proposed project would be located on land that is generally urbanized or on infill sites and sites in developed areas that are underutilized. However, some potential future development may occur on vacant non-urban sites which are already designated for development. Once future development under the proposed project occurs, it would not be feasible to return the developed land to its existing (pre-project) condition. Therefore, there is potential that some of the development allowed under the proposed project would most likely lead to irreversible changes in land use.

6.3.2 IRREVERSIBLE DAMAGE FROM ENVIRONMENTAL ACCIDENTS

Irreversible changes to the physical environment could occur from accidental release of hazardous materials associated with development activities; however, compliance with the applicable regulations and General Plan goals, policies, and programs and implementation of Mitigation Measures HAZ-4a and HAZ-4b, and HAZ-8, as discussed in Chapter 4.9, Hazards and Hazardous Materials, would reduce this potential impact to a less-than-significant level. Therefore, irreversible damage is not expected to result from the adoption and implementation of the proposed project.

6.3.3 LARGE COMMITMENT OF NONRENEWABLE RESOURCES

Implementation of development allowed under the proposed project would result in the commitment of limited, renewable resources such as lumber and water. In addition, development allowed by the proposed project would irretrievably commit nonrenewable resources for the construction of buildings, infrastructure, and roadway improvements. These nonrenewable resources include mined minerals such as sand, gravel, steel, lead, copper, and other metals. Future buildout under implementation of the proposed project also represents a long-term commitment to the consumption of fossil fuels, natural gas, and gasoline. Increased energy demands would be used for construction, lighting, heating, and cooling of residences, and transportation of people within, to, and from San Rafael. However, as shown in Chapter 4.5, Energy, and in Section 4.17.1, Water, and Section 4.17.4, Solid Waste, of Chapter 4.17, Utilities and Service Systems, of this Draft EIR, several regulatory measures and General Plan policies and strategies encourage energy and water conservation, alternative energy use, waste reduction, alternatives to automotive transportation, and green building. Future development, as a result of increased development allocation under the proposed project, would be required to comply with all applicable building and design requirements, including those set forth in Title 24 relating to energy conservation. In compliance with CALGreen, the State's Green Building Standards Code, future development would be

required to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials. Therefore, while the construction and operation of future development, as a result of increased development allocations under the proposed project, would involve the use of nonrenewable resources, compliance with applicable standards and regulations and implementation of General Plan policies would reduce the use of nonrenewable resources to the maximum extent practicable; therefore, the proposed project would not represent a large commitment of nonrenewable resources in comparison to a business-as-usual situation.

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8. Common Acronyms and Abbreviations

ACRONYM/ABBREVIATION	MEANING
°C	degrees Celsius
°F	degrees Fahrenheit
AAQS	ambient air quality standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
afy	acre-feet per year
BAAQMD	Bay Area Air Quality Management District
BAM	best available maps
BASMAA	Bay Area Stormwater Management Agencies Association
BCDC	Bay Conservation and Development Commission
BFE	base flood elevation
BMP	best management practice
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal OES	California Office of Emergency Services
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CARB	California Air Resources Board
CBC	California Building Code
CCAP	climate change action plan
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CGP	Construction General Permit
CH_4	methane
CHP	California Highway Patrol
CIP	capital improvements program

COMMON ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	MEANING
CMP	congestion management program
CMSA	Central Marin Sanitation Agency
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide-equivalent
CUPA	Certified Unified Program Agency
CWA	federal Clean Water Act
dB	decibel
dBA	A-weighted decibel
DOI	Department of the Interior
DOT	United States Department of Transportation
DPM	diesel particulate matter
DPW	San Rafael Department of Public Works
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EMS	emergency medical services
EOP	emergency operations plan
EPCRA	Emergency Planning Community Right-to-Know Act
EPSFSP	*San Rafael Essential Public Safety Facilities Strategic Plan*
ERP	emergency recovery plan
ESC	Emergency Services Coordinator
ESCP	erosion and sediment control plan
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	flood insurance rate map
FTA	Federal Transit Administration
FOG	fats, oils, and grease
GDP	gross domestic product
GHG	greenhouse gas
GIS	geographic information system
gpcd	gallons per capita per day
GWP	global warming potential
HCP	habitat conservation plan
Hz	herz
I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
ISO	Insurance Services Office
JPA	joint powers authority

COMMON ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	MEANING
kBTU	thousand British thermal units
kW	kilowatt
kWh	kilowatt-hours
LAFCo	Local Agency Formation Commission
LGVSD	Las Gallinas Valley Sanitary District
LHMP	local hazard mitigation plan
LUST	leaking underground storage tank
µg/m^3	micrograms per cubic meter
M	earthquake magnitude
Marin OES	Marin County Office of Emergency Services
MBTA	Migratory Bird Treaty Act
MCCO	Marin County Code of Ordinances
MCFCWCD	Marin County
MCFD	Marin County Fire Department
MCLHMP	*Marin County Local Hazard Mitigation Plan*
MCSTOPPP	Marin County Stormwater Pollution Prevention Program
mg	million gallons
mgd	million gallons per day
MHHWF	Marin Household Hazard Waste Facility
MCE	Marin Clean Energy
$MMTCO_2e$	million metric tons of CO_2e
MMWD	Marin Municipal Water District
MRC	Marin Recycling Center
MRRC	Marin Resource Recovery Center
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
MTC	Metropolitan Transportation Commission
$MTCO_2e$	metric ton of CO_2e
MWELO	Model Water Efficient Landscape Ordinance
N_2O	nitrous oxide
NAC	noise abatement criteria
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration's National Marine Fisheries Service
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O_3	ozone
OPC	Ocean Protection Council
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PDA	priority development area
PG&E	Pacific Gas and Electric Company

COMMON ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	MEANING
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM	particulate matter
ppb	parts per billion
ppd	pounds per day
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PRD	permit registration documents
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Act Information System
RHNA	regional housing needs assessment
RTP/SCS	regional transportation plan / sustainable communities strategy
RWQCB	Regional Water Quality Control Board
SAP	station area plan
SARA	Superfund Amendments and Reauthorization Ac
SB	Senate Bill
SCH	State Clearinghouse
SCP	stormwater control plan
SCWA	Sonoma County Water Agency
SF_6	sulfur hexafluoride
SMART	Sonoma-Marin Area Rail Transit
SMARTS	Stormwater Multiple Application and Report Tracking System
SOI	sphere of influence
SRMC	San Rafael Municipal Code
SRFD	San Rafael Fire Department
SRPD	San Rafael Police Department
SRSD	San Rafael Sanitation District
SSMP	sewer system management plan
SSO	sanitary sewer overflow
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAM	Transportation Authority of Marin
TMDL	total maximum daily load
TPA	transit priority area
US-	U.S. highway
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VdB	vibration decibel

COMMON ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	MEANING
VMT	vehicle miles traveled
WCR	well completion report
WMD	waste management division
WSA	water supply assessment
WUI	wildland-urban interface
WWTP	wastewater treatment plant

COMMON ACRONYMS AND ABBREVIATIONS

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Prepared by

PLACEWORKS

1625 Shattuck Avenue, Suite 300
Berkeley, California 94709
510.848.3815

www.placeworks.com

APPENDIX A:
NOTICE OF PREPARATION AND SCOPING COMMENTS

Notice of Preparation
Environmental Impact Report
City of San Rafael

Date: **March 29, 2019**

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: Barry Miller, Consulting Project Manager
City of San Rafael
Community Development Department
1400 Fifth Street
San Rafael, CA 94901

Subject: Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the General Plan 2040 and Downtown Precise Plan
Lead Agency: City of San Rafael Community Development Department
Project Title: General Plan 2040 and Downtown Precise Plan
Project Area: City of San Rafael and unincorporated San Rafael Planning Area

Notice is hereby given that the City of San Rafael (City) will prepare an EIR for the San Rafael General Plan 2040 and Downtown Precise Plan (proposed project) and will hold a public meeting to receive comments on the scope of the EIR, as detailed below. Pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15206, the proposed project is considered a project of statewide, regional, or areawide significance. The City, acting as the Lead Agency, determined that the proposed project could result in potentially significant environmental impacts and that an EIR is required.

The City will prepare an EIR to address the potential environmental impacts associated with the project at a programmatic level consistent with CEQA Guidelines Section 15168. The program-level EIR will evaluate the proposed project for potential impacts on the environment and analyze the proposed policies to determine the potential environmental consequences of future change. An evaluation of project alternatives that could reduce significant impacts will be included in the EIR. The proposed project, its location, and potential environmental effects are described below.

The City is requesting comments and guidance on the scope and content of the EIR from interested public agencies, organizations, and individuals. With respect to the views of Responsible and Trustee Agencies as to significant environmental issues, the City needs to know the reasonable alternatives and mitigation measures that are germane to each agency's statutory responsibilities in connection with the proposed project.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but no later than the close of the 30-day NOP review period at **5:00 p.m. on Monday, April 29, 2019** If you submit comments on the scope of the EIR, you will automatically be added to the City's distribution list for future notices and information about the environmental review process for proposed project. If you do not wish to submit comments on the scope of the EIR, but would like to be added to the City's mailing list, you can submit your contact information, including email address with a request to be added to the mailing list.

Please send your written comments to Barry Miller, at the address shown above or email to Barry.Miller@cityofsanrafael.org with "*General Plan 2040 and Downtown Precise Plan EIR*" as the subject. Public agencies providing comments are asked to include a contact person for the agency.

A Scoping Meeting to accept oral comments will be held before the San Rafael Planning Commission on **Tuesday April 23, 2019 at 7:00 pm**. at City Hall in the Council Chambers (1400 Fifth Street, San Rafael, CA 94901)

PROJECT LOCATION, DESCRIPTION, AND OBJECTIVES

This section describes the location, project description, and overall objective of the proposed project. A copy of this NOP, information about the project, including relevant documents, information on upcoming meetings, and ways you can provide feedback can be viewed: 1) on line at **http://www.sanrafael2040.org**, or 2) City Hall (1400 Fifth Avenue - Planning Division counter, 3rd Floor). The Planning Division counter is open Mondays, Tuesdays and Thursdays from 8:30 a.m. to 4:30 p.m. and, Wednesdays and Fridays from 8:30 a.m. to 1:30 p.m.

Project Location

The project encompasses the San Rafael Planning Area, which includes all land within the city limits, adjacent land in the Sphere of Influence (SOI) boundary, and land beyond the SOI that is commonly perceived as greater San Rafael. Unincorporated areas within the SOI include California Park, Country Club, Bayside Acres, and Los Ranchitos; China Camp State Park; the Santa Venetia area; and the San Rafael Rock Quarry. The Planning Area also includes Marinwood and Lucas Valley (developed and undeveloped portions), although these areas are outside the SOI. The Downtown Precise Plan area encompasses 265 acres located in downtown San Rafael. See Figures 1, 2, and 3 for regional and study area maps.

Project Description and Objectives

Often described as each city's "constitution," general plans are required by State law to guide land use and development, typically within a 20-year horizon. General plans must be periodically updated to respond to new state laws, changing conditions, and emerging issues and opportunities. San Rafael's existing General Plan was prepared in 1999-2003 and was adopted in 2004, with a horizon year of 2020. Since the horizon year is approaching, the City is now updating its plan to extend the planning period to 2040. The San Rafael General Plan 2040 (General Plan 2040) will build off the current General Plan 2020 and provide a framework for land use, transportation, and conservation decisions through the year 2040.

The City is also preparing a Downtown Precise Plan (Precise Plan) concurrently with the General Plan 2040. The Precise Plan is being funded by a grant from the Metropolitan Transportation Commission. The intent of the Precise Plan is to facilitate housing production, placemaking, economic vitality, innovative transportation solutions, and community engagement with an emphasis on sustainable, transit-oriented development.

Both the proposed General Plan 2040 and the Downtown Precise Plan will direct future growth within the study area and address the city's vulnerability to environmental challenges such as sea level rise, wildland fires, and other hazards identified in the City's Local Hazard Mitigation Plan and updated Climate Action Plan. Both plans are intended to respond to local and regional housing needs, foster economic growth and local job creation, enhance civic identity and placemaking, and protect sensitive natural resources.

Environmental Review

The San Rafael General Plan 2040 and Downtown Precise Plan program EIR will determine whether implementation of the proposed project may result in environmental impacts that require mitigation measures to offset potential impacts. By incorporating implementation provisions (goals, policies, and programs) that focus on reducing environmental impacts, the proposed project can be made largely "self-mitigating," which reduces the need for separate EIR mitigation measures, improves the efficiency of implementation, and increases the likelihood that development within the study area will be environmentally sustainable. In accordance with CEQA, the cumulative impacts discussion will be based on review of other plans shaping development outside of the study area. CEQA requires that an EIR evaluate alternatives to a project that could reasonably attain the project objectives while reducing any significant impact of the project, as well as considering the "No Project" Alternative (i.e., what could happen if the project were not approved).

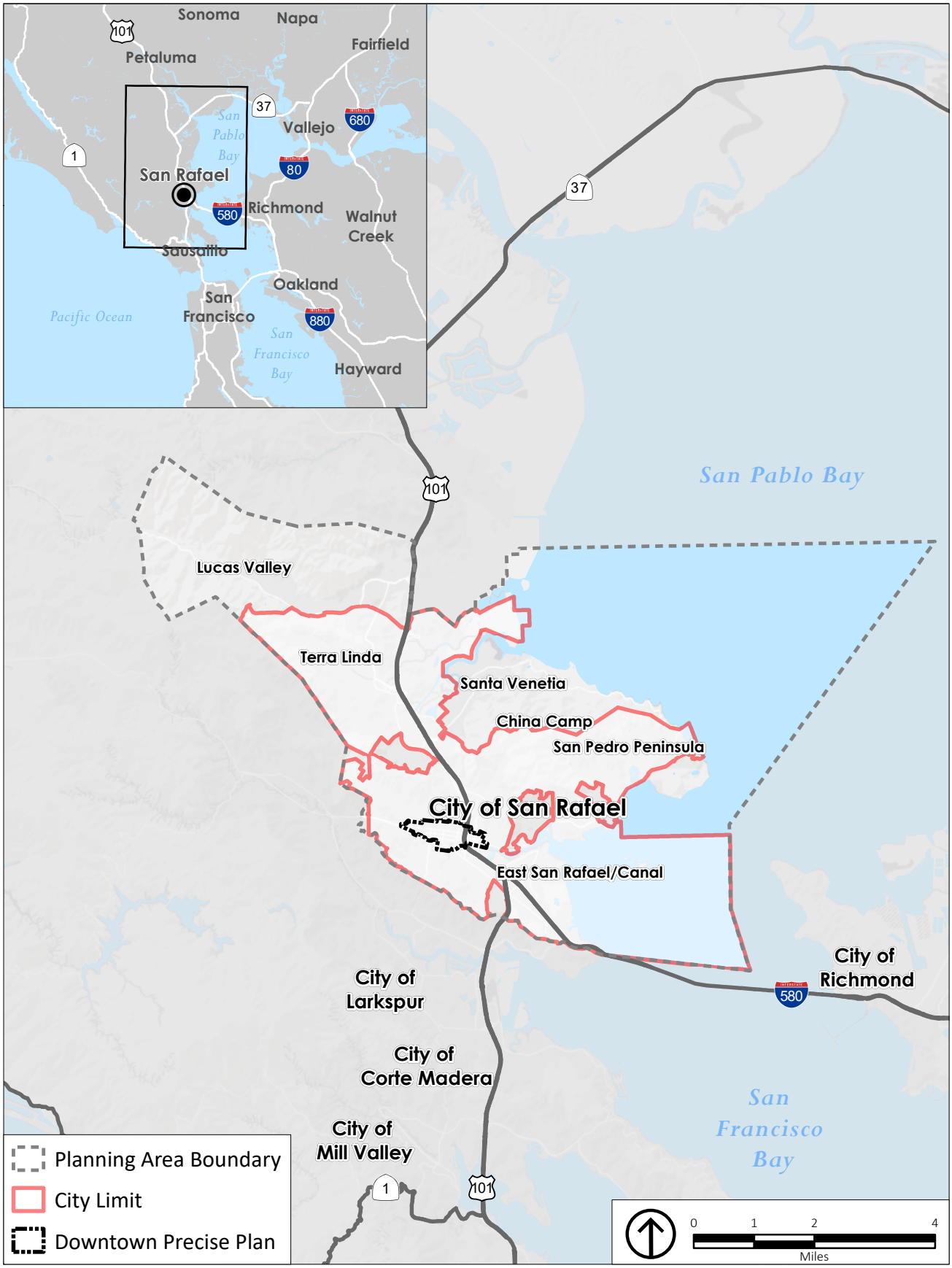
Environmental Factors Potentially Affected

The EIR will address the proposed project's potential impacts to the following environmental topics:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources/Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Parks and Recreation
- Transportation
- Utilities and Service Systems
- Wildfire

Attachments:

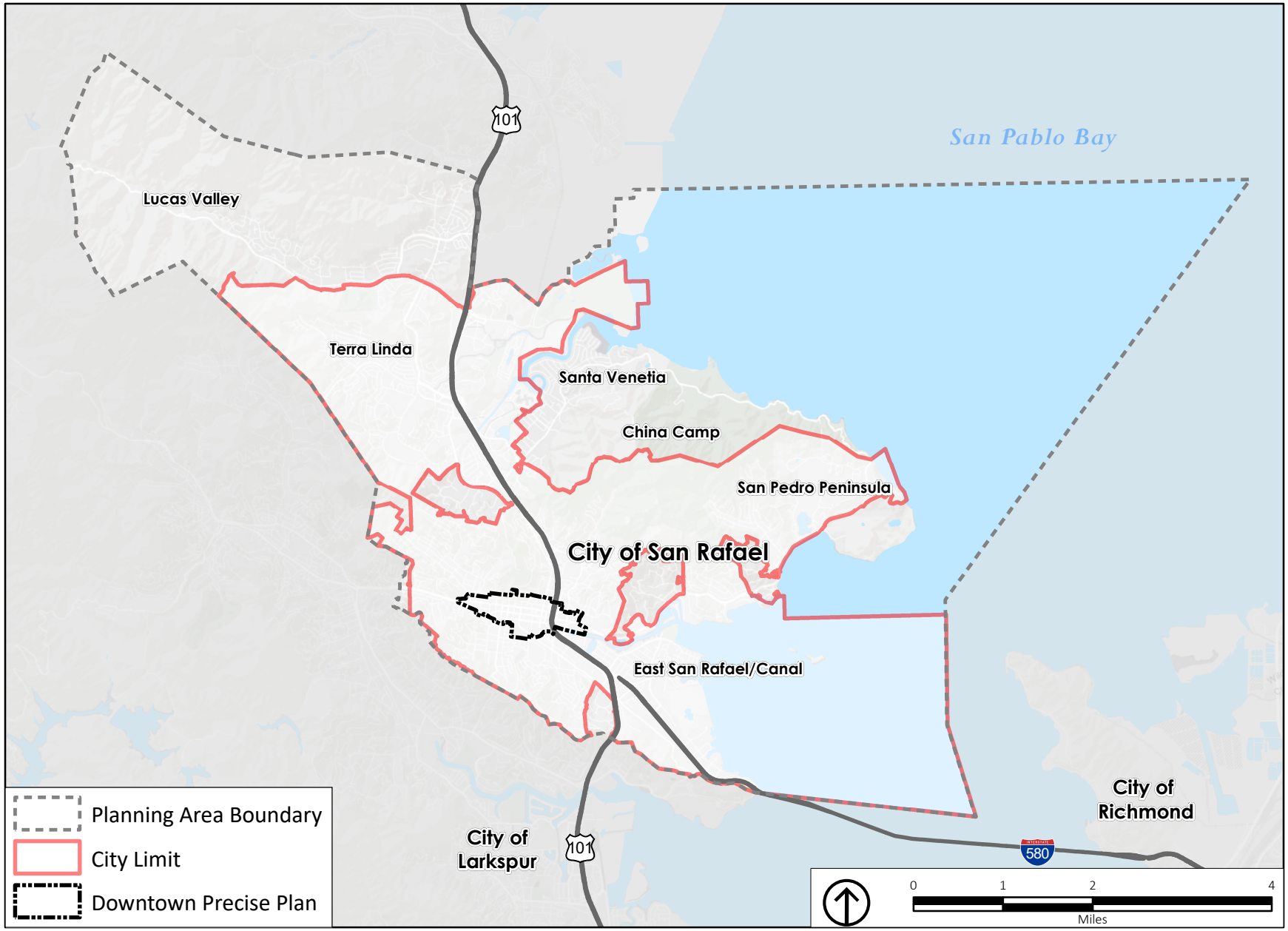
Figure 1: Regional and Vicinity Map
Figure 2: San Rafael Planning Area Map
Figure 3: Downtown Precise Plan Map



Source: ESRI, 2017; City of San Rafael, 2019; PlaceWorks, 2019.

SAN RAFAEL General Plan 2040

Figure 1
Regional and Vicinity Map



Source: ESRI, 2017; City of San Rafael, 2019; PlaceWorks, 2019.

SAN RAFAEL General Plan 2040

Figure 2
San Rafael Planning Area Boundary Map



Source: ESRI, 2017; City of San Rafael, 2019; PlaceWorks, 2019.

SAN RAFAEL General Plan 2040

Figure 3
Downtown Precise Plan Map

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
Verbal Comments from April 23, 2019 Scoping Meeting																								
Planning Commissioner Comments									•	•		•						•			•	•		Comments given by Planning Commissioners at the Scoping Meeting addressed concerns regarding sea level rise and its impact to eastern San Rafael. Commissioners also asked that the EIR look comprehensively at how land use and transportation tie together to potentially hinder evacuation plans for wildfires and commented that threat of wildfire means the circulation network is vital. Greenhouse gas emissions were mentioned in an effort to ensure the EIR will address reducing greenhouse gas emissions in accordance with the Climate Change Action Plan. Furthermore, three alternatives were mentioned specifically for the Northgate Mall area. Alternatives suggested include: 1) Keeping the status quo; 2) Developing high density residential; and 3) Developing retail that will generate higher sales taxes. There were no comments made by the general public, and no written comments received, at the Scoping Meeting.

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
Written Comment Received between March 29 and April 29, 2019																								
1	Scott Morgan Director, State Clearinghouse 1400 Tenth Street, P.O. Box 3044 Sacramento, CA 95812 state.clearinghouse@opr.ca.gov (916) 445-0613 March 29, 2019																					•		Public release of the NOP by the California State Clearinghouse.
2	Patricia Maurice District Branch Chief, Caltrans P.O. Box 23660 Oakland, CA 94623 Contact person is Michael McHenry michael.mchenry@dot.ca.gov (510) 286-5562 April 29, 2019																	•						Reminds the Lead Agency that they are responsible for all project mitigation, included any needed improvements to the State Transportation Network. Comment also reminds the Lead Agency that any work or traffic control that encroaches onto the State right-of-way requires an encroachment permit issued by Caltrans.

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
3	Greg Nudd Deputy Air Pollution Control Officer, BAAQMD 375 Beale Street, Suite 600 San Francisco, CA 94105 Contact person is Andrea Gordon agordon@baaqmd.gov (415) 749-4940 April 29, 2019				•				•															Requests that the EIR addresses the proposed Plan's potential effects on local and regional air quality, includes an assessment of the potential health risks to current and future vulnerable populations, identifies, evaluates, and includes measures to reduce criteria air pollutants, evaluates consistency with the Air District's adopted plans and guidance documents, includes a discussion of greenhouse gas impacts, includes all feasible emission reduction measures, provides a map clearly identifying the Plan's boundary with sensitive receptors included, and addresses how the Plan will incorporate Senate Bill 1000.
4	Buffy McQuillen Tribal Heritage Preservation Officer, Federated Indians of Graton Rancheria 6400 Redwood Drive, Suite 300 Rohnert Park, CA 94928 THPO@gratonrancheria.com (707) 566-2288 April 10, 2019						•															•		Indicates that commenter will review the project.

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
5	Brandy Wilson 1114 Mission Avenue San Rafael, CA 94901 **[Barry: What is San Rafael's standard for redacting public information on comment letters?]** wilson.girazian@gmail.com (415) 314-3152 April 22, 2019									•												•		Requests that the boundary for the Downtown Precise Plan include the entirety of Boyd Park and the Falkirk Mansion. Adds that the National Climate Assessment estimates San Rafael will become 3.5 degrees Fahrenheit warmer by 2050, which will significantly impact these resources. Comment additionally mentions risk of wildfire.
6	William Carney and Linda Jackson Sustainable San Rafael Board of Directors 166 Greenwood Avenue San Rafael, CA 94901 (415) 457-7656 April 26, 2019		•												•			•			•	•		Requests the EIR address housing shortage and affordability, homelessness, shift to online retail, traffic congestion, climate change, diversity and equity challenges, and community character. The comment offers five alternatives for consideration: 1) No Plan; 2) Protection of existing development form sea level rise; 3) Relocation and consolidation of vulnerable development; 4) Continuing sea level rise; and 5) Comprehensive planning. Additionally, the comment suggests that several key metrics need to be established and mapped by the EIR, using expectations such as sea level rise and housing projections. Finally, the comment includes a list of key policies and programs that are recommended for consideration through the EIR process.

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
7	Margaret Johnston and Judy Schriebman Gallinas Watershed Council gwc@gallinaswatershed.org (415) 578-2580 April 28, 2019					•					•					•								Expresses a desire to see the Gallinas Creek Watershed analyzed for restoration and enhanced planning to turn it into a community asset. Comment requests that the EIR include language to support restoration of Gallinas Creek, specifically: 1) Consideration of economic, social, environmental, health, and safety benefits of restoration; 2) Explore traffic analysis along Freitas parkway; 3) Explore a continuation of creek restoration and daylighting; 4) Enumerate other cities' funding structures; and 5) Align City policies with State, local, and federal policies. The comment also lists additional watersheds that could be considered for restoration, specifically areas that could benefit from enhances public access and better water quality. Finally, the comment requests the General Plan EIR include analysis of complete streets policies, consider latest scientific and policy benefits of increasing pervious surfaces, and looking for opportunities to daylight creeks and create safe wildlife corridors.
8	Margaret Johnston and Judy Schriebman Gallinas Watershed Council gwc@gallinaswatershed.org (415) 578-2580 April 28, 2019					•					•					•								Comment is a copy of comment 7 outlined above. Comment 8 additionally includes discussion of impacts that use of nighttime artificial light has on humans and animals, and suggests use of best management practices for reduction of light pollution.

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
9	Kate Powers April 29, 2019		•		•	•					•			•	•			•			•	•		Requests that the EIR address cumulative impacts thoroughly, as well as thoroughly conducts analysis of the No Project Alternative. Commenter lists major roadways that the EIR should include as part of a detailed analysis, and that should include new and updated traffic and congestion models. Additionally, the comment includes several policies and programs that should be thoroughly analyzed to understand the role they play in reducing congestion and increasing safety. The comment requests that the EIR adequately address impacts on air quality, greenhouse gas emissions, noise, and light, that the proposed Plan's may have, and requests the EIR compare these impacts thoroughly to cumulative impacts. The comment requests that the EIR heavily consider impacts to hydrology and water quality, including showing existing creeks and wetlands on all site maps, including BayWAVE data, identify policies that meet climate- safe infrastructure, describe anticipated rates and volumes of stormwater runoff, drainage capacity, filtrations, and possible soil erosion in watersheds, identify areas that would place housing and other structures within the Federal Emergency Management Agency 100- year flood hazard zone, and assess toxicity of soils and describe how sediment and any contaminants will be prevented from entering creek systems and the nearby estuary.

Comments Received on the Notice of Preparation
San Rafael General Plan 2040 and Downtown Precise Plan Environmental Impact Report

#	COMMENTOR NAME AND ADDRESSES	Project Description	Aesthetics	Agriculture and Forestry	Air Quality	Biological Resources	Cultural / Tribal Cultural Resources	Geology / Soils	Greenhouse Gas Emissions	Hazards / Hazardous Materials/ Wildfire	Hydrology / Water Quality	Land Use and Planning	Mineral Resources	Noise	Population / Housing	Public Services	Recreation	Transportation / Circulation	Utilities / Service Systems/ Energy	Construction Impacts	Alternatives	Other	Requests to be Notified	SUMMARY OF ENVIRONMENTAL COMMENT
																								The comment requests that the EIR consider all impacts the proposed Plan's may have on biological resources, including promoting the status of San Rafael as a "Tree City." Furthermore, the comment requests that the EIR describes viewsheds of surrounding hills, and requests the creation of simulations of how scenic views from a variety of angles that may be impacted by future growth. Finally, the comment requests the EIR assess impacts and the cumulative effects of alternative development scenarios on population growth and increases in housing production.
10	Leyla Hill President, Los Ranchitos Improvement Association P.O. Box 4146 San Rafael, CA 94913 lriaboard@gmail.com April 29, 2019																				•			Requests the EIR consider removing the Los Ranchitos neighborhood from the San Rafael sphere of influence, and requests that the General Plan Update include goals, programs, and policies that are consistent with the Marin County Open Space District Strategic Master Plan.

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STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

RECEIVED
APR 08 2019
COMMUNITY DEVELOPMENT DEPARTMENT
CITY OF SAN RAFAEL

Notice of Preparation

March 29, 2019

To: Reviewing Agencies

Re: General Plan 2040 and Downtown Precise Plan
SCH# 2019039167

Attached for your review and comment is the Notice of Preparation (NOP) for the General Plan 2040 and Downtown Precise Plan draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Raffi Boloyan
San Rafael, City of
1400 Fifth Street
San Rafael, CA 94901

with a copy to the State Clearinghouse in the Office of Planning and Research at state.clearinghouse@opr.ca.gov . Please refer to the SCH number noted above in all correspondence concerning this project on our website: https://ceqanet.opr.ca.gov/2019039167/2.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

cc: Lead Agency

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 2019039167

Project Title: General Plan 2040 and Downtown Precise Plan

Lead Agency: City of San Rafael | Contact Person: Raffi Boloyan
Mailing Address: 1400 Fifth Street | Phone: 415-485-3423
City: San Rafael | Zip: 94901 | County: Marin

Project Location: County: Marin | City/Nearest Community: San Rafael
Cross Streets: Citywide | Zip Code: 94901
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W Total Acres: 32,640
Assessor's Parcel No.: Citywide | Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: 101, 580 | Waterways: San Pablo Bay, San Francisco Bay
Airports: San Rafael Airport | Railways: SMART | Schools: San Rafael Elementary S

Document Type:

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

Governor's Office of Planning & Research
MAR 29 2019
STATE CLEARINGHOUSE

Local Action Type:

☒ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other: Precise Plan

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☐ Other: ____

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☒ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☒ Coastal Zone
☒ Drainage/Absorption
☒ Economic/Jobs
☐ Fiscal
☒ Flood Plain/Flooding
☒ Forest Land/Fire Hazard
☒ Geologic/Seismic
☒ Minerals
☒ Noise
☒ Population/Housing Balance
☒ Public Services/Facilities
☒ Recreation/Parks
☒ Schools/Universities
☒ Septic Systems
☒ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation
☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Growth Inducement
☒ Land Use
☒ Cumulative Effects
☒ Other: GHG-Energy-Wildfir

Present Land Use/Zoning/General Plan Designation:

Citywide

Project Description: *(please use a separate page if necessary)*

The San Rafael General Plan 2020 (General Plan) is due for a comprehensive update, which will provide a framework for land use decisions through the year 2040. The City is preparing a Downtown Precise Plan concurrently with the General Plan to facilitate housing production, placemaking, economic vitality, innovative transportation solutions, and community engagement with an eye toward sustainable, transit-oriented development.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

NOP Distribution List

County: Marin or

SCH# 2019039167

esources Agency

- [■] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Denise Peterson
- [ ] **California Coastal Commission**
  Allyson Hitt
- [ ] **Colorado River Board**
  Elsa Contreras
- [ ] **Dept. of Conservation**
  Crina Chan
- [ ] **Cal Fire**
  Dan Foster
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [▨] **Office of Historic Preservation**
  Ron Parsons
- [■] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [▨] **S.F. Bay Conservation & Dev't. Comm.**
  Steve Goldbeck
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
  Curt Babcock
- [ ] **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
  Jeff Drongesen
- [▨] **Fish & Wildlife Region 3**
  Craig Weightman
- [ ] **Fish & Wildlife Region 4**
  Julie Vance
- [ ] **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
  William Paznokas
  Marine Region

Other Departments

- [ ] **California Department of Education**
  Lesley Taylor
- [▨] **OES (Office of Emergency Services)**
  Monique Wilber
- [ ] **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] **Dept. of General Services**
  Cathy Buck
  Environmental Services Section
- [▨] **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Erik Vink
- [ ] **Delta Stewardship Council**
  Anthony Navasero
- [ ] **California Energy Commission**
  Eric Knight
- [■] **Native American Heritage Comm.**
  Debbie Treadway
- [▨] **Public Utilities Commission**
  Supervisor
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [▨] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [▨] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- [▨] **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Susan Zanchi
- [▨] **Caltrans, District 4**
  Patricia Maurice
- [ ] **Caltrans, District 5**
  Larry Newland
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Dianna Watson
- [ ] **Caltrans, District 8**
  Mark Roberts
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- [▨] **Airport & Freight**
  Jack Wursten
  - [ ] **Transportation Projects**
    Nesamani Kalandiyur
  - [ ] **Industrial/Energy Projects**
    Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery**
  Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- [ ] **State Water Resources Control Board**
  Div. Drinking Water #_____
- [▨] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [▨] **Dept. of Toxic Substances Control Reg. #_____**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [▨] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____
  _____
  _____
- [ ] _____
  Conservancy

Last Updated 5/22/18

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
www.dot.ca.gov

Making Conservation a California Way of Life!

April 29, 2019

SCH: 2019039167
04-MRN-2019-00130
GTS ID 15131
Post Mile: MRN – 101

Barry Miller, Project Manager
City of San Rafael
1400 Fifth Ave. P.O. Box 15160
San Rafael, CA 94915

General Plan 2040 and Downtown Precise Plan – Notice of Preparation (NOP)

Dear Barry Miller:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. In tandem with the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), Caltrans mission signals a modernization of our approach to evaluating and mitigating impacts to the State Transportation Network (STN). Caltrans' *Strategic Management Plan 2015-2020* aims to reduce Vehicle Miles Travelled (VMT) by tripling bicycle and doubling both pedestrian and transit travel by 2020. Our comments are based on the NOP.

Project Understanding

The City is preparing a *Downtown Precise Plan (Precise Plan)* concurrently with the *General Plan 2040*. The Precise Plan is being funded by a grant from the Metropolitan Transportation Commission. The intent of the Precise Plan is to facilitate housing production, placemaking, economic vitality, innovative transportation solutions, and community engagement with an emphasis on sustainable, transit-oriented development. Both the proposed *General Plan 2040* and the *Downtown Precise Plan* will direct future growth within the study area and address the city's vulnerability to environmental challenges such as sea level rise, wild land fires, and other hazards identified in the *City's Local Hazard Mitigation Plan* and updated *Climate Action Plan*. Both plans are intended to respond to local and regional housing needs, foster economic growth and local job creation, enhance civic identity and placemaking, and protect sensitive natural resources.

Lead Agency

As the Lead Agency, the City of San Rafael is responsible for all project mitigation, including any needed improvements to the STN. The project's financing, scheduling, implementation responsibilities and monitoring should be fully discussed for all proposed mitigation measures, prior to the submittal of an encroachment permit. Potential mitigation measures that include the requirements of other agencies—such as Caltrans—are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the Lead Agency.

Encroachment Permit

Please be advised that any work or traffic control that encroaches onto the State ROW requires an encroachment permit that is issued by Caltrans. To obtain an encroachment permit, a completed encroachment permit application, environmental documentation, and six (6) sets of plans clearly indicating the State ROW, and six (6) copies of signed and stamped traffic control plans must be submitted to: Office of Encroachment Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. To download the permit application and obtain more information, visit http://www.dot.ca.gov/hq/traffops/developserv/permits/.

Should you have any questions regarding this letter, please contact Michael McHenry at (510) 286-5562 or Michael.mchenry@dot.ca.gov.

Sincerely,

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

c. State Clearinghouse

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

ALAMEDA COUNTY
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Pauline Russo Cutter
Scott Haggerty
Nate Miley

CONTRA COSTA COUNTY
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Lori Wilson

SONOMA COUNTY
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Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

Connect with the
Bay Area Air District:

April 29, 2019

Mr. Barry Miller
City of San Rafael
Community Development Department
1400 Fifth Street
San Rafael, CA 94901

RE: Notice of Preparation of the Draft Environmental Impact Report for the General Plan 2040 and Downtown Precise Plan

Dear Mr. Miller:

Bay Area Air Quality Management District (Air District) staff reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the General Plan 2040 and Downtown Precise Plan (Plan). As we understand, the City will prepare a programmatic level DEIR to evaluate proposed policies of the Plan to determine if any of the future changes will have potential impacts on the environment. Per the NOP, both the proposed General Plan 2040 and the Downtown Precise Plan will direct the City's future growth and are intended to respond to local and regional housing needs.

The Air District has the following specific comments on the environmental analysis that we encourage the City to include in the Plan DEIR:

1. Please provide a detailed analysis of the Plan's potential effects on local and regional air quality. We recommend the DEIR include a discussion on the Air District's attainment status for all criteria pollutants and the implications for the region if these standards are not attained or maintained by statutory deadlines; and a discussion of the health effects of air pollution. The Air District's *CEQA Air Quality Guidelines (May, 2017)* provide guidance on how to evaluate a Plan's construction, operational and cumulative air quality impacts. A copy may be downloaded from: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa

2. Include in the DEIR an assessment of the potential health risk to current and future sensitive populations within the Plan area from toxic air contaminants (TACs) and fine particulate matter (PM2.5) as a result of Plan build-out. Please include in the assessment an evaluation of potential cumulative health risks from the Plan including impacts from stationary sources, highways, major roadways, and rail lines in the Plan area.

3. The DEIR should also identify, evaluate and include measures to reduce criteria pollutants such as reactive organic gases (ROG), nitrogen oxides (NOx) and fine particulate matter (PM 2.5) and incorporate measures to reduce toxic air contaminants (TACs) to minimize any potential air quality impacts. The Air District's *CEQA Air Quality Guidelines* can assist in identifying and quantifying emission reduction measures.

4. We recommend the DEIR evaluate the Project's consistency with the Air District's *2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Plan).* The Air District's *2017 Plan* may be found on the Air District's website: http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans

5. To address air quality issues early in the planning process we suggest the City review the Air District's Planning Healthy Places guidance document for recommended best practices to reduce exposure and health risk to sensitive populations in local communities. Planning Healthy Places can be found on the the Air District's website: http://www.baaqmd.gov/plans-and-climate/planning-healthy-places

6. We recommend the DEIR include a discussion of greenhouse gas (GHG) emissions and the potential impacts based on an evaluation of the Plan's consistency with the California Air Resources Board's (CARB) 2017 Climate Change Scoping Plan and with the State's 2030 and 2050 climate stabilization goals. We also recommend aggressive, creative, climate policies and programs in the Plan.

7. Staff recommends all feasible emission reduction measures be implemented for potentially significant air quality impacts identified in the DEIR.

8. The DEIR should provide a map that clearly identifies the Plan's boundary; existing and future planned sensitive receptors (e.g., residences, schools, day cares, hospitals, and nursing care facilities), and all stationary sources, highways, major roadways, and rail lines within the Plan area.

9. Please discuss how the Plan will address Senate Bill 1000 the Planning for Healthy Communities Act (SB 1000). SB 1000 became effective January 1, 2018. With SB 1000, all California jurisdictions are now required to consider environmental justice issues in their General Plans. SB 1000 requires local jurisdictions that identify disadvantaged communities within the area covered by the city or county's general plan to adopt an Environmental Justice (EJ) element or incorporate EJ goals and policies into other elements of that city's general plans. The bill allows consideration to be given to low-income communities disproportionately affected by pollution and other EJ issues.

Please include in the DEIR all appendices or technical documents related to the air quality, toxic air contaminant, and GHG analyses, such as emission calculation and health risk assessment files. Without all the supporting air quality and GHG documentation, Air District staff and the public may be unable to review the air quality and GHG analysis in a timely manner.

The Air District's website contains a number of tools and resources to assist lead agencies in analyzing environmental impacts, including: previous CEQA comment letters; guidance on quantifying plan level GHG emissions; and risk and hazard screening tools and guidance. View and download available tools here: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools

We urge lead agencies to contact Air District staff with any questions and/or to requested assistance during the environmental analysis process. If you have any questions regarding these comments, please contact Andrea Gordon, Senior Environmental Planner at, agordon@baaqmd.gov or 415.749.4940.

Sincerely,

Greg Nudd
Deputy Air Pollution Control Officer

cc: BAAQMD Director Katie Rice

Barry Miller

From: THPO@gratonrancheria.com
Sent: Wednesday, April 10, 2019 12:19 PM
To: Barry Miller
Subject: City of San Rafael, General Plan 2040

Dear Barry Miller,

Thank you for notifying the Federated Indians of Graton Rancheria about City of San Rafael, General Plan 2040, a project within the Tribe's Ancestral Territory. We appreciate being notified and will review your project within 10 business days. If you have an immediate request please contact the Tribal Heritage Preservation Office for assistance by phone at (707) 566-2288 or by email at thpo@gratonrancheria.com.

Sincerely,
Buffy McQuillen
Tribal Heritage Preservation Officer (THPO)
Native American Graves Protection and Repatriation Act (NAGPRA)
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291

Antonette Tomic
THPO Administrative Assistant
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 143
Fax: 707.566.2291
atomic@gratonrancheria.com

please consider our environment before printing this email.

Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential
CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office at 707-566-2288, and immediately delete this message and all its attachments, if any. Thank you.

First Name: Brandy
Last Name: Wilson
Email Address: wilson.girazian@gmail.com
Phone Number: 4153143152
Subject: EIR for General Plan 2040

Message: Hi Barry, As the City and the planning commission contemplate the EIR for the General Plan 2040, please include the entirety or Boyd Park and the Falkirk Mansion with the boundary for the Precise Plan for Downtown San Rafael. The National Climate Assessment estimates between now and 2050, San Rafael will 3.5 degrees Fahrenheit warmer. That will dramatically increase the risk of a catastrophic fire that would most directly impact Downtown. As we have already witnessed the threat of the San Rafael Hill catching fire multiple times, the danger is very real and, with increased population density downtown, needs to resourced accordingly. Thank you, Brandy Wilson

A:
LOCATION
1114 Mission Ave
San Rafael CA 94901-2915

sustainable SAN RAFAEL
SUSTAINABLESanRafael.org

BOARD OF DIRECTORS
William Carney, President
Bob Spofford, Vice President
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Kay Karchevski
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Jesse Madsen
Samantha Mericle
Sue Spofford

415.457.7656

166 Greenwood Avenue
San Rafael, CA 94901

April 26, 2019

Barry Miller, Consulting Project Manager
City of San Rafael Community Development Department
1400 Fifth Avenue
San Rafael, CA 94901

Re: General Plan 2040 and Downtown Precise Plan EIR

Dear Mr. Miller,
Sustainable San Rafael offers the following comments on the scope and content of the proposed EIR on the City's draft General Plan 2040 and Downtown Precise Plan ("the Plans").

A. Anticipated Changes
The Plans are being developed to address a period of time during which unusually large changes are occurring. The EIR should thoroughly assess the efficacy of the proposed policies and programs to successfully meet these major areas of change:

1. Housing shortages, less affordability, more homelessness.
2. Retail moving online, employment decentralizing.
3. Traffic congestion, transportation innovations.
4. Climate Change and natural system stresses.
5. Diversity and equity challenges.
6. Community character evolving in response to these changes.

B. Basic Alternatives
We believe that five basic alternatives can be used to frame the relative success of the Plans in addressing these changes. Since climate change, and sea level rise in particular, is among the most intractable of the changes facing the city, it figures significantly in all alternatives.

1. No Plan scenario. For this EIR, this 'no project' scenario is likely to have the most impacts, since the purpose of the Plans is to reduce the negative impacts of inaction and 'business-as-usual.'

2. Protection of existing development from sea level rise. The EIR needs to assess the impacts and feasibility of engineered or 'living' levees (and floodgates, as needed) to preserve developed land along the shoreline, much of which was 'reclaimed' from the Bay by earlier levees. The assessment should include how high these levees would need to be, how long they would need to remain functional, their adaptability to be heightened further in the future, and their impact on the development they protect. The cost of the levees, value of assets protected, and financing and maintenance strategies also need to be assessed.

3. Relocation and consolidation of vulnerable development. Relocating a portion of the development in East San Rafael (existing and/or new) to safer infill sites further inland is another option. The EIR should assess how the resulting consolidation of development could help or hinder the city's overall housing goals, economic vitality, transportation and other infrastructure, diversity and equity, and physical character. Transition of the shoreline to water-oriented commercial, recreational, natural, and houseboat uses should also be assessed for all alternatives.

4. Continuing sea level rise scenario. Since there are credible projections that the climate change now underway could precipitate large-scale melting of polar ice caps, triggering ongoing sea level rise on an uncertain timeline, it may be prudent for the EIR to test the Plans' impacts on the City's abilities to deal with such continuing and cumulative change. An alternative assuming the gradual transformation of the largest public investment in the region, the 101 and 580 freeway rights-of-way, to serve as both an elevated transportation and infrastructure spine and a levee protecting inland areas, could provide valuable insight into the long-term viability of the Plans.

5. Comprehensive planning scenario (the draft Plans). This 'project alternative' represents how the city can comprehensively balance the opportunities and challenges inherent in the various changes underway, now and for the long-range future. We believe the EIR should pay particular attention to the degree of co-benefit and integration among the multiple policies and programs in the Plans, and suggest mitigations that increase such synergy. For example, transportation improvements like providing a shoreline bike path or raising a flood-prone portion of freeway could be combined with 'living levees' protecting inland areas from sea level rise, while enhancing habitat and recreation. Combining solutions to several issues at once could suggest cost-efficient mitigations addressing the complexity of the changes occurring.

C. Necessary Benchmarks

Several key metrics need to be established and mapped by the EIR to provide the basis for evaluating these alternatives.

1. Sea level rise expected by 2100. (Use *highest* current BCDC and Marin County projections.)(Alternatives 1 – 3 and Alt. 5.)
2. Sea level rise expected by *2140* if global temperature rise stays within 2 degrees Celsius. (Use *highest* IPCC projections.)(Alt. 4.)
3. Housing numbers, types and affordability levels to accommodate the city's current population and workforce.
4. Housing numbers, types and affordability levels to accommodate projected population and workforce by 2040.

D. Key Policies and Programs

A number of the policies and programs included in the draft Plans so far discussed will be particularly significant in meeting the anticipated changes and should be considered closely in the EIR analysis of the project and the alternatives.

1. Greater housing densities and heights in infill development, especially in Downtown, North San Rafael town center, and commercial districts along major arterials.

2. Mixed-use development, incorporating both housing and jobs.

3. Continued and enhanced affordable housing bonuses.

4. Accessory Dwelling Unit incentives.

5. Innovative and 'interim' building types, such as modular and movable building units, tiny homes, and houseboats.

6. Greater use of Transferable Development Rights (TDRs).

7.VMT and Transportation Management Plan standards.

8. Neighborhood commercial nodes and increased walkability.

9. Increased transit connectivity.

10. Sea level rise overlay zones.

10. Completing a community-based Climate Adaptation Plan.

11. Coordination with County BayWAVE and related efforts.

12. Integrating Local Hazard Mitigation Plan into Environmental Hazards, Transportation and other elements.

13. Integrating Wildfire Action Plan into Conservation element.

14. Continued reduction of greenhouse gases through integration of CCAP2030 measures throughout the Plans—including enhanced coordination, advocacy and funding of such measures at regional, state and federal levels.

15. Extending CCAP2030 objectives and measures on a straight-line basis to achieve 70% GHG reductions by 2040.

16. Refining and applying the zoning and other recommendations of the Downtown Station Area and Civic Center Station Area

Plans, and the findings of the Transit Center Relocation EIR.

17. Enhancing waterfront usage per the Canalfront Plan.

Approached in this manner, we believe that the General Plan 2040 and Downtown Precise Plan, and the associated EIR, can offer our community valuable guidance for a positive future. Thank you for your careful consideration.

Sincerely,

William Carney and Linda Jackson,
Sustainable San Rafael Board of Directors

April 28, 2019

Barry Miller, City of San Rafael
1400 Fifth Avenue
San Rafael CA 94901
Barry.Miller@cityofsanrafael.org

Subject: Scoping comments for SR GP 2040 EIR

The Gallinas Watershed Council is a private, volunteer group of residents in the 94903 area who love the Gallinas creek and want to see it restored. Our group was formed in June 2008 to help promote good watershed management, assist in keeping the creek free of trash, and to push for policies at the city and county level to support creek restoration. The headwaters and the San Pablo Bay marshland stretches of this creek are in county jurisdiction and maintain good ecological function. However, the middle stretch, in the City of San Rafael, does not.

Gallinas Creek was put into a concrete trapezoidal channel in the early 1960's when Terra Linda was being developed. This concrete is reaching the end of its life and will need replacement. Current thinking and planning for good watershed management is moving away from the 1950's era of speeding water off the landscape via a concrete ditches and now looking at integration of creeks and waterways as important community amenities as well as a source of other environmental benefits, such as improved water quality and wildlife habitat.

Towards that end, the US Army Corps of Engineers, The Bay Institute, MCSTOPPP and other partners hired Kamman Hydrology and Engineering to do a *Restoration Feasibility Study and Hydrology Report*[1] (Dec. 2004). This report validated the idea that restoration could proceed without losing important flood protection and laid out four alternative scenarios. Following that report, the Santa Margarita homeowners raised funds via their "Recreate the Creek" project, in conjunction with the city of San Rafael and other partners, to begin a restoration process on the Santa Margarita Creek branch of Gallinas Creek. These reports and projects were in alignment with the November, 2002 San Rafael convened community stakeholder group's plans for the 94903 area which developed the *2010 North San Rafael*

[1]https://www.gallinaswatershed.org/about/gallinas-creek-hydrology-report.htmlpH8TbU_RNQ%3D%3D&attredirects=0

Vision Promenade Conceptual Plan[2]. This group envisioned a safe, walkable and bikeable path from upper Terra Linda to the Civic Center to mitigate the split in the community caused by the widening of Highway 101. More recently the city of San Rafael, in conjunction with the Watershed Program of Marin County, produced a plan[3] that showed three alternatives for restoring the main stem of Gallinas Creek from Freitas Parkway at Las Gallinas Ave to the intersection at Del Ganado.

In line with all of these historic city, county and community projects and plans, we are asking for language in the EIR to support the restoration of Gallinas Creek. In particular, we ask the consultant to focus on:

- Consideration of the economic, social, environmental, health and safety, etc. benefits of restoring Gallinas Creek according to the Marin County report Upper Gallinas Creek Restoration Opportunities.

- Explore traffic analysis and options along Freitas parkway, including traffic studies at different times of day, to determine current traffic needs on Freitas Parkway above Las Gallinas Ave. Explore other options for traffic calming or traffic redirection in order to implement the Promenade Vision and full Gallinas Creek restoration in this stretch. Recognize that the four lanes of traffic along Freitas were put in assuming future development, including a highway over the hill into Sleepy Hollow, plans which are now obsolete and invalid.

- Explore a continuation of creek restoration/daylighting further up the corridor, along Freitas Parkway and including the Santa Margarita creek tributary along Los Gamos Ave.

- Enumerate other cities' funding structures, from new development and/or from state, federal and local grant programs that support creek restorations, parkland, and other community benefits.

- Align City policies with state, local, and federal policies protecting waters of the state and the endangered species act, recognizing that the Gallinas marsh is home to several threatened and endangered species, including the Black Rail, Ridgway's Rail and Salt Marsh Harvest Mouse.

In addition, the 94901 portion of the city of San Rafael hosts several other small watersheds that should be examined for restoration opportunities. These include Mahon Creek, San Rafael Creek, Erwin Creek, Black Canyon, Sister's, Glenwood and Peacock Gap creeks and their unnamed tributaries. In particular, certain

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[2] https://www.cityofsanrafael.org/documents/north-san-rafael-vision-promenade-conceptual-plan/

[3] https://www.marinwatersheds.org/sites/default/files/2017-05/GWPUpperGallinasCreekRestorationOpportunities_FINAL_12.07.16.pdf

culverted sections may be failing and could be opened to daylighting, improving access to the public and better water quality.

- Develop full maps for all San Rafael city creeks, including ephemeral drainages, showing daylighted and culverted sections, connections to storm drains, as well as adjoining parklands and open space that currently exist.

- Consider funding opportunities for watershed restoration within city limits, including economic benefits realized by other communities from restored watersheds, daylighted creeks, urban setbacks to increase green parklands, tree planting for urban heat island mitigation and creek shading for water quality and wildlife protection, etc.

- Analyze the open creek area behind Second, Third and Fourth Street businesses at the west end (between D and H streets) and the upstream area in Sun Valley/West End to daylight creeks and develop floodplain support where possible to reduce impacts of downstream flooding and to protect water quality.

Through out all city elements of the 2040 General Plan:

- Include Green Streets policy information to complement Complete Streets and LID policies

- Consider latest scientific and policy benefits of increasing pervious landscapes around malls, industry parking lots and city properties for groundwater infiltration for protection against drought, wildfire and flooding. This would include rain gardens, biofiltration detention areas, etc.

- Look for opportunities to daylight creeks and create safe wildlife corridors as well as greenway parks for people to be in nature and away from the built environment/traffic. Studies have shown measurable results in improved health and longevity for people living in areas where they can interact in nature on a regular basis. This is in alignment with the PCA element of ABAG's planning and a vitally important design element where densities are increasing.

Sincerely,

Margaret Johnston
GWC representative to SR's 2040 General Plan

Judy Schriebman
GWC alternate representative to SR's 2040 General Plan

GALLINAS WATERSHED COUNCIL
PO Box 4284, San Rafael, CA 94913

April 28, 2019

Barry Miller, City of San Rafael
1400 Fifth Avenue
San Rafael CA 94901
Barry.Miller@cityofsanrafael.org

Subject: Scoping comments for SR GP 2040 EIR

The Gallinas Watershed Council is a private, volunteer group of residents in the 94903 area who love Gallinas Creek and want to see it restored. Our group was formed in June 2008 to help promote good watershed management, assist in keeping the creek free of trash, create community, business and agency partnerships, and push for policies at the City and County level to support creek restoration. The headwaters and the San Pablo Bay marshland stretches of this creek are in county jurisdiction and maintain good ecological function. However, the middle stretch, in the City of San Rafael, does not.

Gallinas Creek was put into a concrete trapezoidal channel in the early 1960's when Terra Linda was being developed. This concrete is reaching the end of its life and will need replacement. Current thinking and planning for good watershed management is moving away from the 1950's era of speeding water off the landscape via concrete ditches and now looking at integration of creeks and waterways as important community amenities as well as a source of other environmental benefits, such as improved water quality and wildlife habitat.

Towards that end, the US Army Corps of Engineers, The Bay Institute, MCSTOPPP, and other partners hired Kamman Hydrology and Engineering to do a *Restoration Feasibility Study and Hydrology Report*[1] (Dec. 2004). This report validated the idea that restoration could proceed without losing important flood protection and laid out four alternative scenarios. Following that report, the Santa Margarita homeowners raised funds via their "Recreate the Creek" project, in conjunction with the city of San Rafael and other partners, to begin a restoration process on the Santa Margarita Creek branch of Gallinas Creek. These reports and projects were in alignment with the November, 2002 convened San Rafael

[1]https://www.gallinaswatershed.org/about/gallinas-creek-hydrology-report.htmlpH8TbU_RNQ%3D%3D&attredirects=0

community stakeholder group whose mission for the 94903 area developed the *2010 North San Rafael Vision Promenade Conceptual Plan*[2]. This group envisioned a safe, walkable and bikeable path from upper Terra Linda to the Civic Center to mitigate the split in the community caused by the widening of Highway 101. More recently the city of San Rafael, in conjunction with the Watershed Program of Marin County, produced a plan that showed three alternatives for restoring the main stem of Gallinas Creek from Freitas Parkway at Las Gallinas Ave to the intersection at Del Ganado.

In line with all of these historic city, county and community projects and plans, we are asking that the draft EIR evaluate alternatives that support the restoration of Gallinas Creek. In particular, we want the scope of the EIR to include:

- Consideration of the economic, social, environmental, health and safety, etc. benefits of restoring Gallinas Creek according to the Marin County report *Upper Gallinas Creek Restoration Opportunities.*[3]

- Traffic analysis and options along Freitas parkway, including traffic studies at different times of day, to determine current traffic needs on Freitas Parkway above Las Gallinas Ave. Exploration of other options for traffic calming or traffic redirection in order to implement the Promenade Vision and full Gallinas Creek restoration in this stretch. Recognize that the four lanes of traffic along Freitas were put in assuming future development, including a highway over the hill into Sleepy Hollow, plans which are now obsolete and invalid.

- Exploring a continuation of creek restoration/daylighting further up the corridor, along Freitas Parkway and including the Santa Margarita creek tributary along Los Gamos Ave.

- An analysis of other cities' funding structures, from new development and/or from state, federal and local grant programs that support creek restorations, parkland, and other community benefits.

- Aligning City policies with state, local, and federal policies protecting waters of the state and the endangered species act, recognizing that the Gallinas marsh is home to several threatened and endangered species, including the Black Rail, Ridgway's Rail and Salt Marsh Harvest Mouse.

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[2] https://www.cityofsanrafael.org/documents/north-san-rafael-vision-promenade-conceptual-plan/

[3] https://www.marinwatersheds.org/sites/default/files/2017-05/GWPUpperGallinasCreekRestorationOpportunities_FINAL_12.07.16.pdf

In addition, the 94901 portion of the city of San Rafael hosts several other small watersheds that should be examined for restoration opportunities. These include Mahon Creek, San Rafael Creek, Erwin Creek, Black Canyon, Sister's, Glenwood and Peacock Gap creeks and their unnamed tributaries. In particular, certain culverted sections may be failing and could be opened to daylighting, improving access to the public and better water quality. The scope of the Draft EIR should also include:

- Full maps for all San Rafael city creeks, including ephemeral drainages, showing daylighted and culverted sections, connections to storm drains, as well as adjoining parklands and open space that currently exist.

- Consideration of and possible funding opportunities for watershed restoration within city limits, including economic benefits realized by other communities from restored watersheds, daylighted creeks, urban setbacks to increase green parklands, tree planting for urban heat island mitigation and creek shading for water quality and wildlife protection, etc.

- Analysis of the open creek area behind Second, Third and Fourth Street businesses at the west end (between D and H streets) and the upstream area in Sun Valley/West End to daylight creeks and develop floodplain support where possible to reduce impacts of downstream flooding and to protect water quality.

Please include in the draft EIR opportunities throughout all elements of the 2040 General Plan to:

- Include Green Streets policy to complement Complete Streets and LID policies

- Consider latest scientific and policy benefits of increasing pervious landscapes around malls, industry parking lots and city properties for groundwater infiltration for protection against drought, wildfire and flooding. This would include rain gardens, biofiltration detention areas, etc.

- Find opportunities to daylight creeks and create safe wildlife corridors as well as greenway parks for people to be in nature and away from the built environment/traffic. Studies have shown measurable results in improved health and longevity for people living in areas where they can interact in nature on a regular basis. This is in alignment with the PCA element of ABAG's planning and a vitally important design element where densities are increasing.

In addition, we were unable to find where the light pollution element exists in the 2040 plan but, like noise pollution, it needs to be included. Humans evolved to

the rhythms of the natural light-dark cycle of day and night. The spread of artificial lighting means most of us no longer experience truly dark nights.

Research suggests that artificial light at night can negatively affect human health, increasing risks for obesity, depression, sleep disorders, diabetes, breast cancer and more. The International Dark Skies Association[4] recognizes the impacts of light pollution on wildlife and human health. Protection of the night sky and avoidance of light pollution should be incorporated wherever lighting is proposed or changed, both for city structures and for individual homes. We ask that the EIR:

- Incorporate BMPs for reduction of light pollution, especially light spilling into marshes, parks and wildlife areas and upward into the sky in every aspect of the 2040 General Plan
- Develop a list of fixtures and bulbs that promote healthy, safe lighting while protecting our need for darkness
  Consult the Dark Skies Association website for up to date ordinance and policy language, fixture recommendations, and develop a plan for priority replacement

We appreciate this opportunity to add our scoping comments to the EIR.

Sincerely,

Margaret Johnston
GWC representative to SR's 2040 General Plan

Judy Schriebman
GWC alternate representative to SR's 2040 General Plan

[4] http://www.darksky.org/about/

April 29, 2019

Barry Miller, Consulting Project Manager
City of San Rafael
Community Development Department
1400 Fifth Street
San Rafael, CA 94901
Barry.Miller@cityofsanrafael.org

RE: Scoping comments for San Rafael's General Plan 2040 and Downtown Precise Plan EIR

Dear Barry:

I am a member of the following committees and organizations: San Rafael's 2040 General Plan update steering committee, San Rafael's Bicycle Pedestrian Advisory Committee, Transportation Authority of Marin's Citizen Oversight Committee, and board member and past president of Marin Conservation League. My interests are in land use and transportation planning that supports and improves natural resource protection and watershed restoration. The following are my scoping comments for the preparation of the draft environmental impact report.

I request that the EIR analyze impacts from each alternative as described on page 2 of the Notice of Preparation, "CEQA requires that an EIR evaluate alternatives to a project that could reasonably attain the project objectives while reducing any significant impact of the project, as well as considering the 'No Project' Alternative", with an equal level of detail. I also request that the EIR analysis include anticipated impacts during periods of construction, for the expected life of possible projects, and cumulative impacts of implementation of policies and programs detailed in the General Plan Update. All alternatives and cumulative analysis should include description, impacts, and mitigations from projects currently under review by the City and/or under construction, including the SMART extension to Larkspur and the relocation of San Rafael's transit center, among others.

Transportation/Traffic

Transportation impacts should include new and updated traffic and congestion models and analysis of all major roadways, including measurements of existing traffic loads and road capacity, current and projected levels of service, as well as current and projected greenhouse gas emissions and air pollution due to motor vehicles and congestion. The EIR's analysis should include recent studies by San Rafael's Department of Public Works, the recent Kimley Horn study of the 3rd and Hetherton intersection, the Third Street Rehabilitation Project, and should include available congestion management analysis and traffic data from Marin County's Transportation Authority of Marin. Major roadways should include Lucas Valley/Smith Ranch Road, Freitas Parkway, Las Gallinas Avenue, Nova Albion, Los Ranchitos and Lincoln Avenue, North and Point San Pedro Roads, Irwin, Grand, and Hetherton, East and West Francisco Boulevards, Andersen and Bellam, Kerner, Canal Street and other major roadways in the Canal, and Second, Third, Fourth, Fifth and Mission in downtown among others.

The EIR should describe and analyze impacts from 2040 GP policies or programs on the following:

- Vehicle backups onto highway ramps and adjacent streets. Identify streets and neighborhoods that would experience increased traffic backups, at what times, along with proposed mitigations.
- Vehicle traffic and congestion along major east-west arteries, like 2nd and 3rd streets, as well as north-south arteries.
- Impacts to local roads and highways during emergencies and evacuations, such as during wildfire or flood.
- Sight distances for drivers especially at intersections.
- Identified parking for shoppers, office and hospital (Kaiser) visitors, as well as for transit users. What parking would be removed and what parking spaces would be added under alternative policies?
- Impacts to downtown businesses including the east segment of 4th Street.

Also:

- San Rafael has goals of reduced congestion and improved safe passage for pedestrians and bicyclists in all directions. To what extent will 2040 GP policies augment implementation of the updated Bicycle Pedestrian Masterplan?
- Describe how alternatives will increase public transportation ridership, providing efficient, safe and comfortable experiences for users. Increased ridership will help San Rafael, and other jurisdictions, meet greenhouse gas reduction goals in their climate action plans. The EIR should assess net impacts of San Rafael's General Plan update to greenhouse gas emissions by incentivizing ridership.
- Impacts from transition to electric vehicles, and other developing technologies such as autonomous vehicles, should also be described.
- Completion of the North-South Greenway multiuse path segment through San Rafael, from 2nd Street north to Mission Street along Tamalpais Avenue, is an important link in the pathway corridor. Describe the compatibility and impacts of GP planning on this planned route.
- A priority for San Rafael families is that students are able to walk and bike safely and comfortably through downtown to Davidson Middle School and San Rafael High School from residential neighborhoods on the opposite sides of the freeway. Describe how alternatives will positively or negatively impact safe, comfortable east-west circulation under the highway for students and all other users to access schools, shops and services.

<u>Air quality and greenhouse gas emissions</u>

The EIR should describe and analyze impacts of GP policies on air quality, including odors, as well as cumulative and net increases in air pollutants and greenhouse gas emissions from changes in land use as well as transportation.

<u>Noise and Light</u>

The EIR should assess the extent to which GP alternatives would contribute to light, glare and noise pollution and how these impacts can be mitigated.

Hydrology and water quality

The EIR should show existing creeks and wetlands on site maps, and state impacts or changes resulting from sea level rise scenarios as outlined in the County of Marin's Bay Waterfront Adaptation and Vulnerability Evaluation (BayWAVE). The report catalogs effects of three different water elevation projections for near, mid, and far term periods, with and without a 100-year storm. Projects should consider at minimum the projections for near and mid-term time periods, estimated to be about 10 and 30 years or less.

The EIR should identify General Plan policies that will meet the goals of "climate-safe infrastructure" as set forth in the California Natural Resource Agency's recent report "Paying it Forward: The Path Toward Climate-Safe Infrastructure in California" and describe adaptation strategies to flooding.

The EIR should describe cumulative anticipated rates and volumes of stormwater runoff, drainage capacity of stormwater management systems and any needed expansion, filtration into the Las Gallinas and San Rafael Creek watersheds and possible soil erosion and loss of topsoil due to anticipated large storm events and flooding. Include proposed mitigations, especially for alternatives that would alter existing creeks or flows. Watershed restoration and improvements to hydrologic function of natural systems should occur whenever possible in conjunction with transportation improvements.

Identify areas that would place housing and other structures within a 100-year flood hazard area and current and future areas where people and structures would suffer damage due to failure of dam, levee or flood control infrastructure.

Assess toxicity of soils and describe how sediment and any contaminants will be prevented from entering creek systems and the nearby estuary. Describe how stormwater will be filtered to meet the California State Water Quality Control Board's regulations for Phase II small municipal separate storm sewer systems (M4S). Describe how restoration of creeks, trees and riparian vegetation, and installing green infrastructure and permeable pavement as elements of the alternatives would help mitigate flooding.

Biological resources

The EIR should describe biological resources in the City limit and Sphere of Influence Planning Area. The EIR should analyze GP policy impacts to nearby riparian or wetland habitats and their biological resources, both resident and migratory, including invertebrates, aquatic species and vegetation. Describe current urban wildlife habitat value and migratory corridors and how they will be protected.

San Rafael is a "Tree City". Trees contribute to stormwater reduction, improve air quality and contribute to carbon sequestration and greenhouse gas reduction, lower ambient air temperatures and counteract urban heat island effects, buffer noise, wind, and odors. They provide beneficial visual impacts and provide needed habitat for urban and migrating birds, wildlife and insects (including pollinators). The EIR should identify the impacts from increasing the number of trees throughout the City especially as they grow and as their canopies spread over time.

Aesthetics

Describe the viewshed of the surrounding hills. Provide simulations of how scenic views from a variety of angles will be impacted from future growth.

Population and Housing

The EIR should assess impacts and the cumulative effects of alternative development scenarios on population growth and increases in housing production.

An alternative that should be evaluated is one in which San Rafael makes small investments in growth allowing every neighborhood to evolve gradually over a longer period of time throughout the City limits and that of its Sphere of Influence. San Rafael's success and failure in adapting to sea level rise and impacts from climate change will depend largely on identifying and addressing both San Rafael's unique challenges as well as how it fits into the larger landscape of Marin County and the Bay Area. A longer time frame for gradual growth will provide opportunities for greater adaptation.

The EIR should address the impacts of climate change on land use and development in existing communities and new ones. How will displacement due to environmental hazards be mitigated and those displaced absorbed into the existing community?

The EIR should address impacts of housing policies that not only address housing supply but also impacts of how they might support and improve neighborhood services and the infrastructure of the public realm including streets and pathways, creeks and watersheds, trees, urban parks and green spaces and management of city-owned open spaces.

The EIR should include anticipation of California's housing legislation under current debate and its potential impacts on San Rafael's desired height limits and density. The EIR should assess impacts of San Rafael's General Plan housing policies on renters and homelessness. Will growth and development policies incentivize affordable housing that is truly affordable?

Finally, the EIR should assess, to the extent possible, how the new General Plan's policies will increase San Rafael's resilience, flexibility for change, and financial vitality.

Thank you for the opportunity to provide comments on the scope of the upcoming 2040 General Plan draft EIR.

Sincerely,

Kate Powers

Los Ranchitos Improvement Association
P.O. Box 4146
San Rafael CA 94913 - 4146

April 29, 2019

Barry Miller, Consulting Project Engineer
City of San Rafael
Community Development Department
1400 Fifth Street
San Rafael, CA, 94901

Subject: General Plan 2040 and Downtown Precise Plan EIR

Dear Mr. Miller:

The Los Ranchitos Improvement Association (LRIA) represents over 160 homes in the 94903 area. We have the following three requests for the EIR on SR's 2040 GP update:

1. Consider impacts of removing Los Ranchitos from San Rafael's Sphere of Influence (SOI)
2. Consider impacts of Los Ranchitos being a designated Community Separator in the Marin County General Plan consistent with the 2008 Marin County Open Space District's Strategic Master Plan
3. Align San Rafael's General Plan Open Space policies with the 2008 Marin County Open Space District's Strategic Master Plan

Background for removal from SOI
Reasonably Foreseeable Conditions: The County General Plan Open Space Element and the MCOSD Strategic Master Plan

Since inception in 1949, Los Ranchitos has been zoned for rural agriculture / light farming, equestrian use, 1-acre minimum size parcels, as recognized in the Marin County Agricultural Lands map filed with the state (see attached). During San Rafael's piecemeal annexation of the Terra Linda area, *prior to the formation of LAFCO in 1963*, Los Ranchitos was bypassed. The County created CSA#19 and, in conjunction with San Rafael, Los Ranchitos was placed into SR's SOI ***solely*** to supply the area with paramedic and fire protection services from the city of San Rafael.

Los Ranchitos is not expected to be annexed to the City within the time frame of the plan due to:

- Existing required services are adequately provided to Los Ranchitos, and *no reasonably foreseeable conditions indicate a future need for any additional urban services*
- Urban improvement upgrade costs associated with conversion of existing and satisfactory rural conditions (no sidewalks, no curbs, few streetlights) to urban standards
- Existing zoning and historical land uses supporting agricultural, light farming, and equestrian uses that are incompatible with urban usage
- *Any proposal for city annexation would pose a direct conflict with the County General Plan Open Space Element and the MCOSD Strategic Master Plan*
- Existing Ridge and Upland Greenbelt (RUG) designation over part of Los Ranchitos shows its role as community separator contiguous with priority MCOSD lands
- Strong landowner opposition precludes annexation

Background for Community Separator status and Open Space policies:
The MCOSD Open Space Strategic Master Plan

The MCOSD Strategic Master Plan was developed after San Rafael developed their 2020 General Plan. The 2040 GP will need to be consistent with the goals and priorities of this Master Plan.

The Land Conservation element of the 2008 MCOSD Strategic Plan targets preservation of lands within the Central Marin Ridgelands as a priority. From the MCOSD Plan, *"Targeted lands serve as community separators and greenbelts as defined in the Countywide Plan, as wildlife corridors, and as links to other public lands."* The Marin County General Plan Open Space element currently overlays the hilly terrain of Los Ranchitos with the Ridge and Upland Greenbelt (RUG) designation; is contiguous with MSOSD's priority Terra Linda/Sleepy Hollow divide lands; and serves as an important community separator between Terra Linda and San Rafael. The landowners of Los Ranchitos are actively working with Marin LAFCO, the MCOSD, and the Board of Supervisors to establish the entire Los Ranchitos area as a designated community separator in the update of the Marin County General Plan Open Space element, in order to be consistent with the MCOSD Open Space Strategic Master Plan and to remove the entire area from the City of San Rafael's sphere of influence.
Note: This conservation action is supported by the North Bay office of Greenbelt Alliance.

San Rafael's NOP and city planning maps only show the SOI city boundaries but do not break out this important Open Space/RUG distinction. LR is not an island but an extension, or peninsula, of the West Marin rural corridor. Our agricultural designation via zoning is part of the extension. Maps attached.

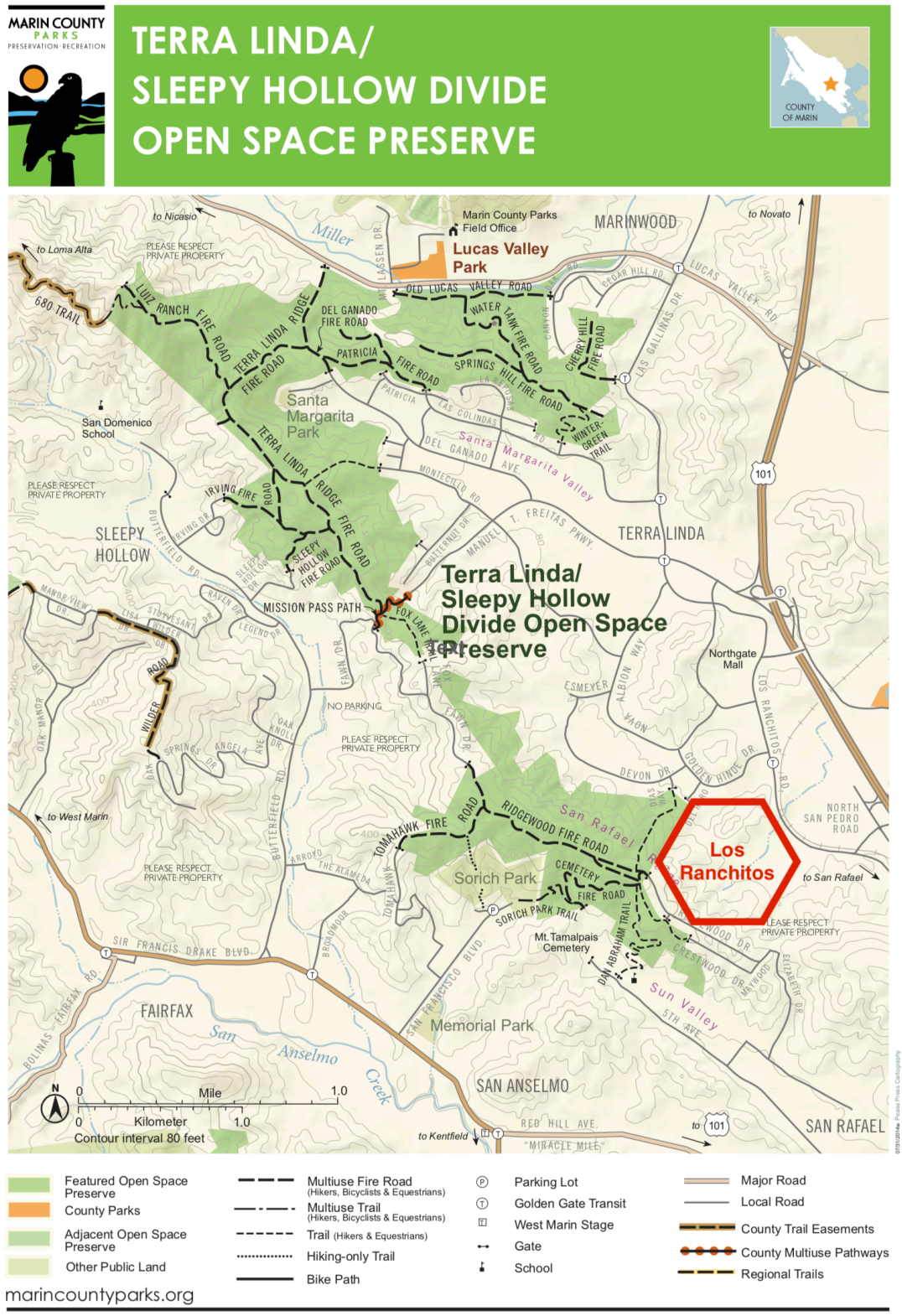
Sincerely,



Leyla R. Hill, President
Los Ranchitos Improvement Association (LRIA)
Preserving and Maintaining Los Ranchitos's unique way of life since 1952

Maps attached:
Marin County Agricultural Lands (Los Ranchitos highlighted)
Terra Linda/Sleepy Hollow Divide Open Space Preserve (Los Ranchitos highlighted)
MCOSD (Marin County Open Space District) Roads (Los Ranchitos highlighted)
San Rafael Planning Area Boundary Map


MARIN COUNTY AGRICULTURAL LANDS
LEGEND:
AGRICULTURALLY ZONED LAND PROTECTED BY MALT OR COUNTY CONSERVATION EASEMENTS
WILLIAMSON ACT PARCELS
AGRICULTURALLY ZONED LAND NOT PROTECTED BY CONSERVATION EASEMENTS OR WILLIAMSON ACT
PUBLIC LANDS
NON-AGRICULTURALLY ZONED LAND
SONOMA
COUNTY
TOMALES BAY
Marshall
POINT
REYES
Inverness
Pt. Reyes Station
Olema
NATIONAL
SEASHORE
DRAKES BAY
POINT REYES
NOVATO
SAN PABLO BAY
Woodacre
FAIRFAX
SAN ANSELMO
SAN RAFAEL
ROSS
LARKSPUR
CORTE MADERA
MILL VALLEY
Stinson Beach
Bolinas
TIBURON
BELVEDERE
Marin City
SAUSALITO
GOLDEN GATE NATIONAL RECREATION AREA
PACIFIC OCEAN
SCALE IN MILES
0 1 2 3 4 5
COMMUNITY DEVELOPMENT AGENCY MAPPING & GRAPHICS
COUNTY OF MARIN
Los Ranchitos Agriculturally Zoned Land and adjacent Public Lands highlighted 4/29/19


MARIN COUNTY PARKS
PRESERVATION · RECREATION
TERRA LINDA/
SLEEPY HOLLOW DIVIDE
OPEN SPACE PRESERVE
COUNTY OF MARIN
Marin County Parks Field Office
Lucas Valley Park
MARINWOOD
to Nicasio
to Novato
to Loma Alta
PLEASE RESPECT PRIVATE PROPERTY
Miller
LASSEN DR.
OLD LUCAS VALLEY ROAD
CEDAR HILL RD.
LUCAS VALLEY RD.
LAS GALLINAS DR.
680 TRAIL
LUIZ RANCH FIRE ROAD
TERRA LINDA RIDGE FIRE ROAD
DEL GANADO FIRE ROAD
PATRICIA FIRE ROAD
WATER TANK FIRE ROAD
CHERRY HILL FIRE ROAD
SPRINGS HILL FIRE ROAD
Santa Margarita Park
San Domenico School
LAS COLINDAS RD.
WINTER GREEN TRAIL
DEL GANADO
Santa Margarita Valley
MONTECITO RD.
101
IRVING FIRE ROAD
SLEEPY HOLLOW
TERRA LINDA
FREITAS PKWY.
SLEEPY HOLLOW FIRE ROAD
Terra Linda/
Sleepy Hollow
Divide Open Space
Preserve
MISSION PASS PATH
Northgate Mall
NO PARKING
ESMEYER
ALBION WAY
LOS RANCHITOS RD.
DEVON DR.
GOLDEN HIND DR.
NORTH SAN PEDRO ROAD
to West Marin
TOMAHAWK FIRE ROAD
RIDGEWOOD FIRE ROAD
San Rafael
Los Ranchitos
to San Rafael
Sorich Park
CEMETERY FIRE ROAD
SORICH PARK TRAIL
Mt. Tamalpais Cemetery
DAN ABRAHAM TRAIL
CRESTWOOD DR.
Sun Valley
5TH AVE.
SIR FRANCIS DRAKE BLVD.
FAIRFAX
San Anselmo Creek
Memorial Park
SAN ANSELMO
RED HILL AVE.
MIRACLE MILE
to Kentfield
to 101
SAN RAFAEL
N
0 Mile 1.0
0 Kilometer 1.0
Contour interval 80 feet
Featured Open Space Preserve
County Parks
Adjacent Open Space Preserve
Other Public Land
Multiuse Fire Road (Hikers, Bicyclists & Equestrians)
Multiuse Trail (Hikers, Bicyclists & Equestrians)
Trail (Hikers & Equestrians)
Hiking-only Trail
Bike Path
Parking Lot
Golden Gate Transit
West Marin Stage
Gate
School
Major Road
Local Road
County Trail Easements
County Multiuse Pathways
Regional Trails
marincountyparks.org

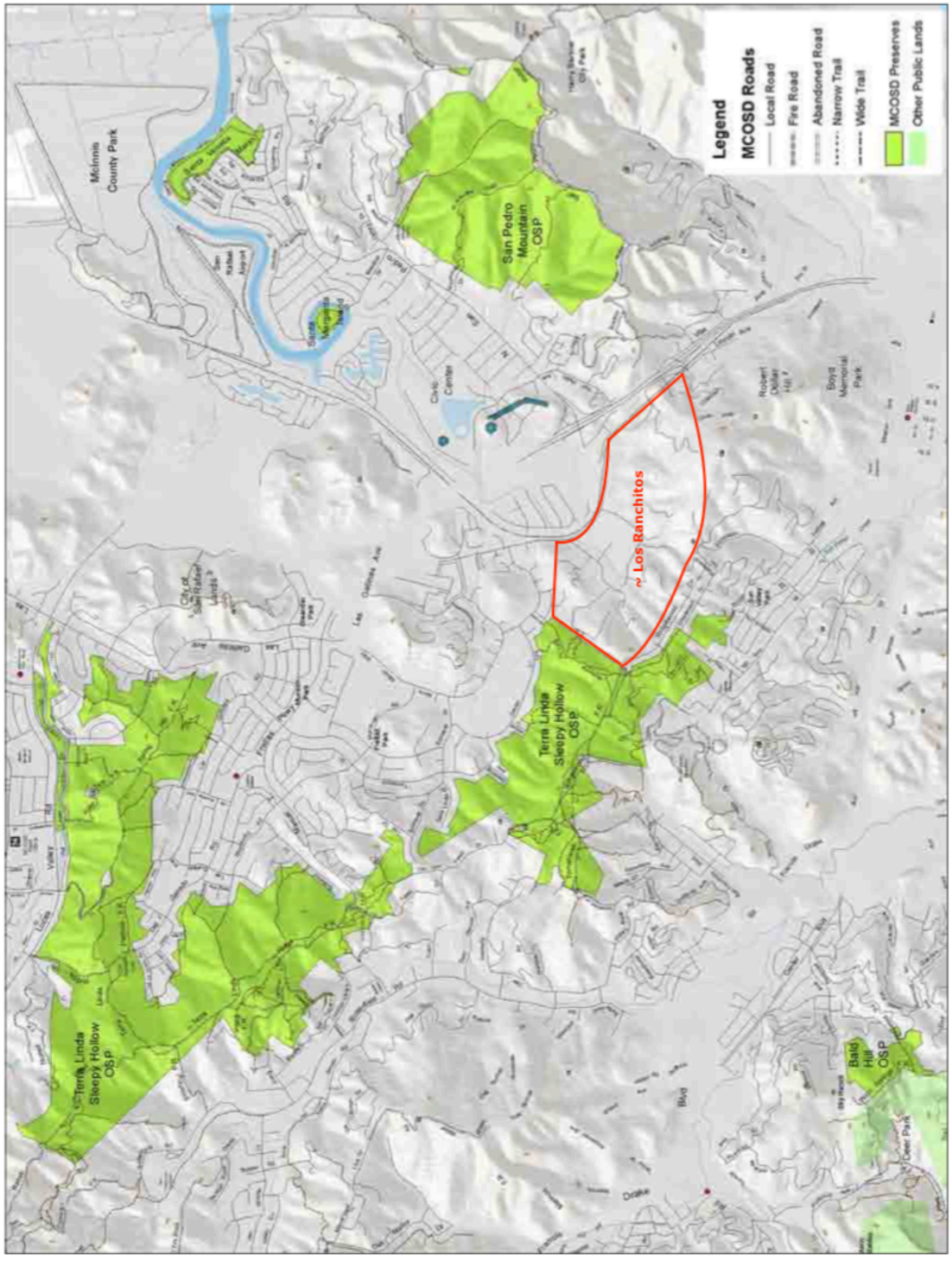


Figure 5-6
Region 5

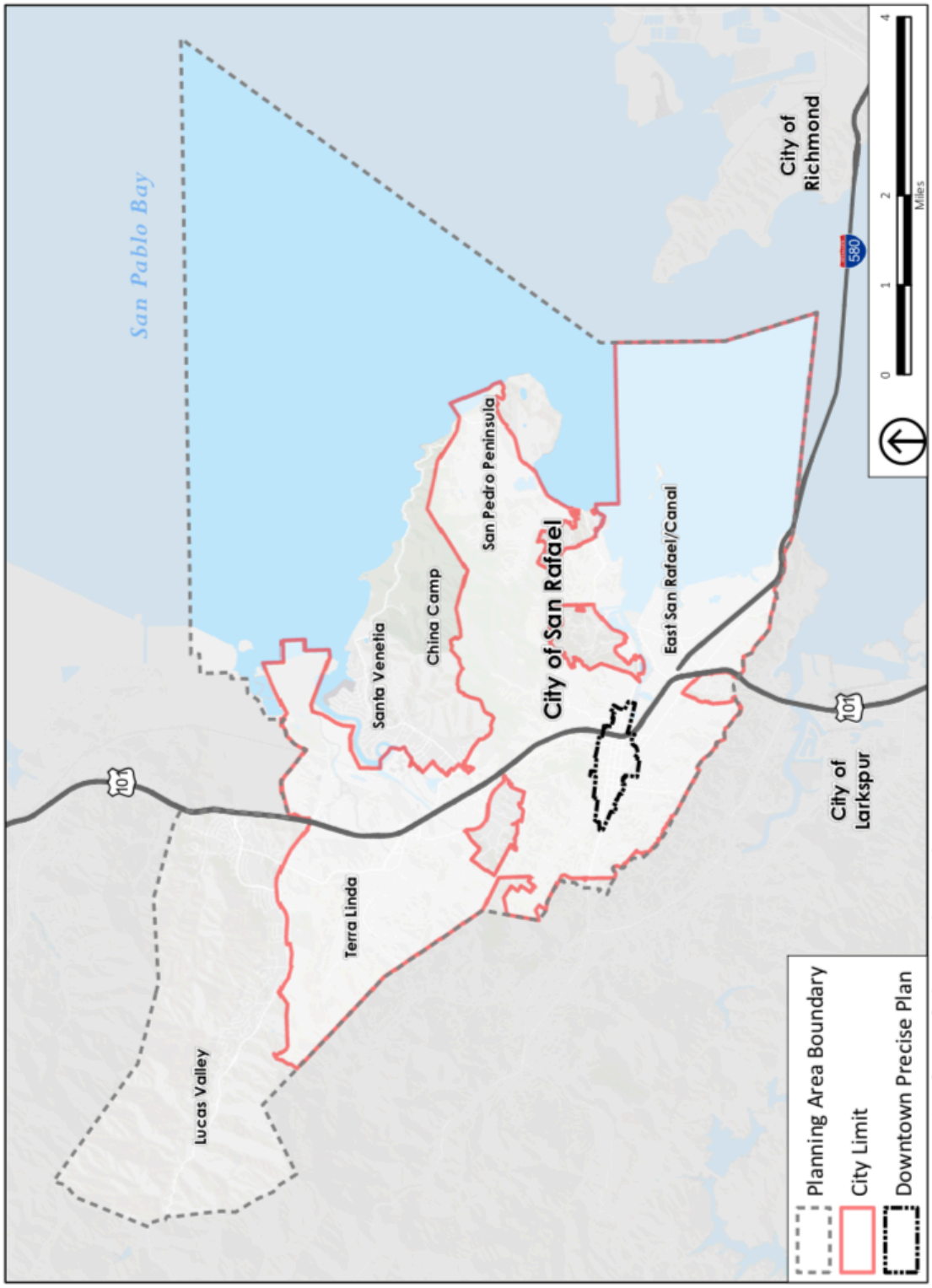


Figure 2
San Rafael Planning Area Boundary Map

APPENDIX B:
PROPOSED GENERAL PLAN GOALS, POLICIES, AND PROGRAMS

LAND USE

Goal LU-1: Well-Managed Growth and Change

Grow and change in a way that serves community needs, improves fiscal stability, and enhances the quality of life.

San Rafael values its natural setting, heritage, and cultural diversity, as well as its role as the economic, civic, and entertainment center of Marin County. The City will maintain and improve the features that make it a desirable place today, while adapting to change so that it may become an even better place in the future. This will require embracing creativity and innovation, and fully engaging residents in land use decisions.

Policy LU-1.1: Balancing Growth with Infrastructure

Plan local circulation and infrastructure systems to provide capacity for development expected by 2040. The City's plans should reflect the goal of more sustainable transportation and infrastructure.

> ***Program LU-1.1A: General Plan Evaluations.*** *Complete an evaluation of the General Plan at least once every five years. As part of this process, assess San Rafael's growth data and trends, population and employment forecasts, and progress toward meeting its housing, mobility, sustainability, and other goals. Recommend changes to policies, and adjustments to fees and capital improvement projects based on the findings.*

Policy LU-1.2: Development Timing

Allow new development only when adequate infrastructure is available, consistent with the following findings:

a) The project is consistent with adopted Vehicle Miles Traveled (VMT) standards, as well as the requirements for Level of Service (LOS) specified in the Mobility Element.
b) Planned circulation improvements necessary to meet City standards for the project have funding commitments and completed environmental review.
c) Sewer, water, and other infrastructure improvements needed to serve the proposed development have been evaluated and confirmed to be in place or to be available to serve the development by the time it is constructed.
d) The project has incorporated design and construction measures to adequately mitigate exposure to hazards, including flooding, sea level rise, and wildfire.

> ***Program LU-1.2A: Development Review.*** *Implement Policy LU-1.2 through the development review and environmental review processes. The City may modify the requirements associated with this policy if it determines that its application as stated would preclude all economically viable use of a subject property.*

Policy LU-1.3: Land Use and Climate Change

Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals.

See the Mobility Element for additional policies and programs to reduce dependence on fossil fuel vehicles and encourage more active travel modes such as walking and cycling.

> ***Program LU-1.3A: Benefits of Transit-Oriented Development.*** *Seek ways to objectively quantify, monitor, and promote the benefits of focusing new development around transit nodes and corridors and shifting trips from cars to active (non-car) transportation modes. Programmatic*

changes and recommendations should be supportable by objective data and quality of life measures. This should include data on modes of travel, trip origins and destinations, trip lengths, vehicle ownership, greenhouse gas emissions, and other metrics in areas that are well served by transit.

Policy LU-1.4: Reasonable Interim use of Property

Allow a landowner reasonable interim use of property in areas where development is presently constrained by factors such as circulation system capacity, infrastructure, and natural hazards such as flooding.

Program LU-1.4A: Reasonable Interim Uses. *Ensure that zoning regulations include provisions for reasonable interim uses for properties where the highest and best use allowed by zoning is not presently attainable due to traffic capacity, infrastructure, natural hazards (including sea level rise), and other factors. Examples of reasonable interim uses include contractor's yards, modular or mobile uses, new car storage, parking, and outdoor recreation.*

Policy LU-1.5: Development Beyond the Urban Service Area

Retain undeveloped areas outside of San Rafael's Urban Service Area boundary but within its Planning Area in agricultural or open space uses.

Policy LU-1.6: Annexation

Prior to urban development, unincorporated areas that can be reasonably served through extension of existing City services should first be annexed. Annexation of already developed unincorporated land in the San Rafael Planning Area should be dependent on neighborhood interest, the cost/revenue implications of providing services and assuming liabilities for the area, and the availability of City services.

Program LU-1.6A: LAFCO. *Encourage LAFCO to adopt Urban Service Area and annexation policies for the San Rafael Planning Area that are consistent with General Plan policies.*

Policy LU-1.7: Land Use Planning in Surrounding Jurisdictions

Continue to work with the County of Marin and the cities of Larkspur, Novato, Ross, and San Anselmo to ensure that land use changes outside the San Rafael city limits will positively affect San Rafael.

Program LU-1.7A: Development Adjacent to San Rafael. *Work with the County, other jurisdictions, neighborhood groups, and residents to review applications for development in areas adjacent to San Rafael's city limits or within the Sphere of Influence.*

Policy LU-1.8: Density of Residential Development

Use the density ranges in the Land Use Element to determine the number of housing units allowed on properties within the Planning Area.[1] The following provisions apply:

a) The density "range" includes a maximum and minimum. A given General Plan designation may have multiple corresponding zoning districts, including at least one district in which the maximum density may be achieved. Other zoning districts may have maximum densities that are less than the maximum indicated by the General Plan.
b) The number of units permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, City design policies, and prevailing densities in adjacent areas.
c) The maximum net density shown on the General Plan excludes density bonuses that may be provided for affordable housing or other community benefits, in accordance with State law and local policies.

[1] See page 3-6 for explanation of net density.

d) As required by State law, an accessory dwelling unit (ADU) or junior ADU shall not be counted as a dwelling unit for the purposes of calculating net density.
e) Areas in the "Downtown" General Plan category shall be exempt from the requirements of this policy and are instead subject to standards defined by the Downtown San Rafael Precise Plan.

Program LU-1.8A: Codifying Residential Density Limits. *Implement General Plan densities by setting allowable lot sizes and densities in the zoning ordinance and by including height limits and an area-wide dwelling unit "cap" in the Downtown Precise Plan (see text box).*

Program LU-1.8B: Minimum Densities. *The net density of new development shall be no less than the lower end of the density (or FAR) range specified by the General Plan for that property. Exceptions may be made on parcels smaller than 10,000 square feet, where the application of minimum densities may be infeasible.*

Program LU-1.8C: Small Multi-Family Lots. *Amend Section 14.16.300 of the Zoning Regulations to allow more than one housing unit per lot on lots that are smaller than 5,000 square feet, provided the density is consistent with the General Plan (these lots are currently limited to one unit each, unless located Downtown).*

Policy LU-1.9: Clustering

Allow clustering of development as a way to conserve environmentally sensitive or hazardous portions of a site (such as unstable slopes or flood plains). In such instances, the density calculation shall be made based on the area of the entire site (minus streets and easements), with the resulting number of units transferred to the less sensitive areas. The result would be a denser housing product on a portion of the site, with the balance conserved as open space.

Policy LU-1.10: Intensity of Non-Residential Development

Use the Floor Area Ratio limits on Figure # to determine the square footage of building space allowed on properties with non-residential General Plan designations. The following provisions apply:

a) As with density, FAR is calculated on a "net" basis, and is based on the area of each parcel excluding streets and easements.
b) The maximum FAR stated by the General Plan is not guaranteed. The square footage permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, and City design policies.
c) The maximum FARs shown in Figure # exclude any residential development on the property. In the event that residential uses or mixed use projects are proposed on these sites, the maximum area is the sum of the FAR allowance plus the residential density allowance for the property. This Clause does not apply to Downtown San Rafael, which is regulated by the Downtown Precise Plan.

Program LU-1.10A: Codifying General Plan Floor Area Ratio Limits. *Implement General Plan floor area ratio (FAR) limits by setting appropriate FAR limits in the zoning ordinance.*

Policy LU-1.11: Replacement of Uses in Non-conforming Buildings

Where an existing building is larger than the FAR limit and no intensification or change of use is proposed, allow the property to be reused or redeveloped at the same size as the existing building, provided that the parking and design review requirements in effect at the time of the new application can be met.

Policy LU-1.12: Transfer of Development Rights

Allow transfer of development rights (TDR) or density/ FAR from one property to another in cases where:

a) Special circumstances (e.g., historic preservation, wetlands protection, sea level rise) are found to exist, potentially causing significant environmental impacts if the transfer was not allowed; or
b) A significant public benefit would be provided as a result of the transfer.

In such cases, the TDR should be consistent with the goals and policies of General Plan 2040 and should comply with zoning and design parameters to the greatest extent feasible, except that maximum FARs, densities, or heights may be exceeded on the receiving property.

> ***Program LU-1.12A: Transfer of Development Rights (TDR) Program.*** *Evaluate opportunities for TDR as a response to issues such as sea level rise and wildfire hazards. This evaluation also should address how TDRs are conveyed and recorded.*

Policy LU-1.13: Increases in Floor Area Ratio

Consider allowing floor area ratios (FAR) bonuses that exceed the levels permitted by Figure # through the Planned Development (PD) zoning process for projects that meet all three of the following criteria:

a) The higher FAR is necessary to facilitate redevelopment with improved parking, access, landscaping, building design, and economically productive uses.
b) The project will provide significant community benefits, such as affordable housing.
c) The project is consistent with policies in the General Plan related to transportation capacity, infrastructure, sea level rise, greenhouse gas reduction, and other factors related to the safety of future occupants and quality of life in the City.

Policy LU-1.14: FAR Exemptions

Provide the following exemptions from FAR requirements:

a) Hotels and motels.
b) Any portion of a building or development project devoted to childcare or senior care may be subtracted from the total building area when calculating that building's FAR.

Policy LU-1.15: Planned Development Zoning

Encourage the use of Planned Development (PD) zoning for development on parcels greater than five acres when the application of traditional zoning standards would make it more difficult to achieve General Plan goals. The PD zoning designation allows flexible design standards that are more responsive to site conditions.

> ***Program LU1.15A: Planned Development Zoning.*** *Continue to maintain Planned Development (PD) zoning districts.*

Policy LU-1.16: School Site Reuse or Redevelopment

In the event a school site is made available for reuse, work with the School District and surrounding community to determine the desired uses. Given the public ownership of the land, uses that provide a public benefit should receive priority. This includes affordable housing, childcare facilities, neighborhood parkland, and facilities that accommodate public and quasi-public uses, such as adult day care, education, recreation, arts and cultural programs.

Program LU-1.16A: Zoning for School Sites. *Continue to implement school site reuse and redevelopment through zoning regulations and the development review process.*

See also Program PROS-1.3B on the retention of former school recreation areas

Policy LU-1.17: Building Heights

Use General Plan Figure LU-# as the basis for determining "baseline" maximum building heights in San Rafael. Maximum heights should continue to be codified through zoning and any applicable Specific Plans or Precise Plans. In addition, the following specific provisions related to building heights shall apply:

a) Height of buildings existing or approved as of January 1, 1987 shall be considered as conforming to zoning standards.
b) Hotels outside of the Downtown Precise Plan boundary have a 54-foot height limit. Within Downtown, the height provisions of the Downtown Precise Plan apply.
c) As provided for by Policy LU-18, "baseline" building heights are subject to height bonuses where specific community benefits are provided, where a Variance or zoning exception is granted, or where a Transfer of Development Rights (TDR) is being implemented.
d) Heights may be increased by up to six (6) feet above the baseline building heights as necessary to mitigate the exposure of properties to sea level rise and other flooding hazards (e.g., raising the first floor of habitable floor space above anticipated tidal flood elevations).

Policy LU-1.18: Height Bonuses

Allow the granting of height bonuses for development that provides one or more of the amenities listed in Table LU-1, provided that the building's design is consistent with applicable design guidelines and standards. No more than one height bonus may be granted on each site.

Use permit requirements for height bonuses are shown in Table LU-1. The bonuses are intended to support State and local affordable housing density bonus programs; in other words, State bonuses are included in these limits and are not intended to be added on top of them.

See also Policy CDP-1.5 on views

Goal LU-2: A Complete Community

San Rafael is a complete community, with balanced and diverse land uses. *San Rafael reflects a mosaic of land use patterns that have changed over time and will continue to evolve in the future. Our desire to maintain existing land use patterns must be balanced with the development necessary to provide jobs, meet housing needs, respond to the challenges of a changing economy, and sustain an evolving, vital community. We continue to value and cherish our diverse neighborhoods, while making them more resilient and adapting to changing conditions.*

Policy LU-2.1: Land Use Map and Categories

Use the General Plan Map as the framework for future land use decisions. The Map displays the distribution of different land use categories in the San Rafael Planning Area (see Figure #). Each category is associated with a particular set of uses and densities/ intensity standards. All proposed projects must meet these standards, as well as other applicable standards established by the City's zoning regulations. Some uses in each category are "conditional," meaning they are allowed only in limited areas or may be subject to specific conditions

Program LU-2.1A: Zoning Ordinance Amendments*. Revise the zoning ordinance, including the zoning map, to implement General Plan land use designations and policies, incorporate provisions from other recently adopted City plans and programs, and ensure that all provisions are consistent with state law. This should include creation of a new overlay district corresponding to areas expected to be affected by sea level rise (see Program S-3.1C).*

Program LU-2.1B: Subdivision Ordinance Amendments. *Revise the subdivision ordinance where necessary for conformance with General Plan land use designations and policies. Provisions for the enforcement of conditions of subdivision map approval should be included in the Ordinance.*

See also Program LU-2.4A on Industrial Zoning standards

Policy LU-2.2: Mixed Use Development

Encourage mixed-use development (combining housing and commercial uses) in Downtown San Rafael and on commercially designated properties elsewhere in the city. Mixed-use development should enhance its surroundings and be compatible with adjacent properties.

Program LU-2.2A: Development Review. *Use the development review process to evaluate the compatibility of residential uses in commercial areas.*

Program LU-2.2B: Innovation Districts. *Evaluate creation of an overlay zone or "innovation" district (see text box) to be applied to a limited number of Light Industrial-Office (LI-O) properties located near Downtown (including the existing Lindaro Mixed Use District) and/or Northgate Industrial Park, In addition to allowing a wide range of employment uses, multi-family residential and live-work uses could also be allowed in these areas, subject to performance standards, use permit requirements, and a finding that there will be no net loss of industrial floor space. The area covered by such a zone would be strictly limited in order to preserve the supply of land needed for local and region-serving businesses, minimize potential conflicts between adjacent uses, and avoid impediments to established businesses.*

Policy LU-2.3: Neighborhood-Serving Commercial Uses

Encourage the retention and improvement of neighborhood-serving retail stores and services. In the event such spaces become vacant, consider other activities that reinforce their role as neighborhood centers. Neighborhood-serving commercial areas should reinforce the city's goal of reducing greenhouse gas emissions and traffic congestion by providing walkable, bikeable services and shopping close to residents.

Program LU-2.3A: Neighborhood Centers. *Use the development review process to evaluate future proposals for existing neighborhood commercial centers, including the addition of new uses such as housing. Neighbors should be involved early in the development review process.*

Program LU-2.3B: Revitalization Incentives. *Develop zoning and economic development incentives that keep local neighborhood centers viable, such as allowing additional floor area and housing units when neighborhood-serving uses are included or retained.*

See the Neighborhoods Element for policies related to specific centers. See the Economic Vitality Element for policies on retail retention and incentives.

Policy LU-2.4: Production, Distribution, and Repair (PDR) Services

Maintain the availability of sites for PDR businesses and recognize the value of these businesses to San Rafael's economy and residents.

Program LU-2.4A: Industrial Zoning. *Periodically evaluate zoning standards for Light Industrial-Office and General Industrial areas in response to business and economic trends, market demand, changes in technology and the transportation sector, greenhouse gas reduction goals, and climate-related hazards such as sea level rise.*

Policy LU-2.5: Limited Retail and Service Uses in Industrial and Office Areas

Allow limited retail and service uses that cater to area businesses and workers within industrial/office and industrial areas. Such uses create amenities for the local workforce and reduce vehicle miles traveled.

> ***Program LU-2.5A: Industrial Zoning Standards for Ancillary Retail and Service Uses.*** *Continue to provide opportunities for small local-serving retail and service businesses in industrial zoning districts.*

Policy LU-2.6: Lot Consolidation

Encourage the consolidation of small (<6,000 SF) lots zoned for higher density residential, commercial, and mixed uses in order to create more viable development sites. Lot consolidation can provide greater flexibility in site planning, make it easier to meet parking and access requirements, and enable building sizes and dimensions that are more economically viable.

> ***Program LU-2.6A: Lot Consolidation Incentives.*** *Continue to encourage small lot consolidation through zoning regulations. Incentives such as height and floor area bonuses and reduced parking should be considered.*

Policy LU-2.7: Child Care Facilities

Encourage the development of new child care facilities and the retention of existing child care facilities to meet neighborhood and citywide needs. Work with the school districts to encourage child care and early childhood education programs at schools, recognizing their suitability for such uses and convenient locations in residential neighborhoods.

> ***Program LU-2.7A: Large and Small Family Child Care Regulations.*** *Ensure that regulations for large and small family child care facilities comply with all applicable State laws. To the extent permitted by law, the siting and operation of larger facilities in single family neighborhoods should mitigate the potential for off-site impacts (parking, noise, etc.).*
>
> ***Program LU-2.7B: Fees for Child Care Programs.*** *Where feasible, consider waiving application, permit, and traffic mitigation impact fees for child care uses.*
>
> *See also Policy LU-1.13 on FAR exemptions for child care. See Policy PROS-2.4 and Policy EDI-5.1 for additional guidance on child care.*

Policy LU-2.8: Senior and Disabled Care Facilities

Accommodate facilities and services to meet the needs of older and disabled residents, including senior housing, assisted living, and convalescent care facilities; and facilities providing adult day care and social services, and health care for older adults and people with disabilities.

> *See Goal EDI-6 for additional policies and programs addressing the needs of older adults*

Policy LU-2.9: Hotels, Motels, and Inns

Encourage redevelopment and upgrading of existing hotels and motels. These uses are desired because they are a source of jobs and tax revenue, help sustain local businesses, and provide lodging for visitors, tourists, and business travelers. Hotels, motels, and inns should be allowed with a Use Permit in most commercial, multi-family, and industrial zoning districts. Bed and breakfasts should be allowed with a Use Permit in High Density, Medium Density, and Large Lot Residential zoning districts. As noted in Policies LU-1.13 and 1.16, hotels are exempt from floor area ratio requirements and are subject to a 54-foot height limit outside of Downtown. The City Council may also grant Zoning Exceptions and Variances for projects that provide significant community benefits and are consistent with City design policies and guidelines.

Program LU-2.9A: Motel Conversions *In cases where an existing motel is no longer viable for that purpose, encourage conversion to multi-family residential use, including affordable housing.*

Program LU-2.10: Short-Term Rentals *Permit short-term rentals, subject to registration and licensing requirements, payment of transient occupancy taxes, and standards for eligibility, parking, number of guests, and other factors deemed necessary to ensure neighborhood compatibility and limit adverse impacts on the rental housing supply.*

Program LU-2.10A: Monitoring Program. *Monitor the effectiveness of short-term rental regulations and refine these regulations as needed to address issues and concerns.*

Policy LU-2.11: Mini-Storage Facilities

Allow mini-storage ("self-storage") in light industrial/ office and light industrial districts. For lots facing Highways 101 or 580 or the Bay, the mini-storage use may not be located along the street or bay frontages. New ministorage may be permitted with a Floor Area Ratio (FAR) of up to 1.0 if the following findings can be made:

a) The facility is needed in the community.
b) The project is compatible with surrounding uses.
c) The project is designed so that it cannot be converted to other, more intensive uses – or includes approval conditions which limit and mitigate off-site impacts in the of future event conversion.
d) The location is appropriate for this type of use.

Mini-storage is not permitted in other districts, except that it may be considered in existing commercial buildings if not located along the street frontage.

Policy LU-2.12: Innovative Housing Types

Encourage non-traditional and innovative forms of housing that respond to local housing needs, changing demographics, high housing costs, and sustainability goals.

Program LU-2.12A: Live-Work Regulations. *Revise zoning regulations for live/work uses to make this a more viable housing type and facilitate its development.*

Program LU-2.12B: Alternative Housing Types. *Explore regulatory and cost barriers and potential opportunities for innovative housing types such as co-housing, tiny homes, micro units, floating homes, modular and movable construction, mobile homes, and other forms of habitation which may be easier and less expensive to build than traditional housing. Consider zoning and building code changes to support the conversion of existing underutilized buildings to these uses in commercial and mixed use areas.*

Program LU-2.12C: Supportive and Transitional Housing. *Allow supportive and transitional housing in areas with Medium and High-Density Residential designations, and in Mixed Use zoning districts.*

Program LU-2.12D: Accessory Dwelling Units. *Continue to support the conversion of underutilized residential space into accessory dwelling units (ADUs) and Junior Accessory Dwelling Units (JADUs), as well as the development of new ADUs and JADUs in residential areas.*

Policy LU-2.13: Odor Impacts

Consider odor impacts when evaluating land uses and development projects near wastewater treatment plants, treatment plant expansion projects, waste transfer stations, and other odor potential sources.

Program LU-2.13A: Evaluation of Odor Impacts. Evaluate odor impacts as part of development review.

Goal LU-3: Distinctive Neighborhoods

Create and sustain neighborhoods of integrity and distinctive character. *San Rafael is Marin's hometown. It is a city of livable neighborhoods that support each other and provide a network of parks, natural amenities, gathering places and services. The unique identity, distinctive design, and upkeep of each neighborhood will continue to be a source of pride.*

Policy LU-3.1: Area Plans

Encourage the preparation of plans for areas of San Rafael with unique local issues or significant potential for future change. The purpose of such plans is to provide more specific and detailed direction on long-range planning, zoning, and site-specific development issues than can be provided by the General Plan.

Program LU-3.1A: Area Planning Process. *Engage neighborhood associations, community groups, residents, businesses, and service providers in the development of area plans, including neighborhood plans. A priority should be placed on plans for the North San Rafael "Town Center" area and the Canal neighborhood.*

See the Neighborhoods Element for additional policies and programs relating to area plans

Policy LU-3.2: New Development in Residential Neighborhoods

Preserve, enhance, and maintain the residential character of neighborhoods to keep them safe, desirable places to live. New development should:

- Enhance neighborhood image and design quality
- Incorporate sensitive transitions in height and setbacks from adjacent properties
- Preserve historic, unique, and architecturally significant structures
- Respect and enhance natural features and terrain
- Reduce exposure to hazards
- Include amenities such as sidewalks, pathways, trees, and other landscape improvements
- Maintain or enhance infrastructure service levels
- Meet expected parking demand
- Minimize reduction of views, privacy, and solar access

While these principles are fundamental, they do not preclude neighborhood change. Neighborhoods are dynamic places, and should adapt to changing tastes, styles, technology, and needs as they evolve.

Program LU-3.2A: Zoning Ordinance. *Periodically update the zoning ordinance to address neighborhood issues and concerns.*

Policy LU-3.3: Housing Mix

Encourage a diverse mix of housing choices in terms of affordability, unit type, and size, including opportunities for both renters and owners,.

Policy LU-3.4: Property Maintenance

Require owners to maintain their properties in good condition and appearance and to eliminate unsafe and unhealthy conditions.

Program LU-3.4A: Code Enforcement. *Maintain an effective Code Enforcement program that engages with neighborhoods and business groups and works in partnerships with appropriate City staff to address nuisances, mitigate problems with vacant and blighted properties, and correct zoning code violations.*

Program LU-3.4B: Conditions of Approval. *Use the development review process to establish conditions of approval, including maintenance of landscaping and other improvements. Use building inspection and code enforcement processes to ensure that these conditions and other mitigation or monitoring responsibilities are carried out.*

Program LU-3.4C: Community Appearance. *Continue and enhance programs to abate illegal dumping and remove graffiti.*

See also Policy EDI-4.2 on maintenance of streets and public space and Policy EDI-3.5 on property maintenance

Policy LU-3.5: Neighborhood Identity

Enhance neighborhood identity and sense of community by retaining and creating gateways, landscape features, and other improvements that help define neighborhood entries and focal points.

See the Community Design Element for additional policies on neighborhood gateways and landscaping

Policy LU-3.6: Transitions Between Uses

Maintain buffers between residential uses and adjacent commercial and institutional uses. Parking lots, loading areas, trash facilities, and similar activities associated with non-residential uses should be appropriately screened.

Program LU-3.6A: Parking Lot Design. *Maintain design guidelines for parking lots that address landscaping, buffering, environmental quality, and neighborhood compatibility. Parking lots should not be the dominant visual feature from the street frontage.*

Policy LU-3.7: On-Street Parking

Manage on-street parking in a way that meets resident and business needs, reduces nuisances, and minimizes potential conflicts with emergency vehicles.

Program LU-3.7A: Neighborhood Parking Measures*. In neighborhoods with excessive on-street parking demand:*

a) Work with property owners to add off-street parking and allow shared parking during off-peak hours.
b) Where feasible, require additional off-street parking as a condition of approval for expansion or remodels.
c) Update permit parking programs and on-street parking time limits to improve their effectiveness.

Program LU-3.7B: Parking Regulations. *Periodically evaluate and amend parking regulations to respond to new technologies and trends in car ownership and design, while still ensuring adequate on-site parking.*

See Goal M-7 (Mobility Element) for additional policies and programs on parking, including amendments to parking standards.

Policy LU-3.8: Nuisance Vehicles

Minimize the number of abandoned and non-functioning vehicles on City streets.

Program LU-3.8A: Abandoned Vehicle Program. *Continue the abandoned vehicle abatement program.*

Program LU-3.8B: Vehicles as Residences. *Continue the prohibition on the overnight residential use of vehicles in the public right of way.*

Policy LU-3.9: Neighborhood Centers

Support the vitality of attractive, viable neighborhood centers and assist these centers as they adapt to changing economic conditions and community needs. Existing neighborhood centers should be retained unless it can be clearly demonstrated that they are not economically viable or useful to the neighborhood. Where commercial uses are no longer feasible, other uses that are compatible with the neighborhood such as housing and local services should be accommodated.

Program LU-3.9A: Neighborhood Serving Uses. Prioritize neighborhood serving uses and places that support neighborhood interaction on small commercial sites in residential areas. Examples of such uses are cafes, neighborhood markets, restaurants, drug stores, local medical and health care services, farmers markets, child care facilities, public facilities, and similar activities that meet the day to day needs of local residents. Maintaining these uses near residents can potentially help reduce vehicle miles traveled (VMT) and encourage walkable neighborhoods.

Program LU-3.9B: Housing in Neighborhood Commercial Centers. *In the event housing is proposed on neighborhood commercial sites, encourage the integration of neighborhood-oriented commercial or service uses on the ground floor or a portion of the site.*

Policy LU-3.10: Relationships with Local Institutions

Support collaborations and partnerships among neighborhoods, schools, religious uses, and other institutions to enhance mutual understanding and resolve operational issues such as parking, noise, traffic, and privacy.

Program LU-3.10A: Community Partnerships. *Encourage the establishment of local committees to resolve conflicts and improve relationships between neighborhoods and local institutions. Public-private partnerships with local institutions should be encouraged as a way to generate community benefits and improvements.*

Policy LU-3.11: Neighborhood Pride

Promote events and activities that support neighborhood pride, create a sense of community, and build connections between residents. These events and activities could include block parties, festivals, parades, picnics, concerts, and similar activities that bring residents together. City parks should include areas where such activities can be hosted, in a manner respectful of nearby residents.

Program LU-3.11A: Neighborhood Websites. *Support the development of neighborhood websites and provide links to these sites on the City's website.*

NEIGHBORHOODS ELEMENT POLICIES

Downtown

Policy NH-1.1: A Thriving Downtown

Sustain and improve Downtown San Rafae l as a safe, attractive, convenient, well-maintained place to visit, shop, recreate, work, and live.

> ***Program NH-1.1A: Downtown Precise Plan and Form-Based Code.*** *Implement the Downtown Precise Plan and Form Based Code to strengthen the identity of Downtown districts and guide new development and investment.*
>
> ***Program NH-1.1B: Quality Downtown Services.*** *Support the Downtown BID, the Chamber of Commerce, and other organizations in efforts to maintain the quality of Downtown as a great place to do business. Encourage investment in services and amenities that project a positive image of Downtown and make it a destination of choice within Marin County.*
>
> ***Program NH-1.1C: Capital Improvements.*** *Incorporate projects and programs identified in the Downtown Precise Plan into the City's Capital Improvement Program and operating budget. Explore potential funding sources for capital projects, including grants that recognize the benefits of accommodating sustainable growth and responding to climate change. Maintain existing facilities, such as lighting and landscaping, so that Downtown remains an attractive place to visit.*
>
> ***Program NH-1.1D: Downtown Public Safety.*** *Continue public safety, maintenance, and social service initiatives that keep Downtown safe and address the needs of Downtown businesses, visitors, and residents of all incomes.*

Policy NH-1.2: Economic Success

Encourage the success of Downtown businesses by limiting regulatory barriers, encouraging private investment, and making Downtown an inviting place for new and established businesses, customers, and patrons. Local regulations and programs should recognize the importance of being responsive to market changes and should help business weather economic downturns.

> ***Program NH-1.2A: Adapting to Changes in Retail.*** *Work with the owners and tenants of ground floor spaces, especially along Fourth Street, to respond to changes in the demand for retail space. Ensure that zoning and building regulations are flexible so that these spaces remain usable and can support active uses.*
>
> *See the Economic Vitality Element for economic development programs and Chapter 8 of the Downtown Precise Plan for additional implementation measures.*

Policy NH-1.3: Downtown Housing

Support Downtown's continued growth as a mixed-use neighborhood and quality residential environment. New housing should include a mix of affordable and market-rate units, including expanded resources for unsheltered persons and extremely low-income households. Housing should take advantage of Downtown's amenities and views and contribute to its character as a dynamic neighborhood.

> ***Program NH-1.3A: Development Incentives.*** *Implement and expand incentives for the private sector to provide more affordable housing, community amenities and public space. These incentives should substantially increase the stock of units that are permanently affordable.*

Policy NH-1.4: Preventing Displacement

Existing housing should be preserved and upgraded while preventing the displacement of Downtown's lower income residents and persons with special housing needs.

> ***Program NH-1.4A: Supportive Housing.*** *Work with local social service and non-profit organizations to address the needs of unsheltered residents in Downtown, including the provision of additional permanent supportive housing.*
>
> *See the Downtown Precise Plan for Anti-displacement strategies, including measures to protect tenants.*

Policy NH-1.5: Downtown Employment

Continue to attract a diverse set of employers to create a more resilient and robust Downtown economy. Downtown San Rafael should be promoted as a convenient and attractive office and retail location, with a mix of large and small businesses. Retention of small and locally owned businesses is strongly encouraged to retain Downtown's character and legacy.

Policy NH-1.6: Public Realm

Improve the quality and usefulness of public space Downtown, including streets, sidewalks, alleys, plazas, parks, and other civic spaces. Public investments in these spaces should be directed in a way that supports Downtown development. Downtown public space should be safe, comfortable, and well-maintained.

> ***Program NH-1.6A: Court Street Plaza.*** *Enhance the Court Street Plaza and adjacent area of 4th Street as a public gathering space. Implement pilot programs that reimagine this part of Fourth Street as a "shared street" that functions as civic space and accommodates multiple travel modes.*
>
> ***Program NH-1.6B: Transit Gateway Improvements.*** *Create a new public space adjacent to the SMART station that would provide an amenity for Downtown residents, workers, visitors, and transit passengers. The space should create a welcoming "first impression" of Downtown. Provisions for ongoing programming, maintenance, and safety should be developed prior to construction.*
>
> ***Program NH-1.6C: Pocket Parks and Private Plazas.*** *Use incentives such as additional building height to create accessible outdoor spaces such as plazas and paseos in new development.*
>
> ***Program NH-1.6D: Downtown Alleys.*** *Activate key Downtown alleys as public spaces.*
>
> *See Downtown Precise Plan Chapter 8 for a list of proposed public realm improvements*

Policy NH-1.7: Context-Sensitive Design

Ensure that new construction and redevelopment is sensitive to Downtown's existing context, with thoughtful transitions to established neighborhoods and retention of important historic buildings and building elements. As Downtown grows, it should retain its sense of history and authenticity.

> ***Program NH-1.7A: Downtown Form Based Code.*** *Adopt and maintain a Form Based Code that provides greater predictability in what will be built and emphasizes pedestrian-friendly design. Development standards should reinforce the unique character of Downtown while allowing its built form to evolve and improve. The Code should allow for a streamlined permitting and approval process, increased certainty for developers, and more predictable outcomes for the community as new projects are proposed.*

See the Community Design and Preservation Element for additional policies and programs on designing buildings to complement and enhance Downtown's character and create a pedestrian-friendly environment.

Policy NH-1.8: Historic Resources

Enrich Downtown's identity by encouraging historic preservation and ensuring that development is sensitive to historic context. Renovation and adaptive reuse of historic buildings is strongly encouraged.

Program NH-1.8A: Context Sensitive Design. *Implement Form Based Code provisions to ensure that new development adjacent to historic resources or within historic districts is sympathetic to the scale and character of older buildings.*

Program NH-1.8B: Historic Districts. *Consider the use of historic districts to conserve the character of parts of Downtown with high concentrations of important older buildings. These districts should continue to accommodate infill development on vacant and underutilized sites, but should provide incentives for preservation and adaptive reuse, including tax benefits and transfer of development rights.*

Program NH-1.8C: Addressing Functional Obsolescence. *Work with property owners to modernize functionally obsolete spaces in older buildings. Seek solutions which allow updating and alteration of interior spaces without losing the historic integrity of the building exterior.*

Program NH-1.8D: Historic Inventory. *Regularly update the inventory of historic and cultural resources in Downtown.*

See Community Design and Preservation Element Goal 5 for additional guidance

Policy NH-1.9: Downtown Arts

Promote Downtown as the cultural and entertainment center of San Rafael and Marin County. Recognize the potential for the arts to be an economic engine and stimulate other Downtown business opportunities.

See the Arts and Culture Element for implementation programs, including maintaining Downtown's designation as a Cultural Arts District and promotion of special events and activities

Policy NH-1.10: Downtown Circulation

Provide a safe, well-connected transportation network that efficiently serves all modes of travel. This network should promote safety for all travelers and create a street network that is safer and more comfortable for pedestrians.

Program NH-1.10A: Multi-Modal Improvements. *Implement the improvements in the Downtown Precise Plan to improve the safety and comfort of all travel modes in Downtown, particularly pedestrians and bicycles. This includes additional bike routes and lanes; safer pedestrian crossings; wider sidewalks in some locations; street trees and landscaping; converting B, C, and D Streets to two-way traffic; and creating a "north/south greenway" for bicycles and pedestrians along the Tamalpais Avenue corridor.*

Program NH-1.10B: Evolving Mobility Needs. *Design Downtown streets so that they can adapt to changing transportation trends such as ride-hailing and micro-mobility (electric bikes and scooters), changing parking demand, and changes in technology, including autonomous vehicles. Technology should also be used to make Downtown safer and easier to navigate for all users, for example, with the use of pedestrian-activated crossing signals, timed traffic signals, and digital information on parking.*

Program NH-1.10C: Wayfinding. *Build upon ongoing efforts to implement a clear wayfinding strategy to orient transit passengers, motorists exiting Highway 101, and other visitors to Downtown. Use consistent signage and streetscape elements to enable visitors to navigate Downtown easily.*

Policy NH-1.11: Parking

Pursue creative solutions to meeting Downtown parking needs without losing the sense of the area as a pedestrian-oriented district. These solutions should include better management of the existing parking supply, additional private parking (including spaces available for public use) in high-demand areas such as the transit center vicinity, more efficiently designed parking structures, and improved signage and visibility of public parking facilities.

See the Mobility Element for programs to improve parking management and meet parking needs more efficiently, including programs tailored to Downtown San Rafael

Policy NH-1.12: Hazard Resilience

Develop Downtown development and adaptation strategies that improve resilience to sea level rise, wildfire, and other natural hazards.

Program NH-1.12A: Sea Level Rise Adaptation. *Develop a comprehensive set of sea level rise adaptation strategies for future development that draw from citywide and regional strategies. These strategies could include tidal gates, levee improvements, wetland restoration, and elevation requirements for new buildings.*

See the Safety and Resilience Element for additional flood protection and wildfire prevention measures

Central San Rafael Neighborhoods

Policy NH-2.1: Miracle Mile Land Uses

Retain the Miracle Mile as a vital neighborhood commercial district. Improve the area's appearance, parking, landscaping, and vehicular access from side streets. New development or redevelopment should be of a scale and intensity consistent with existing development.

Program NH-2.1A: Neighborhood Plan. *In the event that significant changes to currently allowable land uses or densities are proposed in the future, develop a neighborhood/ corridor plan for the Miracle Mile.*

Policy NH-2.2: Miracle Mile Circulation

Improve circulation, provisions for cross-traffic and "U-turn" movements, bicycle and pedestrian safety, and traffic controls along Fourth Street, especially at intersections with side-streets.

Program NH-2.2A: Ross Valley Intersection. *Consider reconfiguring the traffic signal at Ross Valley Drive and Fourth Street to incorporate Santa Margarita Drive, thereby improving safety.*

Policy NH-2.3: Noise Abatement

Consider the benefits and practicality of noise abatement techniques when designing or implementing capital improvements or approving new development along the Miracle Mile and adjacent Second/Third Street corridors.

Program NH-2.3A: Noise Improvements. *Use the capital improvement program and development review process to consider noise abatement techniques for the Miracle Mile and*

adjacent thoroughfares, including the use of attractive fencing, trees and landscaping, and sound-absorbing pavement.

Policy NH-2.4: Development of Remaining Vacant Residential Lots

Ensure adequate provisions for emergency vehicle access and water supply prior to constructing additional homes on vacant lots in the West End, especially on narrow and substandard streets and in hillside areas.

Policy NH-2.5: Sun Valley Neighborhood

Maintain the scale, diversity, and small-town character of Sun Valley, including its affordable housing stock and scenic open spaces. Housing shall continue to be the dominant land use in the neighborhood.

Program NH-2.5A: Neighborhood-Serving Commercial Uses. *Encourage retention of existing neighborhood commercial uses. Allow new commercial uses only if they benefit the neighborhood, will not impair its residential character or impact health and safety, and have been vetted through a community process.*

Policy NH-2.6: Neighborhood Sustainability

Adapt existing buildings, energy, and transportation systems to reduce the neighborhood's carbon footprint, improve energy self-sufficiency, phase out gas-powered utilities and vehicles, reduce overhead wires and service lines, increase awareness of natural systems, and improve environmental health.

Policy NH-2.7: Natural Features

Conserve Sun Valley's natural environment, including clean-up and maintenance of Mahon Creek.

Policy NH-2.8: Sun Valley Development

Ensure that new development and significant remodels retain neighborhood character, especially in areas of smaller or historic homes. Development shoul d support the City's sustainability and wildfire prevention goals.

Program NH-2.8A: Camgros/ Duca Properties. *Ensure that any future use on these properties supports and sustains neighborhood character. The neighborhood has expressed that it supports acquisition of these sites for a neighborhood/ community cultural center, or dedication of land for such a site in future development. Such a center could also provide for outdoor education, emergency response and training, community functions, and delivery of local services. The potential for housing on this site also must be recognized. In the event residential development is pursued, clustering of the allowable units should be encouraged to preserve open space areas. Development should comply with the City's Hillside Guidelines and should establish a wildlife corridor and protected riparian area along a restored Mahon Creek.*

Policy NH-2.9: Sun Valley Circulation

Improve circulation for all modes of travel in Sun Valley, with an emphasis on improvements for pedestrians, bicyclists, and transit users. This should include provisions for safer sidewalks and footpaths, new bike routes, public transit, and traffic flow improvements along Fifth Avenue.

Program NH-2.9A: Neighborhood Circulation Concepts. *Pursue the following circulation improvements in the Sun Valley Neighborhood:*

a) Potential roundabouts at Fifth/ California and Fifth at Happy Lane or River Oaks (would require additional right-of-way).
b) Removal of hazardous crosswalk at Fifth Avenue and I Street.
c) Completion of sidewalks along both sides of Fifth Avenue, and removal of sidewalk hazards.
d) Designation of alternate evacuation routes in the event Fifth Avenue is blocked.
e) Potential bike route along Center Avenue.

f) A new sidewalk on California Street from Fifth to Windsor.
g) New trails through neighborhood open spaces and connecting to the West End neighborhood.
h) Consideration of shuttle or jitney service from Downtown along Fifth Avenue.
i) Alternatives to meeting neighborhood parking needs.

Policy NH-2.10: Sun Valley Gathering Places

Sustain existing neighborhood gathering places in Sun Valley. Pursue opportunities to create new places where Sun Valley residents can meet, learn, play, and build a stronger sense of community.

Program NH-2.10A: Community Center. *Consider the feasibility of a community cultural and environmental center in the Sun Valley area. In addition, strengthen the function of Sun Valley School and Sun Valley Park as neighborhood gathering places. This includes continued agreements with the School for access to the school yard after hours as well as access to the Dan Abraham Trail. These agreements could be expanded to allow for community meetings, emergency response, and other activities on school property.*

Policy NH-2.11: Fairhills Neighborhood

Retain the character of Fairhills as a scenic hillside neighborhood. Development and remodeling should respect and enhance the character of the neighborhood and maintain those homes with historic value. Continued efforts should be made to reduce fire hazards and ensure adequate emergency access.

Program NH-2.11A: Hillside Construction. *Ensure that hillside areas are protected by continuing to apply the Hillside Design Guidelines for new construction and major remodels. The siting, height, and design of new or expanded structures should be carefully evaluated to ensure adequate emergency vehicle access, slope and foundation stability, adequate surface and sub-surface drainage, and erosion control. Buildings that are out of scale, damage the natural landscape, cause excessive tree loss or habitat destruction, or obstruct scenic vistas from public vantage points, should be discouraged.*

Policy NH-2.12: Lincoln/ San Rafael Hill

Maintain low-density development in the hillside areas above Lincoln Avenue, consistent with existing densities and with access, fire hazard, and environmental constraints. Ensure that residents of the areas above Lincoln Avenue are engaged in plans for development along Lincoln itself.

Policy NH-2.13: Lincoln Avenue Corridor

Allow higher density residential development along Lincoln Avenue between Hammondale Court and Mission Avenue, recognizing the availability of public transit along this corridor and the established pattern of development. Where development occurs, landscaped setbacks and tree planting should be required to visually reduce the "wall effect" along Lincoln Avenue. Underground parking should be encouraged to reduce overall building height and mass. Consolidation of smaller lots into larger parcels should be encouraged, in order to create more viable development sites, meet parking needs, and minimize the number of ingress/egress points to Lincoln Avenue.

Program NH-2.13A: Lincoln Avenue Development Standards. *Maintain development standards that preserve the character of Lincoln Avenue, including:*
a) 36-foot (three story) height limit[2]
b) 15' front yard setbacks
c) Continued allowances for multi-family residential and office uses. This includes continued a prohibition on the conversion of existing residential space to office use unless replacement residential units are provided.
d) Prohibition of most new retail uses (while allowing existing uses to continue)

[2] Subject to density bonuses for affordable housing

e) *Requirements to mitigate noise impacts from SMART, the freeway, and Lincoln Avenue traffic, where appropriate.*

Program NH-2.13B: Lincoln / San Rafael Hill Park. *Pursue opportunities to develop a small neighborhood park in the northern part of the Lincoln/ San Rafael neighborhood.*

Policy NH-2.14: Dominican University

Sustain Dominican University as a valued community institution and contributor to San Rafael's economy and culture. University operations and events should be compatible with surrounding residential areas, and the impacts of facilities, activities, and events on the neighborhood should be minimized. Continue to foster a cooperative relationship between the University's students, faculty, visitors, and residents.

Program NH-2.14A: University-Neighborhood Coordination. *Maintain on-going coordination between Dominican University, the Dominican-Black Canyon Neighborhood Association, the City of San Rafael, and campus neighbors to address concerns such as traffic, parking, noise, and vegetation management in the University area. In the event future development or campus expansion is proposed, amendments to the Master Use Permit shall be required. Creation of neighborhood advisory committees to advise and collaborate on proposed development projects and address issues of concern is strongly encouraged.*

Program NH-2.14B: Dominican Hillside Parcels. *Work with Dominican University and neighborhood residents to plan for the undeveloped hillside parcels located east of Deer Park Avenue and south of Gold Hill Grade. Much of the property is steep and heavily wooded. Other portions have the potential for housing, including student housing and faculty/ staff housing, which is a significant local and community need. In the event housing is pursued, the permitted density should reflect site constraints. Development should conform to the City's Hillside Design Guidelines and include provisions for substantial open space. The neighborhood should be involved in the planning and review process, which would include an amendment to the Master Use Permit and the PD-district zoning.*

Policy NH-2.15: Dominican/Black Canyon Area Resources and Hazards

Proactively work to conserve and restore natural resources and reduce environmental hazards in the Dominican/ Black Canyon area, including wildfire, landslide, and noise hazards.

Program NH-2.15A: Emergency Preparedness. *Continue collaborative efforts to improve emergency preparedness, including vegetation management on public open space and private property, evacuation and emergency response, and community awareness and training.*

Program NH-2.15B: Noise Reduction. *Continue to work with Caltrans to reduce freeway noise in the Dominican-Black Canyon area. This should include maintenance of landscaping along the freeway sound wall, noise-reducing pavement, and other sound absorption technologies.*

Program NH-2.15C: Open Space Dedication. *Consider offers to dedicate vacant sites, including the 17.9-acre parcel at the end of Dominican Drive (also with frontage on Glen Park Avenue), as public open space. If City ownership is infeasible, consider dedication to Marin County Parks.*

Policy NH-2.16: Montecito Residential Densities

Preserve the existing mix of single family, duplex, medium-, and high-density housing in Montecito-Happy Valley's residential areas.

Policy NH-2.17: High School Campus Plans

Facilitate communication between San Rafael City Schools and the neighborhood on issues related to traffic, parking, noise, operations, and development on the high school campus.

Program NH-2.17A: Corporation Yard Reuse. *Encourage relocation of the bus/ maintenance yard located on the northwest corner of the high school campus (Union and Mission), thereby allowing for development of:*

a) Affordable multi-family housing. To the extent feasible, housing on the site should serve older adults and/or School District staff. Any development on this site should maintain, enhance, and protect the view corridor down Fourth Street to the High School's west portico.

b) Montecito Neighborhood Park. A small neighborhood park and children's playground should be included in any plans to repurpose school property. In the event a park is infeasible on the Union and Mission site, consider other locations on the campus where such a facility is possible, including a joint use park on the field east of the corporation yard.

If any part of the high school campus is closed or sold before the horizon of the General Plan, a priority should be placed on developing affordable housing or neighborhood parkland.

Program NH-2.17B: Joint Use. *Work with San Rafael City Schools to accommodate greater public access to open space and athletic fields at the High School during hours when school is not in session.*

Program NH-2.17C: School-Related Traffic. *Work with San Rafael City Schools to improve the safety and effectiveness of drop-off areas at San Rafael High School. Encourage continued communication and cooperation to address access and scheduling improvements.*

Policy NH-2.18: Architecture

Maintain a mix of architecture styles in the Montecito/ Happy Valley Neighborhood, compatible with the character of the area's attractive older buildings. Newer buildings should be well designed, blend well with existing homes and provide a pedestrian-friendly street front.

See also Program CDP-5.2B (Community Design and Preservation Element) identifying Montecito/ Happy Valley as one of several priority areas for a historic resource inventory update.

Policy NH-2.19: Traffic Circulation

Continue to develop solutions to neighborhood traffic congestion and safety. Local residential streets should be designed for low volumes with appropriate traffic control. Continued efforts should be made to improve circulation on streets in the adjacent commercial area and to improve pedestrian and bicycle safety through this area.

Program NH-2.19A: Access to Downtown. *Provide safe access from the Montecito-Happy Valley area to Fourth Street, the Montecito Shopping Center, the Canal waterfront, and the transit center area. Streetscape improvements in the eastern end of Downtown should create an inviting, comfortable environment for walking.*

Program NH-2.19B: Pedestrian Improvements. *Improve the safety and condition of neighborhood sidewalks, including improvements to crosswalks, posting of speed limits, and improvements to pedestrian paths and rights-of-way. Work with the neighborhood to gather information on sidewalks and paths needing improvement.*

Policy NH-2.20: Parking

Provide street parking that is convenient and does not dominate the neighborhood. New residential development should provide attractive and adequate off-street parking.

Program NH-2.20A: Parking Improvements. *Continue to explore practical and cost-effective solutions to manage parking in the Montecito area. These measures could include residential permit parking, time limits on parking on specific high-demand streets, working with apartment owners to restore parking spaces being used for storage, working with property owners to add on-site parking where feasible, and posting no parking signs on narrow streets with access constraints for emergency vehicles.*

Policy NH-2.21: Downtown Transition Areas

Ensure that future development in the Montecito commercial area respects the context, scale, and character of development in the adjacent residential neighborhood. Building height and mass along the north and east edges of Downtown should step down in order to minimize impacts on neighborhood character and well-being.

Program NH-2.21A: Reuse of Commercial Properties. *Actively solicit input from Montecito-Happy Valley residents on plans for the reuse, redevelopment, and improvement of properties in the commercial area between US 101 and San Rafael High School, including the Montecito Shopping Center.*

Policy NH-2.22: Bret Harte Neighborhood

Maintain Bret Harte as a great neighborhood, with continued efforts to reduce hazards, preserve open space, enhance public facilities and infrastructure, and encourage reinvestment in the existing housing stock.

Program NH-2.22A: Bret Harte Neighborhood Priorities. *Recognize the following neighborhood priorities in planning and development decisions for the Bret Harte area:*

a) Maintain strict limits on hillside development. Existing hillside open spaces should be reinforced and proactively managed to prevent future landslides.
b) Encourage safety improvements to infrastructure, including undergrounding power lines and monitoring aging gas lines through residential yards.
c) Improve bicycle and pedestrian access along Woodland Avenue, providing safer routes to school, and better access to Downtown San Rafael.
d) Improve neighborhood aesthetics and landscaping, particularly at the neighborhood gateways at DuBois and Irwin Streets. Additional trees should be planted throughout the area, and existing trees should be maintained.
e) Continue improvements to Bret Harte Park, including hillside landscaping to prevent erosion, community art projects, shade tree maintenance, completion of restroom improvements, and replacement of the water tank while preserving the historic wooden structure that surrounds it.
f) Expand emergency preparedness activities, particularly for older adults.
g) Encourage renovation of the Bret Harte Shopping Center.
h) Monitor and discourage homeless encampments in the open space below Southern Heights Ridge.

Policy NH-2.23: Gerstle Park

Preserve and enhance the residential and historic character of the Gerstle Park neighborhood by:

a) Protecting the mixed-density residential area, strictly limiting rezoning to higher densities.
b) Prohibiting additional non-residential development in Gerstle Park except as already allowed in zoning regulations.
c) Protecting hillside ridges and the visual backdrop of the ridges on the edges of the neighborhood.
d) Preserving and enhancing the distinctive design character of the neighborhood, including historic design features. New development or significant remodels should enhance and respect the architectural character of the neighborhood.

e) Requiring that adjacent Downtown land use designations and developments are compatible with and do not negatively affect the neighborhood, and that sensitive transitions occur where Downtown development abuts neighborhood residences.

Program NH-2.23A: Short School. *Coordinate with San Rafael City Schools on the future of Short Elementary School. Uses should be compatible with the surrounding residential neighborhood and sensitive to potential impacts on parking, traffic, noise, and similar factors.*

See also Program CDP-5.2B (Community Design and Preservation) identifying Gerstle Park as one of several priority areas for a historic resource inventory update.

Policy NH-2.24: Natural Features

Protect and enhance important natural features in the Gerstle Park area, including Mahon/ San Rafael Creek, mature street trees, and community open spaces, hillsides, and woodlands.

Policy NH-2.25: Pedestrian Linkages and Landscaping

Improve bicycle and pedestrian linkages and landscape treatment of major gateways from Downtown.

Program NH-2.25A: Gateway Improvements. *Provide landscaping improvements along B, C, and D Streets.*

Southeast San Rafael/ Canal

Policy NH-3.1: Southeast San Rafael/ Canal

Strengthen Southeast San Rafael/ Canal as a local and regional employment center and a community of diverse, resilient neighborhoods.

Program NH-3.1A: Southeast San Rafael Community Plan. *Prepare a Plan for the Southeast San Rafael area, including its business districts and the Canal neighborhood. The Plan should be comprehensive in scope, covering land use, transportation, housing, public safety, conservation, sea level adaptation, and economic vitality issues. The Plan should be based on an inclusive public process that gives voice to Canal residents and Southeast San Rafael businesses. The type of Plan to be prepared (Precise Plan, Specific Plan, etc.) will be determined based on available resources and project objectives.*

Policy NH-3.2: San Rafael Canal

Promote the San Rafael Canal as a community-wide asset for public and marine-related uses. Public access and views of the water should be improved, and sensitive wildlife habitat should be protected.

Program NH-3.2A: Design Plan and Vision for the Canalfront. *Continue implementation of the Canalfront Conceptual Design Plan, including circulation and access improvements and development of a waterfront paseo. (see text box on page 3).*

Policy NH-3.3: Canal Maintenance

Ensure the long-term maintenance of the Canal as a navigable waterway, including regular dredging. Encourage the maintenance of docks, along with litter removal and water quality improvements.

Program NH-3.3A: Canal Dredging. *Support efforts to dredge the San Rafael Canal to ensure its continued navigability, effectiveness for flood control and sea level rise resilience, and value as natural habitat and a recreational resource. Pursue a reliable ongoing funding source for dredging*

and channel maintenance, potentially including a maintenance assessment district and federal funding.

See also Policy CSI-1.11 in the Community Services and Infrastructure Element

Policy NH-3.4: Canal Waterfront Land Uses

Promote and protect water-oriented uses between Grand Avenue and Harbor Street, including uses that serve the recreational and live-aboard boating community. Other commercial uses that encourage pedestrian traffic such as restaurant and retail uses should be permitted. Residential and office uses are allowed in this area, subject to conditions to ensure they are compatible with nearby uses. Opportunities for innovative water-dependent housing types such as floating homes and houseboats also should be considered. East of Harbor Street, residential uses should be retained on both sides of the channel.

Program NH-3.4A: Zoning. *Maintain zoning provisions to protect and incentivize water-oriented uses. Amend zoning as needed to permit floating homes and other water-dependent housing.*

Program NH-3.4B: State Lands Commission Title Claims. *To assist in redevelopment, resolve public trust title land claims that enable the City to convey or exchange certain filled lands which are found to be no longer necessary for use as harbors, commerce, navigation, fisheries, or appurtenances, consistent with State law.*

Policy NH-3.5: Waterfront Design

Require new buildings along the Canal waterfront to provide public views of the water and accommodate public access to the shoreline. Design factors important in reviewing specific development proposals include pedestrian access, waterfront setbacks, view protection and enhancement, habitat protection, architectural design quality, and landscaping.

Program NH-3.5A: Canalfront Design Guidelines. *Use the development review process to implement the 2009 Design Guidelines for the Canal Waterfront, including requirements for a 25' waterside setback for new buildings and a 10' paseo along the waterfront. Amenities such as seating, lighting, and bike racks should be provided along the shoreline. The Design Guidelines include provisions for building materials, architecture, lighting, signage, views, public open space, landscaping, street furniture, streets and sidewalks, and sustainability.*

Policy NH-3.6: Public Access

Increase and improve public access to the Canal through the creation of waterfront promenades, a potential new pedestrian bridge east of Grand Avenue, additional access points within new development, and waterside access for boats.

Program NH-3.6A: Circulation Improvements. *Continue to seek funding opportunities for pedestrian and bicycle enhancements along the Canal and include such projects in the Capital Improvement Program as funding becomes available. In addition, explore the feasibility of future water taxi service between the Downtown/ Transit Center area and points along the Canal and shoreline.*

Program NH-3.6B: Water Access. *As outlined in the Canalfront Design Guidelines, provide public access for boat docks and kayak launches in new development where feasible. Waterside access for boats should be encouraged in new commercial development along the Canal.*

Policy NH-3.7: Recreational Boat Facilities

Maintain existing recreational boat launch facilities along the Canal unless the demand for such facilities no longer exists or adequate substitute space can be provided. Encourage the addition of boat launch facilities, boat trailer parking, and sewage pump out facilities where appropriate.

Program NH-3.7A: Public Boat Launching Facilities. *Promote the addition of public boat launching facilities for small non-motorized watercraft such as kayaks at Beach Park and the Montecito Shopping Center.*

Program NH-3.7B: Boating Sanitation and Dock Safety. *Implement the Vessel Sanitation and Dock Safety provisions of the San Rafael Municipal Code (Chapter 17.40) to protect water quality, ensure adequate equipment for boat sanitation and sewage pump-out facilities.*

See also Conservation/ Climate Change Element Policy C-3.6 and Programs C-3.6A, -B, and C-3.6B on canal water quality, sanitation, and sewage pump out facilities.

Policy NH-3.8: Flood Control Improvements

Coordinate development and redevelopment of uses along the Canal with a comprehensive strategy to reduce flood hazards, adapt to sea level rise and create a more resilient shoreline. This should include improvements to levees and sea walls, pump stations, and storm drainage infrastructure.

Program NH-3.8A: Pump Station Improvements. *Improve the appearance or relocate the City's Pump Station at 569 East Francisco Boulevard (near the San Rafael Yacht Harbor).*

See also Policies S-3.1 through S-3.9 in the Safety and Resilience Element on Sea Level Rise.

Policy NH-3.9: Near Southeast Land Uses

Protect industrial and commercial uses located in the Near Southeast area due to the area's central location and the lack of alternate locations for these uses. Sites for industries that are important to San Rafael's economy and needed for the convenience of its residents and businesses (such as those serving the building and construction trades) should be protected and maintained.

Program NH-3.9A: Consideration of General Plan Amendments. *Retain the existing Industrial and Light Industrial zoning in the Andersen-Woodland corridor in order to preserve the much-needed industrial base serving both San Rafael and Marin County. In the event General Plan amendments and rezoning are proposed, a comprehensive assessment of impacts on local businesses, relocation options, land use compatibility, and fiscal conditions should be required.*

Program NH-3.9B: Industrial Area Design Improvements. *Upgrade the condition and appearance of properties as redevelopment or remodeling occurs. When new development and remodels are proposed, consider visual and view impacts on the Bret Harte and Picnic Valley neighborhoods, Highway 101, and adjacent transportation routes. As necessary, apply requirements to screen outdoor storage areas and rooftop mechanical equipment.*

Program NH-3.9C: Woodland Avenue. *Create a more compatible transition between industrial and residential properties along Woodland Avenue. New or redeveloping industrial properties should minimize the potential for adverse impacts to nearby residential uses. Similarly, new housing on residentially zoned sites should minimize the potential for negative impacts on industrial uses and business operations.*

Program NH-3.9D: Andersen Drive. *Continue to minimize vehicular access points onto Andersen Drive to maintain maximum traffic flow.*

Policy NH-3.10: Highway 101 Frontage

Encourage the use of properties facing Highway 101 with uses that take advantage of their freeway visibility. Appropriate uses include automobile sales, bulk retail sales, region-serving retail uses, hotels, and similar uses. Other uses that generate economic and sales tax benefits should also be permitted, particularly as market conditions evolve. Heavier manufacturing and storage uses should be discouraged

along the freeway. Offices are an acceptable land use and are particularly encouraged on parcels within ½ mile of the SMART station.

Program NH-3.10A: Francisco Boulevard West Zoning. *Maintain zoning regulations for the Francisco Boulevard West corridor that capitalize on the area's freeway frontage. Zoning should be periodically updated to respond to economic and market changes. As the retail environment changes, other uses with positive fiscal benefits should be permitted and encouraged.*

Program NH-3.10B: Property Assembly*. For properties along Francisco Boulevard West and adjacent side streets where significant redevelopment and upgrading is needed, facilitate cooperative efforts among property owners to assemble and redevelop individual parcels.*

Program NH-3.10C: Andersen/ Francisco Boulevard West. *Facilitate improvement of the older commercial centers around the intersection of Andersen Drive, Francisco Blvd. West, and the southbound Highway 101 on- and off-ramps (Graham and Rice Centers). This could include assistance with lot assembly, substantial upgrading of the properties, and redevelopment with desired uses.*

Policy NH-3.11: Lindaro Mixed Use

Encourage improvements to the industrial area around Davidson Middle School, including Jordan and Lindaro Streets and Lovell Avenue. Live-work uses should be permitted in this area.

Program NH-3.11A: Lindaro Mixed Use Zoning. Maintain the Lindaro Mixed Use Zoning district. Consider potential expansion of this district to the north side of Andersen and west of Irwin Street, extending to Mahon Creek, along with its rebranding as an "Innovation District" that capitalizes on its proximity to Downtown San Rafael and the transit center area.

Policy NH-3.12: Canal Housing Needs

Recognize the urgent need for more affordable housing, greater housing stability, and effective anti-displacement measures in the Canal neighborhood. Support the acquisition, rehabilitation, and conversion of existing market-rate housing to affordable housing, as well as the development of new affordable housing projects on underutilized sites within the community. New housing should be designed and constructed to respond to anticipated sea level rise and other environmental hazards.

Program NH-3.12A: Increasing the Affordable Housing Supply. *Use the upcoming San Rafael Housing Element and Southeast San Rafael Precise Plan processes to identify specific programs addressing local housing needs.*

Policy NH-3.13: Canal Public Safety

Work with the Canal community to identify and respond to public safety needs. This should include capital improvements such as improved street lighting, repaired sidewalks, a police sub-station, and better relationships between residents, businesses, and law enforcement.

Program NH-3.13A: Police Substation. *Pursue development of a police substation to provide faster, more effective service to the Canal area and Southeast San Rafael.*

Policy NH-3.14: Public Facilities

Prioritize citywide public facility investment in the Canal neighborhood, recognizing the greater needs for parks, child care, libraries, public safety, schools, employment development, and social services in the community; its vulnerability to hazards, public health emergencies, and economic stress; and its high concentration of children and very low income and immigrant households.

Program NH-3.14A: Bellam/Windward Park. *Pursue development of a neighborhood park on publicly owned land at the southeast corner of Bellam Boulevard and Windward Way, or on an equivalent publicly-owned property in this area.*

Program NH-3.14B: Community Meeting Space. *Meet the need for affordable meeting and activity space, both at the Albert Boro Community Center and through the development of additional community facilities in new development. Incentives and density bonuses should be provided for private/non-profit development that sets aside space for neighborhood-based activities such as child care, education, and job training.*

See the Equity and Inclusion Element for programs on public facility and infrastructure investment in the Canal. The Precise Plan for Southeast San Rafael should further address these needs.

Policy NH-3.15: Parking and Transportation

Improve parking and transportation management in the Canal area. Access improvements are needed, given the limited capacity of Bellam Boulevard and Francisco Boulevard East, their vulnerability to flooding, and the configuration of the I-580/ US 101 interchange.

Program NH-3.15A: Canal Parking Management. *Continue to implement measures to manage parking in the Canal, including time-limited parking and enforcement of parking rules. Consider additional measures to balance supply and demand, including shared parking with private businesses, increasing supply, and improving other transportation modes, such as transit and bicycling.*

Program NH-3.15B: Community Based Transportation Plan (CBTP) Update. *Update the Canal CBTP to reflect progress made since completion of the 2006 Plan and address current transportation issues.*

See also Policy NH-3.22 on the I-580/US 101 interchange.

Policy NH-3.16: Local Business Support

Create additional opportunities for local entrepreneurs and neighborhood-serving businesses in the commercial and industrial districts adjacent to the Canal neighborhood.

Program NH-3.16A: Core Canal Industrial-Office (CCI/O) District. *Amend the Core Canal Industrial-Office zoning district to provide more flexibility for neighborhood businesses that are compatible with the existing mix of commercial and industrial activities in this zone. Housing should not be permitted in the CCI/O district.*

Policy NH-3.17: Medway Commercial District

Improve the Medway-Vivian Commercial District so that it functions as a town center for the Canal area, including:

a) Additional community gathering places and civic space.
b) Street trees, landscaping, and better pedestrian connections through the Medway/Vivian block.
c) Broader shopping choices and services for the Canal neighborhood.
d) Additional social services, such as childcare and health care.
e) Housing, especially affordable units for families.
f) Upgrading of existing business areas.
g) Additional off-street parking.

Program NH-3.17A: Public Plaza. *Encourage the creation of a public plaza to serve the Canal community. If a site cannot be identified in the Medway-Vivian area, pursue acquisition and improvement of another site nearby. The plaza should be planned and programmed by and for the Canal community, using the Precise Plan process as a starting point.*

Policy NH-3.18: Education

Support efforts of the School District to provide all Canal children with access to quality education, including access to safe, modern school facilities. Work with San Rafael City Schools to address the transportation needs of students traveling to and from school.

Policy NH-3.19: Libraries and Community Programs

Continue to invest in and expand library facilities at the Albert J Boro Community Center. Support continuing programs at this facility and at other facilities serving the Canal community, including bilingual and ESL classes, pre-school, and after school programs.

Program NH-3.19A: Youth and Family Services. *Prioritize additional programs for youth and families in the Canal area, including child care and more activities for young people.*

Policy NH-3.20: Neighborhood Appearance

Improve the physical appearance of the Canal neighborhood, including the addition of greenery and green space, street trees and landscaping, maintenance of buildings and property, enforcement of illegal dumping regulations, abatement of code violations, and more regular street cleaning.

Policy NH-3.21: Spinnaker Point/ Baypoint Lagoons

Maintain the safety, security, and appeal of Spinnaker Point/Baypoint Lagoons. Plans for Southeast San Rafael and the Canal area should acknowledge and conserve the unique characteristics of this area.

Program NH-3.21A: Sea Level Rise Adaptation. *Engage the Spinnaker Point/ Baypoint Lagoons community in sea level rise adaptation, odor mitigation, and flood control efforts.*

Program NH-3.21B: Parking Spillover. *Continue efforts to manage parking on neighborhood streets. Ensure that new development in the vicinity of Spinnaker/Baypoint includes provisions to meet parking demand without worsening existing shortages (see also Program SE-15A).*

Policy NH-3.22: Highway 101/ I-580 Interchange

Improve the US 101/ I-580 interchange to alleviate freeway and local street congestion and improve local access to and from Southeast San Rafael.

Program NH-3.22A: Interchange Improvement Process. *Ensure local participation and advocacy in planning, design, and environmental review for the 101/580 interchange. The project should include mitigation measures that facilitate local access and circulation in Southeast San Rafael, and benefit all modes of travel, including bicycles, pedestrians, and transit. Expansion of the project scope should be considered so it includes the segment of I-580 between US 101 and the Richmond-San Rafael Bridge as well as safety and functional requirements to improve access to Bellam Boulevard and other major thoroughfares in Southeast San Rafael.*

Policy NH-3.23: Marin Square/ Gary Place

Encourage reinvestment in the Marin Square/ Gary Place area, either through redevelopment of the 13-acre area or improvement of existing uses so they function cohesively. Redevelopment of the site should permit retail, high-density residential, hotel, office, and other compatible uses.

Policy NH-3.24: Canalways (see also text box, page 4-49)

Recognize the potential for the Canalways site to achieve multiple goals, including habitat conservation, wetland restoration, sea level rise adaptation, and provision of affordable housing, along with creation of additional jobs, economic activity, and tax revenue. The City supports a plan for the site that balances conservation and development objectives. Development should be economically viable for the site's owners, beneficial for the surrounding community, and responsive to the site's environmental resources and hazards. In general, development should be located in upland areas that are not critical habitat for endangered species.

> ***Program NH-3.24A: Canalways Conservation and Development Plan.*** *Encourage preparation of a Canalways Conservation and Development Plan by the landowners. Such a Plan could become the basis for a future General Plan Amendment to allow a larger development footprint than is shown on the General Plan 2040 Land Use Map, and to permit additional land uses. The first step of this process should be a biological assessment and updated delineation of wetlands. This can shape the development plan and provide the basis for mitigation measures in the event these resources will be impacted by the site's development.*

Policy NH-3.25: Windward Way

Encourage medium-density residential uses on the privately-owned 2.3-acre parcel located on the east side of Windward Way (APN 009-330-01). Development may be clustered on the site to retain views and respond to site constraints, including transmission lines. Compatible office or light industrial uses are permitted on the west side of Windward Way, consistent with zoning.

Policy NH-3.26: Shoreline Center

Support development of the few vacant and underutilized sites remaining in the Shoreline Center with light industrial/office, specialty retail, region-serving retail, hotel, R&D, biotech, and similar uses that generate jobs and revenue. Land use changes to permit other uses, including housing, could be considered through a future planning process, subject to environmental analysis and a program to mitigate potential conflicts or constraints.

Policy NH-3.27: San Quentin Ridge

Preserve San Quentin Ridge as open space due to its visual significance, importance as a community separator, slope stability problems, and habitat value. Any development permitted in this area should be on the lower, less steep portion of the hillside.

Policy NH-3.28: Adaptation

Prioritize the southeast waterfront (including the Canal shoreline) for sea level rise adaptation programs, including repair and replacement of levees, and measures to improve natural resilience such as horizontal levees and restored coastal features. Public shoreline access should be maintained throughout this area.

> *See the Safety and Resilience Element for a discussion of sea level rise adaptation programs*

North San Rafael

Policy NH-4.1: North San Rafael

Maintain North San Rafael's character as an attractive, suburban community with a strong sense of community identity and easy access to well-managed open space and parks, convenient shopping and services, and excellent schools. The City is committed to protecting and restoring North San Rafael's natural environment, investing in multi-modal transportation improvements that make it easier to get around, creating new gathering places and activity centers, sustaining business vitality, and creating new housing options that respond to diverse community needs. Plans for North San Rafael should recognize that this is a distinct and unique part of San Rafael. Standards for density, design, traffic, and parking

should be tailored to reflect local context. North San Rafael residents should have a voice at the citywide level and be directly involved in shaping decisions about the future of their community.

Policy NH-4.2: North San Rafael Town Center

Strengthen the role of the North San Rafael Town Center as an attractive, thriving heart for the North San Rafael community: an economically viable centerpiece of commerce and activity with diverse activities for persons of all ages. This should include revitalizing Northgate Mall and surrounding business areas by encouraging:

a) A distinctive and vibrant mix of uses, consistent with the area's characteristics
b) A variety of high-quality stores, entertainment uses, and services to foster local patronage and adapt to the ongoing evolution of retail and commercial activities
c) Upgrading of anchor and specialty stores, including an additional high-quality retail anchor if needed for economic vitality, consistent with traffic circulation standards
d) Nightlife activities, such as a late-night restaurant or coffee shops that harmonize with existing activities
e) Expanding the Mall, including improving the mix of activities and upgrading the appearance of the buildings and landscaping
f) Additional outdoor public places that support public gatherings and public art
g) Continued community services, which may include an expanded public library
h) Completion of the North San Rafael Promenade through the site
i) Allowing the addition of housing, including maximizing the potential for affordable housing
j) Preserving and strengthening Northgate Mall as a significant tax revenue generator for the City.

The scale of any improvements should be compatible with the surrounding community and should not exceed infrastructure capacity. New or expanded structures should demonstrate how views, sightlines, visual integrity, and character will be impacted and addressed. Promenade improvements described in the *North San Rafael Promenade Conceptual Plan (2002)* should be included in any substantial rehabilitation or expansion of the Mall. Opportunities to include green infrastructure and low impact development (LID) methods also should be pursued.

> ***Program NH-4.2A: North San Rafael Town Center Plan.*** *Pursue funding to prepare a more detailed plan for the North San Rafael Town Center area (such as a precise plan or a specific plan), including Northgate Mall and commercial properties in the vicinity. The plan should include a community-driven process that fully engages property owners, business owners, community residents, and government agencies. It should update the 1997 vision and identify strategies to strengthen the Town Center as a community gathering place, while recognizing market conditions, retail and office trends, housing needs, transportation and infrastructure capacity, and the potential for off-site impacts.*
>
> *See also Program LU-3.1A on the North San Rafael Town Center Community Plan, as well as policies in the Land Use, Community Design, and Noise Elements on land use compatibility.*
>
> ***Program NH-4.2B: Outdoor Gathering Places.*** *Include outdoor public places that support community activities and entertainment such as a public plaza for periodic arts and cultural events, outdoor cafes with music, restaurants with sidewalk or patio dining, children's play areas, teen-centered spaces, and other uses that provide outdoor seating. Design of retail spaces should be flexible enough to support these types of activities in the future.*
>
> ***Program NH-4.2C: Incentives.*** *Provide development incentives to attract desired uses to the Town Center, including retail, office, housing, and community services. Allow a height bonus of two stories (24 feet) for affordable housing. Percentage targets for housing affordability should be set during the Town Center planning process and should be the focus of a community discussion about new approaches to meeting the housing needs for persons of all incomes.*

Program NH-4.2D: Farmers Market. *Consider a partnership with the Agricultural Institute of Marin (AIM) to bring the Farmers Market to the Town Center as a permanent feature, as feasible.*

Policy NH-4.3: Design Excellence

Encourage harmonious and aesthetically pleasing design for new and existing development in the Town Center area, including upgrading of landscaping, signage, lighting. and building design. Uses on the perimeter of the area should "step down" in height and intensity along edges where the Town Center adjoins lower-density residential uses.

Program NH-4.3A. Pedestrian-Friendly Design. *Provide design guidance through the Town Center planning process. One of the objectives of this process should be to give the area a stronger pedestrian feel and improve its walkability, including landscaped walkways and improved connectivity to surrounding neighborhoods.*

Policy NH-4.4: Transportation Safety and Accessibility

Improve access and bicycle/pedestrian connections between Northgate One, the Mall at Northgate, Northgate Three, the Civic Center SMART station, the Civic Center, and surrounding neighborhoods.

Program NH-4.4A: Promenade and Other Improvements*. Use the development review and capital improvement program process to complete the North San Rafael Promenade through the Town Center. Considerations include:*

a) Routing of the Promenade to include safer crossings from the Civic Center and along Freitas Parkway. Consistent with the 2013 Station Area Plan and more recent community input, this also includes long-term improvements along Merrydale (on the east side of Mt. Olivet Cemetery) and through the Northgate III site in the event that site is redeveloped.

b) Implementing Bicycle and Pedestrian Master Plan (2018) improvements through the Town Center area, including increased availability of bicycle racks

c) Increasing public transit to and from the Town Center and making it safer and easier to access bus stops. This includes possible shuttle service to Civic Center station.

d) Implementing traffic calming on parking lot access roads, and redesigning traffic flow to minimize conflict between vehicles, bicycles, and pedestrians

e) Designing any new parking structures to provide safe pedestrian access and reduced traffic conflicts.

Program NH-4.4B: Improved Entrance to the Mall*. Support redesign of intersections along Las Gallinas, Northgate Drive, Del Presidio, and Merrydale to improve traffic flow and improve safety for pedestrians and bicyclists. Support realignment of driveways along Las Gallinas to form safer intersections and pedestrian crossings.*

See also Mobility Element Policy M-2.5 on Level of Service standards for road segments and intersections in the North San Rafael Town Center vicinity, including requirements for traffic studies. The standards reflect anticipated future traffic volumes and will provide the basis for future improvements to ensure safe and adequate access.

Policy NH-4.5: Eichler and Alliance Homes.

Preserve the design character of the neighborhood's iconic Eichler, Alliance, Kenney, and other single-story mid-century modern homes.

Program NH-4.5A: Eichler-Alliance Overlay*. Continue to enforce provisions of the Eichler-Alliance Overlay District, including height limits and design review requirements for most roof modifications. Consider preparation of design guidelines to preserve the characteristic features of these homes, and possible expansion of the Overlay District to include additional homes with similar features*

Policy NH-4.6: Terra Linda Shopping Center

Encourage improvements to Terra Linda Shopping Center. Incorporate improvements for the North San Rafael Promenade into shopping center upgrade.

Program NH-4.6A: Shopping Center Improvements. *Work with the property owners, tenants, and neighborhood residents to achieve the following objectives:*

a) Retention of popular local businesses, such as Scotty's Market
b) A pedestrian-oriented plaza with shade trees, outdoor seating, and outdoor dining
c) Coordinated, refreshed entry signage at Freitas and Del Ganado
d) A limited amount of housing, including smaller and affordable units that would provide opportunities for seniors and local employees while not intruding on the surrounding lower density neighborhood.

Policy NH-4.7: Terra Linda Community Improvements

Invest in upgraded community facilities in Terra Linda, including places for youth, families, and older adults to gather and explore their interests.

Program NH-4.7A: Community Improvements. *Consider the following improvements in the Terra Linda area:*

a) Modernization of the Terra Linda Community Center to meet current and future needs
b) Additional recreation facilities for youth, such as a teen center or skate park
c) Upgraded pocket parks along Freitas Parkway (Arbor, Munson, and Hillview), linked to a broader effort to restore Gallinas Creek (see next policy)
d) Retention of the Kaiser Permanente Medical Center, including improvements to address traffic and parking
e) Implementation of North San Rafael Promenade improvements, especially between the Community Center and Freitas Parkway to encourage access by foot and bike
f) Improved pedestrian walkways connecting Terra Linda streets.

See also Policy NSR-2 on the Northgate Branch Library

Policy NH-4.8: Community Beautification and Environmental Restoration

Continue efforts to beautify Terra Linda and restore its natural environment.

Program NH-4.8A: Beautification and Restoration Projects. *Pursue the following beautification and restoration projects in Terra Linda:*

a) Undergrounding of utilities along Freitas Parkway
b) Additional landscaping and street trees
c) Improvements to the Santa Margarita Creek in the Del Ganado Road median, including tree planting to lower water temperatures and protect water quality
d) Restoration of Las Gallinas Creek
e) Daylighting of creeks and drainageways in other locations wherever feasible.

Creek restoration projects should be designed to restore a more natural hydrologic flow, stabilize creek beds, increase stormwater absorption, improve riparian habitat and water quality, maintain storm drainage capabilities, and avoid flooding. Opportunities to combine creek restoration, utility, and promenade projects for funding purposes are strongly encouraged, and will make projects more competitive in the grant application process.

Policy NH-4.9: Neighborhood Character

Strengthen Rafael Meadows and Redwood Village as attractive low to moderate density neighborhoods. Improve connectivity between these neighborhoods and nearby amenities, such as the Civic Center SMART station, the Marin Civic Center, and the North San Rafael Town Center, particularly for local pedestrians and cyclists.

Policy NH-4.10: Merrydale Area

Encourage attractive, productive land uses along Merrydale Road and Redwood Highway, including housing, commercial, and office uses near the Civic Center SMART station. Any development in this area should have a cohesive and positive impact on North San Rafael, maintain local quality of life, and be compatible with adjacent lower density residential uses.

Program NH-4.10A: Station Area Plan Implementation. *Consider additional development opportunities along Merrydale Road consistent with the land use recommendations of the Civic Center Station Area Plan (2012). Existing height limits should be maintained at currently allowed levels. Any project in this vicinity should reflect traffic, water, and sewer capacity and emergency vehicle access constraints and be compatible with neighborhood character.*

Program NH-4.10B: Pedestrian and Bicycle Access to the Station. *Develop an ADA compatible path on the south side of the SMART rail line to connect Merrydale Road with Civic Center Drive (east of 101). Implement other access and circulation recommendations as called for by the Civic Center Station Area Plan (2013) to improve pedestrian and bicycle access to the station and nearby destinations, including a safe pedestrian/bicycle crossing of the tracks between the north and south segments of Merrydale.*

Program NH-4.10C: Merrydale / Southbound 101 Improvements*. Consistent with the Station Area Plan, pursue improvements to the Southbound 101 on and off ramps at Merrydale.*

Policy NH-4.11: Northgate Business Park

Protect and maintain existing industrial uses and industrial sites that are important to San Rafael's economy and needed for the convenience of its residents and businesses. Allow uses such as delis and copy shops that serve businesses and employees in the area.

Program NH-4.11A: Zoning. *Ensure that zoning for the Northgate Business/Industrial Park area protects the viability of industrial uses while adapting to new uses and trends in production, distribution, repair, and sales. Parcels with "Office" zoning along Redwood Highway may be considered for other uses, including live-work and multi-family housing, provided these uses are compatible with adjacent activities.*

Program NH-4.11B: Access to Civic Center Station. *Improve access to the Civic Center SMART station from this area, potentially including shuttle service along Redwood Highway and additional pathways as recommended by the 2013 Station Area Plan.*

See also Program NH-4.18A on Gallinas Creek and marsh protection in this area

Policy NH-4.12: Redwood Highway Improvements

Upgrade and unify the architecture, signage, and landscaping along Redwood Highway between Freitas Parkway and Smith Ranch Road.

Program NH-4.12A: Design and Landscaping. *Upgrade building design and landscaping through new construction and remodeling projects, particularly along Redwood Highway. Evaluate the design of projects, including views from Highway 101, with particular attention paid to rooftop equipment and screening of mechanical equipment.*

Program NH-4.12B: Pedestrian Safety. *Improve pedestrian and bicycle safety along Redwood Highway with improved sidewalks, bike amenities, and landscaping.*

Policy NH-4.13: West of Los Gamos Drive

Require any development on the steep, highly visible parcels south and west of the YMCA to be clustered to retain community-wide visible hillside resources.

Policy NH-4.14: Design Considerations for the Civic Center Vicinity

Maintain the Marin County Civic Center as a significant visual and cultural resource. Modernization and any additional development in the vicinity should enhance this resource, be consistent with the Marin County Civic Center Master Design Guidelines (2005), and adhere to the following principles:

a) Implement those recommendations in the Civic Center Station Area Plan (2013) that were formally adopted by the City
b) Require urban design analysis to ensure compatibility of materials, color and building masses with the Civic Center
c) Require functional inter-connection with the Civic Center
d) Design should complement Civic Center architecture rather than compete with it
e) Site design should retain vistas to Mt. Tamalpais and screen the maintenance yard from view from Highway 101.
f) Historic structures should be retained
g) Any changes in low-lying areas should consider risks associated with sea level rise, and evaluate opportunities to improve environmental quality, including restoration of the South Fork of Gallinas Creek and restoration of surface water quality in the Civic Center Lagoon
h) Enhance the Civic Center Drive area with safe and pleasant walkways, including completion of a sidewalk on the west side of Civic Center Drive
i) Support renovations and additions to cultural and entertainment facilities

> ***Program NH-4.14A: Civic Center Design.*** *Monitor, review and comment on County development at and around the Civic Center. Encourage the County to go through a design review process and involve the North San Rafael community in the evaluation and review of proposed changes at the Civic Center. Request that the County provide sufficient opportunity for review of major development proposals at the Civic Center by the Design Review Board, Planning Commission and City Council.*

Policy NH-4.15: Civic Center SMART Station

Continue to improve connections from the SMART station to surrounding neighborhoods and workplaces, manage impacts of the station on parking and circulation, and consider opportunities for transit-oriented development in the station vicinity.

> ***Program NH-4.15B: Station Area Plan.*** *Implement the recommendations prescribed in the Civic Center Station Area Plan (See text box). Continue to evaluate parking needs and develop plans to avoid adverse effects of parking on neighborhoods.*

Policy NH-4.16: Pedestrian, Bicycle, and Transit Connections

Provide pedestrian, bicycle, and transit improvements that better connect the Civic Center to the North San Rafael Town Center, the Northgate Business Park and McInnis Park areas, and Central San Rafael.

> ***Program NH-4.16A: Bicycle and Pedestrian Improvements.*** *Pursue improvements consistent with the Bicycle and Pedestrian Master Plan and the North San Rafael Vision Promenade Plan to improve pedestrian and bicycle safety, including:*
> *a) Completion of the southern segment of the North San Rafael Promenade to Civic Center Drive, consistent with community input*
> *b) Lighting and sidewalks on both sides of Civic Center Drive between the Civic Center and the Merrydale overcrossing*
> *c) Extension of the McInnis Parkway sidepath across the south fork of Gallinas Creek, providing a trail connection to McInnis Park in the SMART right-of-way while protecting creek and marsh habitat*
> *d) Bicycle and pedestrian safety improvements on North San Pedro Road between Los Ranchitos Road and Civic Center Drive*

e) *Working with Golden Gate Transit to provide for safer bus pad locations and design along Highway 101.*

Policy NH-4.17: San Rafael Airport

Retain an "Airport/Recreation" General Plan designation for the San Rafael Airport that is consistent with the land use covenant agreed to by the City, the County, and the property owner. Recognize the unique and valuable recreational and environmental characteristics of the site, as well as its vulnerability to sea level rise. The following uses are allowed:

- Uses consistent with the Master Use Permit as amended through the time of General Plan adoption, including the airport and ancillary airport services and light industrial uses.
- Private and public recreational uses, as specified in the 2014 Master Use Permit.
- Public utility uses as approved by the appropriate government agencies, including flood control, sanitary sewer, gas, and electric, and public safety facilities.
- Open space including restored wetlands.

Program NH-4.17A. San Rafael Airport*. As needed, require improvements consistent with this policy through the development review process.*

Policy NH-4.18: Habitat Enhancement.

Enhance the habitat values of the Smith Ranch area, including Smith Ranch Pond and McInnis Marsh.

Program NH-4.18A. Wetland Management. *Support efforts to:*

a) *Conserve and enhance the McInnis Marsh wetlands, including sea level rise adaptation projects*
b) *Maintain Smith Ranch Pond, including removal of exotic plants, habitat enhancement, and potentially adding a public observation area*
c) *Restore and enhance the North and South Forks of Gallinas Creek, including the marshland area south of Contempo Marin and east of Northgate Business Park.*
d) *Monitor for presence of Ridgway's Rail along the North Fork.*

San Pedro Peninsula

Policy NH-5.1: San Pedro Peninsula

Maintain the San Pedro Peninsula as an attractive, residential area with scenic waterfront and open space amenities, quality community services and facilities, protected environmental resources, and continued improvements to public safety and emergency preparedness. Work with Marin County to address issues of mutual concern to the City, County, and residents of incorporated and unincorporated areas, including flooding, speed enforcement, and sidewalk and median maintenance on Point San Pedro Road.

Program NH-5.1A: Hazard Mitigation. *Implement programs to improve the resilience of the San Pedro Peninsula to natural hazards, including:*

a) *Reinforcing the shoreline to reduce flooding and sea level rise hazards and explore other mitigations.*
b) *Managing wildfire hazards, particularly through vegetation management on hillside open space, replacement of hazardous trees with native species when possible, and coordination with the State and other open space stewards to reduce hazards in China Camp State Park and McNears Beach.*
c) *Working with utility operators to ensure a reliable power supply and telecommunication services at all times (i.e, before, during, and after an emergency).*
d) *Continuing emergency preparedness efforts, including evacuation procedures and identification of short-term and longer-term shelter locations, medical services, and supplies.*

e) *Identification of alternate emergency evacuation routes via China Camp and North San Pedro Road.*
f) *Support for micro-grids to improve the reliability and sustainability of electrical service and minimize the impacts of outages.*
g) *Innovative solutions to flooding and sea level rise, such as creation of artificial beaches, reworking rip rap to attenuate wave energy, and improving the promenade west of the McNear Brickyard, among others.*

***Program NH-5.1B: Community Center**. Explore opportunities to create a public community center that can serve as a location for programs, recreational services, community events, and emergency preparedness/response. This should include opportunities created at such time that the San Rafael Rock Quarry/McNear Brickyard ceases operations and is planned for reuse.*

***Program NH-5.1C: Wetlands.** Explore forward-thinking and sustainable ways to maintain and improve the vitality of the wetlands along the Peninsula shoreline. Work cooperatively with the County to manage wetlands in the unincorporated area.*

Policy NH-5.2: Point San Pedro Road

Maintain Point San Pedro Road as a safe, attractive, well-maintained transportation route serving San Pedro Peninsula neighborhoods.

***Program NH-5.2A: Point San Pedro Road Improvements.** Continue efforts to maintain Point San Pedro Road as a vital community lifeline. This should include long-term plans to raise the road elevation and increase the height of the rock wall along the shoreline. It should also include maintaining traffic capacity and flow, exploring opportunities for public transit, reducing vehicle noise through special pavement, providing safer conditions for bicyclists and pedestrians, ensuring emergency vehicle access, and maintaining the median and roadside areas.*

Policy NH-5.3: Maintenance of Public Facilities and Infrastructure

Maintain and enhance City infrastructure and public facilities serving the Peacock Gap neighborhood.

***Program NH-5.3A: Environmental Quality Improvements.** Ensure that City properties and infrastructure are maintained in a way th at protects environmental quality, reduces hazards, and protects the quality of life. This should include maintenance of stormwater pumps at Riviera Drive and Point San Pedro Road, implementing best practices for reducing siltation and improving water quality in the Peacock Gap Lagoon, renovating and maintaining Peacock and Riviera Parks, and continuing efforts to improve roads and other infrastructure.*

Policy NH-5.4: Loch Lomond Marina

Maintain and enhance the Loch Lomond Marina and adjacent properties as a community asset, new neighborhood and commercial center, and gathering place and recreational amenity for the San Pedro Peninsula. Conditions of approval and provisions of the amended Master Plan for the Village at Loch Lomond Marina shall be honored as work on the project continues.

***Program NH-5.4A: Completion of Village Improvements.** Pursue timely completion of the Village at Loch Lomond Marina project consistent with approved plans, as amended. This should include:*
a) *Completion of the remaining residential units and mixed-use building.*
b) *Construction of the Harbormasters office, boat repair facility, fuel storage and pumping facility/fuel dock, and reskinning of the yacht club building.*
c) *Completion of recreational improvements, including a kayak dock and launch ramp and public access improvements in the center plaza.*
d) *Flood-related repair work to previously completed areas and further measures to*

reduce flooding during peak storm events and king tides.
e) Completion of the pedestrian access path.
f) Off-site road and utility improvements along Point San Pedro Road.
g) Installation of a bird viewing area and interpretive signage.

Program NH-5.4B: Parking and Traffic Studies. *Consistent with the conditions of approval, monitor traffic and parking conditions at Loch Lomond Marina. A traffic and parking study should be done within one year of completion of the project as required under the permits to determine the need to retain areas currently reserved for future parking.*

Program NH-5.4C: Common Area Maintenance. *Continue to maintain publicly-accessible parks, shoreline areas, and a marina green through a community facilities (Mello-Roos) district.*

Program NH-5.4D: Community Engagement. *Continue to engage the community, including representatives of nearby homeowner and neighborhood associations, in the review of progress and resolution of issues related to the Village development and Marina operations.*

Program NH-5.4E: Coordination with Regulatory Agencies. *Continue coordination of project-related activities with natural resource agencies, including the Bay Conservation and Development Commission, the US Fish and Wildlife Service, and other agencies with responsibility for the Bay and wetland areas.*

Policy NH-5.5: Loch Lomond Area and Canal North Shore Neighborhoods

Sustain the Loch Lomond and Canal North Shore areas as safe and attractive parts of San Rafael featuring waterfront and hillside neighborhoods, accessible open space and shoreline areas, and well-managed roads, infrastructure and public facilities.

Program NH-5.5A: Disaster Preparedness. *Continue efforts to improve disaster preparedness and reduce hazards, including a fire break along the ridgeline above Loch Lomond Highlands, continued maintenance of storm drainage facilities, and adaptation to sea level rise along San Rafael Bay and the San Rafael Creek shoreline.*

Policy NH-5.6: San Rafael Rock Quarry Operations

Continue to work with the County of Marin, the Quarry operator, and area residents to address community concerns and minimize impacts of Quarry operations on surrounding residents, including noise, air quality, vibration, street maintenance, and truck traffic.

Program NH-5.6A: Quarry Impacts. *Seek ongoing input into County code enforcement activities, land use entitlements, and negotiations with Quarry operator that might reduce impacts on City infrastructure or properties in the City of San Rafael. The City will urge the County to require Best Management Practices for Quarry operations, including air quality testing, water quality monitoring and improvements, and runoff controls that reflect the latest technology and scientific methods. The City will further promote joint City-County and Quarry operator efforts to address flooding and sea level rise, pedestrian and bicycle safety, wetlands restoration, and noise mitigation.*

Program SPP-6B: Environmental Review. *If and when the Quarry applies for modifications to its existing Operating Permit, participate in discussions to ensure that:*
a) Potential environmental impacts and hazards are minimized.
b) Public health, safety and quality of life are protected.
c) Traffic and noise impacts are addressed, particularly impacts on Point San Pedro Road.
d) Future costs associated with reclamation, such as long-term environmental restoration and infrastructure repair, are objectively evaluated and considered in decisions about future Quarry operations.

e) *Collaborate with residents to ensure that any modifications to the existing Operating Permit remain within the restrictions imposed by existing and future court orders.*

Policy SPP-7: San Rafael Rock Quarry and McNear Brickworks Long-Term Plans

If operations cease during the timeframe of this Plan, consider annexation and redevelopment of the San Rafael Rock Quarry and McNear Brickworks, taking into account the following:

a) Consider the County's Amended Reclamation Plan, as it may be further amended in the future, in land use decisions. The current Reclamation Plan supports a mixture of single family residences, townhomes, and condominium units; a marina; commercial, recreational, hospitality, and other neighborhood-serving uses; and open space. A revised Reclamation Plan is anticipated during the timeframe of this General Plan and could alter the planned post-mining uses. Specific future uses would be determined through a separate entitlement process that would potentially include annexation into the City.
b) Consider redevelopment of the site to the extent that traffic capacity is available and the project can meet the City's transportation standards, including performance of intersections between the site and US 101. Alternative modes of transportation may be considered to facilitate compliance with City standards. Water transit (including water taxis and potential ferry service) should be considered in any phase of the project and factored into the transportation analysis.
c) If needed for traffic capacity and to the extent consistent with City traffic standards, Point San Pedro Road should be expanded to four lanes east of Riviera Drive, including traffic calming measures and bicycle lanes consistent with the Bicycle and Pedestrian Master Plan.
d) Create a public use park band along the existing shoreline averaging at least 100 feet in width linking McNears Beach with the public walkway along Point San Pedro Road, as approved by the Bay Conservation and Development Commission.
e) Consider opportunities for multi-use community facilities serving residents of the San Pedro Peninsula and beyond, such as a center for the arts, education, and the environment.
f) Protect and enhance the freshwater marsh and ponds, taking sea level rise impacts into consideration. Consider restoring the saltwater marsh to tidal action.
g) Preserve and gradually restore tree species native to the site's woodland areas.
h) Incorporate some of the historic brickworks into the project's design.
i) Consider redevelopment of the site in phases as reclamation is completed in specific areas. The McNear Brickyard would likely be the first phase and would require a site access road from Point San Pedro Road that is separate from the road accessing the mining and asphalt operations. Phased redevelopment would require amendments to the existing Quarry entitlements to be approved by the County in coordination with the property owner.

Program SPP-7A: Quarry Planning. *Participate, through the County of Marin, in any revisions to the San Rafael Rock Quarry Reclamation Plan, which should form the basis for decisions about future land uses and possible annexation.*

Program SPP-7B: Shoreline Use. *Use the development review process to establish a bay frontage linear park that connects McNear Beach to the existing shoreline walkway along Point San Pedro Road. The park should incorporate sea level rise adaptation measures.*

COMMUNITY DESIGN AND PRESERVATION ELEMENT

Goal CDP-1: A Beautiful City

Preserve and strengthen San Rafael's natural and built features to enhance the appearance and livability of the City. *The interplay between San Rafael's built environment and natural context contributes to the city's strong sense of place and identity. The hills, ridgelines, and bays, as well as views to Mount Tamalpais, imprint the natural environment into the image of the city. Looking forward, San Rafael will remain an attractive, interesting, and well-designed city. It respects its natural landscape and waterfront, preserves its legacy of historic buildings, and values its diverse design qualities. San Rafael's distinct features will be protected and enhanced, connecting residents to nature, history, and home.*

Policy CDP-1.1: City Image

Reinforce San Rafael's image by respecting the city's natural features, protecting its historic resources, and strengthening its focal points, gateways, corridors, and neighborhoods.

Policy CDP-1.2: Natural Features

Recognize and protect the key natural features that shape San Rafael's identity, including the Bay, local hills and ridgelines, creeks and wetlands, tree cover, and views of Mt. Tamalpais and other natural landmarks. Height limits and other building standards should respect San Rafael's natural topography and reinforce its sense of place, including the character and boundaries of individual neighborhoods.

Policy CDP-1.3: Hillside Protection

Protect the visual integrity and character of San Rafael's hillsides and ridgelines.

> ***Program CDP-1.3A: Hillside Design Guidelines****. Continue to implement hillside design guidelines through the design review process, as well as larger lot size requirements for hillside areas where there are access limitations or natural hazards. Update the design guidelines as needed.*

See the Conservation/ Climate; Safety; and Parks, Recreation, and Open Space Elements for additional policies on hillside management, landslide hazard reduction, wildfire prevention, and related topics.

Policy CDP-1.4: Waterfront Identity

Strengthen San Rafael's identity as a waterfront city, providing improved visual and physical access to San Pablo Bay, San Rafael Bay, and the San Rafael Canal.

> ***Program CDP-1.4A: Canalfront Design Plan.*** *Implement the Canalfront Conceptual Design Plan (2009) recommendations. Development near the shoreline should maximize views to the water and public access to the shoreline.*
>
> ***Program CDP-1.4B: Canal Promenade.*** *Pursue development of a continuous pathway or promenade along the Canal waterfront.*

See the Conservation/Climate Element for policies on shoreline access, creek and wetland setbacks, and climate adaptation.

Policy CDP-1.5: Views

Respect and enhance to the greatest extent possible, views to the Bay and its islands; wetlands, marinas, and canal waterfront; hillsides and ridgelines; Mt. Tamalpais; Marin Civic Center; and St. Raphael's bell tower; as seen from streets, parks, and public pathways.

Program CDP-1.5A: Evaluating View Impacts. *Consider the impact of proposed development on views, especially views of Mt Tamalpais and nearby ridgelines. Where feasible, new development should frame views of ridges and mountains and minimize reduction of views, privacy, and solar access.*

Program CDP-1.5B: Guidance on View Protection. *Establish clearer, more objective City guidelines and standards on view protection, privacy, and solar access for new development, additions, and alterations.*

Program CDP-1.5C: Downtown Height Profile. *Develop zoning and design tools that encourage both continuity and variation in building heights, along with improved solar access and interesting roof elements such as domes, cupolas, and corner towers. Views of Downtown should be accented by memorable building elements, rather than a flat profile of buildings of uniform height.*

See also Conservation/Climate Program C-4.5B on solar access

Policy CDP-1.6: Gateways

Provide distinctive, attractively designed gateways into the City and its major districts. Gateways should optimally convey a sense of arrival, reinforce a positive image of the City, and help define a unique identity for individual districts.

Program CDP-1.6A: Gateway Improvements. *Evaluate each gateway shown on Exhibit 5-2 to develop recommendations for architecture, landscape design, public art, and signage. Prioritize the recommendations and include appropriate improvements in the City's Capital Improvements Program.*

Program CDP-1.6B: Neighborhood and District Gateways. *Support landscaping, signage, and design improvements at neighborhood and business district entry points. Evaluate opportunities for gateway improvements in private development where appropriate.*

See the Arts and Culture Element for policies on public art

Goal CDP-2: A Sense of Place

Strengthen San Rafael's sense of place. *San Rafael is a collage of uniquely identifiable places—a walkable downtown bustling with shops and restaurants, active and connected neighborhoods, a regional mall, business parks, industrial areas, and more. These different places are stitched together by streets and open spaces, creating a citywide identity unlike anyplace else in Marin County. Design decisions should reinforce the city's identity, protecting qualities that are valued while recognizing opportunities for improvement and positive change.*

Policy CDP-2.1: Neighborhoods, Districts, and Centers

Strengthen San Rafael's identity as a community of unique centers, neighborhoods, corridors, and districts. Design decisions should maintain Downtown as a historic, walkable center; preserve the integrity and character of residential neighborhoods; and improve the appearance and function of, mixed usedistricts such as the North San Rafael Town Center.

Program CDP-2.1A: Place Types. *Identify "place types" in the City that establish defining characteristics and provide the basis for objective design standards. Design standards for each place type should support housing production and commercial development that is consistent and compatible with each neighborhood or employment district.*

Program CDP-2.1B: Design Guidance. *Use precise plans, specific plans, and similar tools to establish a design vision for different parts of the city, and to identify desired improvements.*

See also Policy NH-4.# on the vision for the North San Rafael Town Center

Policy CDP-2.2: Downtown Urban Design

Enhance the design qualities that make Downtown San Rafael a unique and special place, including its traditional street grid, street trees, walkable scale, historic building stock, and varied architecture.

Program CDP-2.2A: Downtown Precise Plan. *Implement the design recommendations and standards of the Downtown Precise Plan, including public improvements.*

Policy CDP-2.3: Neighborhood Identity and Character

Recognize, preserve, and enhance the positive qualities that shape neighborhood identity. Development standards should respect neighborhood context and scale and preserve design elements that contribute to neighborhood livability. Standards should also provide the flexibility for innovative design and new types of construction. Code enforcement and City programs should maintain community standards and the integrity of buildings and landscapes.

Program CDP-2.3A: Code Enforcement. *Maintain code enforcement and nuisance abatement programs to address litter, illegal dumping, unlawful storage, and property maintenance issues.*

Program CDP-2.3B: Educational Materials. *Continue to provide programs and educational materials to inform property owners about property maintenance requirements, and sanitation, health, and safety standards.*

See the Housing Element for policies on residential rehabilitation loans and other issues related to maintenance and repair of the housing stock. See also Program LU-2.12 and Policy H-16 on ADUs, including best practices for integrating ADUs into the fabric of existing homes and neighborhoods. See Policy EDI-3.5 on property maintenance.

Policy CDP-2.4: Corridors

Improve the function and appearance of San Rafael's major transportation corridors and enhance their role in shaping the city's character.

Program CDP-2.4A: Streetscape Guidelines. *Develop general streetscape guidelines for residential arterials, auto-oriented commercial streets, pedestrian streets, and other types of streets in the city. Include site-specific recommendations for individual corridors when needed. Streetscape guidelines should support climate change and "complete streets" goals as well as aesthetic goals.*

Program CDP-2.4B: Right-of-Way Landscaping*. Encourage Caltrans to install and maintain landscaping along Highway 101 and Interstate 580.*

Program CDP-2.4C: Highway 101 Crossings. *Promote public art, restoration of Irwin Creek, better lighting, and other improvements beneath the Downtown Highway 101 viaduct to better connect the east and west sides of the freeway and make the area more hospitable to pedestrians and cyclists. Consider similar improvements in North San Rafael as part of the future PDA planning process, including the Merrydale Promenade connector near the Civic Center Station.*

Policy CDP-2.5: Commercial and Industrial Districts

Recognize and preserve the design elements that contribute to the economic vitality, functionality, and visual quality of San Rafael's commercial and industrial districts. Where feasible, improve the appearance of these areas by making them more walkable, attractive, and visually compatible with the neighborhoods around them.

> ***Program CDP-2.5A: Commercial and Industrial Beautification.*** *Where feasible, develop and implement urban design improvements such as street trees, sidewalks, lighting, landscaping, and signage, in commercial and industrial areas through the development review process, capital improvement program, and similar means.*

Goal CDP-3: Attractive Streets and Public Spaces

Create streets, public spaces, and civic buildings that add value to private property, promote environmental sustainability, and contribute to San Rafael's visual quality and identity. *A well-designed public realm contributes to the city's vitality and helps achieve its sustainability, livability, and climate action goals. Streets, parks, plazas, and civic buildings are designed and maintained to convey civic pride. They provide common ground that connects and unites the community.*

Policy CDP-3.1: Plazas and Active Public Spaces

Encourage the integration of public space—or private space that is available for public use—in larger-scale commercial, civic, and mixed use development. Such spaces should be designed and operated so that they can be easily maintained, remain safe and attractive, and contribute positively to the community.

> ***Program CDP-3.1A: Activation of Public Space.*** *Encourage activities such as farmers markets and performances in public spaces to enhance their usefulness and role as community gathering space.*

> ***Program CDP-3.1.B: Solar Access for Public Space.*** *Explore potential sun and shading standards for select public and quasi-public spaces.*

> ***Program CDP-3.1C: Universal Design.*** *Incorporate the concept of universal design in the design of public space, so that persons of all physical abilities can safely and comfortably use city streets and civic places.*

> ***Program CDP-3.1D: Alleys.*** *Improve Downtown alleys so they become more functional, economically productive and activated public spaces.*

> ***Program CDP-3.1E: North San Rafael Improvements.*** *Encourage and incentivize the development of public art, publicly accessible plazas, and other activated spaces in new and redeveloped projects in North San Rafael, especially in the Northgate Mall/ North San Rafael Town Center area.*

Policy CDP-3.2: Street Furnishings

Use street furniture and pavement materials to create a more attractive city, particularly in commercial districts. Seating, trash receptacles, streetlights, art, and other street furnishings should be compatible with--and strengthen—the identity of San Rafael's business districts and neighborhoods while supporting "green streets" and low impact development principles.

> ***Program CDP-3.2A: Right-of-Way Encroachments.*** *Continue to refine City standards for encroachments into the public right of way for features such as sidewalk dining, parklets, awnings,and temporary signage.*

Program CDP-3.2B: Arts Partnerships. *Explore opportunities to engage the local arts community in the design of public realm improvements, including public art, painting of utility boxes, murals, and similar improvements.*

See the Arts and Culture Element for public art policies and the Community Services and Infrastructure Element for Green Streets policies

Policy CDP-3.3: Landscape Design in Public Rights-of-Way

Use landscape design in public rights-of-way to soften the built environment, showcase San Rafael's natural environment, and advance City goals related to walkability, climate change, conservation, and hazard reduction. Landscaping should control heat build-up from pavement, provide shade, reduce air pollution, and improve visual quality.

See the Community Services and Infrastructure Element for policies on Utility Undergrounding

Policy CDP-3.4: Landscape Maintenance

Prioritize landscape maintenance along the City's most heavily traveled roadways and gateways. Control costs by using low-maintenance materials, removing litter, and avoiding deferred maintenance. Operational practices should support the City's commitment to water conservation, fire prevention, and reduced use of toxic materials.

Program CDP-3.4A: Landscape Stewardship. *Encourage partnerships with neighborhoods and civic organizations to maintain and improve the City's landscaped areas.*

Policy CDP-3.5: Street Trees

Encourage the planting and maintenance of street trees to reduce urban heat island effects, sequester carbon, improve air quality, absorb runoff and wind, define neighborhoods, and improve the appearance and character of City streets.

Program CDP-3.5A: Street Tree Master Plan. *Develop a comprehensive citywide Street Tree Master Plan. The Plan should address street tree planting, species selection, maintenance, replacement, diversification, wood utilization, and tree waste recycling and should ensure that trees are appropriate for the planting areas where they are located.*

Program CDP-3.5B: Street Tree Inventory. *Create an inventory of City street trees, using volunteers to the greatest extent feasible.*

Program CDP-3.5C: Street Trees for New Development. *Require street trees in new developments and major property upgrades.*

See the Community Services and Infrastructure Element for policies and programs regarding coordination with PG&E on tree maintenance and safety and Policy C-1.16 on urban forestry.

Program CDP-3.5D: Street Tree Maintenance. *Support the long-term health of San Rafael's urban forest through timely, quality street tree maintenance. Seek diversified funding sources for maintenance and replacement.*

Policy CDP-3.6: Tree Replacement

Discourage the removal of healthy trees. Support replacement when trees are removed due to health, safety, or maintenance cost reasons.

Program CDP-3.6A: Mitigation for Tree Removal. *Continue to implement mitigation requirements for tree removal in new development. When necessary, this could include planting*

of trees in locations other than the project site. Tree replacement value should be based on mass rather than a numeric ratio score.

Program CDP-3.6B: Tree Replacement Due to Sidewalk Damage. *Consider replacing trees that have root systems that cause sustained damage to pavement and sidewalks.*

Policy CDP-3.7: Wayfinding and Directional Signage

Encourage the use of consistent graphic conventions and logos for City signs, including gateway signs and wayfinding signs.

Program CDP-3.7A: Downtown Wayfinding. *Implement the signage recommendations in the 2018 Downtown Parking and Wayfinding Study to direct people to cultural resources, public facilities, parks, shopping areas, parking, and key destinations. Consider wayfinding signage in other parts of the City, such as Northgate, the Point San Pedro area, and the Canal.*

Program CDP-3.7B: Interpretive Signage. *Encourage the use of interpretive signage to provide information about local history, the natural environment, and cultural resources.*

Policy CDP-3.8: Greenways

Encourage the development of "greenways" such as the North San Rafael Promenade and the Tamalpais Greenway that improve connectivity, link neighborhoods, restore creeks, and enhance the appearance of the city.

See the Community Services and Infrastructure Element for policies on the visual impacts of utility improvements and the Neighborhoods Element (North San Rafael section) for discussion of the Promenade.

Goal CDP-4: Quality Construction and Design

Encourage quality construction and design that enhances San Rafael's character and creates places of lasting value. *San Rafael has many examples of fine architecture and a few exceptionally memorable buildings. The City embraces creative and distinctive design, while ensuring that the scale, height, and massing of new development respects the surrounding context.*

Policy CDP-4.1: Design Guidelines and Standards

Use design guidelines and standards to strengthen the visual and functional qualities of San Rafael's neighborhoods, districts, and centers. Guidelines and standards should ensure that new construction, additions, and alterations are compatible with the surrounding neighborhoods while still allowing for innovative, affordable design.

Program CDP-4.1A: Design Guidelines. *Maintain design guidelines for residential, non-residential, and mixed use construction. Guidelines should define the elements of good design and encourage compatible building patterns, scale, mass, and transitions between areas. Design guidelines should be periodically updated to respond to construction trends, neighborhood feedback, and changes in the way people live, work, and travel.*

Program CDP-4.1B: Objective Design and Development Standards. *Develop and maintain objective (measurable) design standards for new higher density and mixed use housing that meet the requirements of State law and support new housing construction. These standards would be used in lieu of those referenced in Program CDP-4.1A and apply only to proposals for multi-family and mixed use housing meeting specific State-adopted criteria. (insert text box on SB 35)*

Program CDP-4.1C: Form-Based Codes. *Encourage the use of form-based codes (FBCs) as an alternative to design guidelines and zoning standards in specific districts of the City such as Downtown. The FBC integrates design and regulatory controls to improve design quality and enhance public space.*

See the Safety Element for policies on fire-safe design and construction

Policy CDP-4.2: Public Involvement in Design Review

Provide for public involvement in design review through effective noticing, adequate comment timelines, and clear project review opportunities while still achieving development streamlining objectives.

Program CDP-4.2A: *Improving Design Review Efficiency. Continue to improve the design review process by:*

- *Engaging stakeholders and the developer early so that issues can be worked out before initial submittal*
- *Clarifying requirements for initial submittals to improve their quality*
- *Adjusting notification procedures to encourage earlier and broader participation*
- *Changing the project review sequence so that Planning Commission feedback is solicited before the Design Review Board*
- *Periodically evaluating and updating the guidelines, including thresholds for design review.*

Program CDP-4.2B: Community Discussions of Good Design. *Continue to engage the community in discussions to define "good design" and strategies to improve architecture and public space.*

Policy CDP-4.3: Creative Architecture and Design

Encourage creative architecture while respecting the context of each site.

Program CDP-4.3A: Reinforcing Design Context. *Ensure that design guidelines recognize the distinct characteristics of San Rafael neighborhoods. Guidelines should ensure that new development respects the character-defining elements of neighborhoods, including height, scale, materials, and setbacks.*

Program CDP-4.3B: Successful Design Portfolio*. Establish a portfolio of existing buildings and projects illustrating successful design and make it available on the City's website.*

Program CDP-4.3C: Exceptions. *Allow variation from design guidelines and standards for exceptional buildings that contribute public benefits and make a significant contribution to their surroundings.*

See also Housing Policy H-2

Policy CDP-4.4: Single Family Home Design

Encourage the design of new homes, additions, and alterations that integrate well with their surroundings and support the livability of neighborhoods. Residential additions and alterations should respect the proportions, styles, and materials of the house and adjacent properties.

See also Housing Program H-2A

Policy CDP-4.5: Higher Density Design

Encourage high-quality architecture and landscape design in new higher-density housing and mixed use projects. Such projects should be designed to be compatible with nearby buildings and respect the character-defining features of the surrounding neighborhood or district.

See Programs CDP-4.1A through C on design guidelines and standards. See the Land Use and Mobility Elements for policies on parking in higher-density housing areas.

Policy CDP-4.6: Open Space in Multi-Family Housing

Require private outdoor areas such as decks and patios, as well as common open space areas, in new multi-family development and mixed use housing. Common open space may include recreation facilities, gathering places, and site amenities such as picnic and play areas.

> ***Program CDP-4.6A: On-Site Recreational Areas****. Continue requirements for on-site recreational areas as specified in the zoning ordinance.*

Policy CDP-4.7: Larger-Scale Buildings

Design larger scale buildings to reduce their perceived mass. Encourage the incorporation of architectural elements such as towers, arcades, courtyards, and awnings to create visual interest, provide protection from the elements, and enhance orientation.

> ***Program CDP-4.7A: Signature Buildings.*** *Allow for "signature" buildings that create a positive impression of San Rafael. Memorable, innovative architecture should be encouraged through the placement of building forms and features, selection of materials, and unique treatment of corner sites, and similar measures. Innovative climate-adaptive measures such as vertical gardens, roof-gardens, living building design and onsite water reuse also should be encouraged.*

Policy CDP-4.8: Scale Transitions

Require sensitive scale and height transitions between larger and smaller structures. In areas where taller buildings are allowed, they should be designed to minimize shadows, loss of privacy, and dramatic contrasts with adjacent low-scale structures. Exceptions may be made where taller buildings are also permitted on the adjoining site.

> ***Program CDP-4.8A: Building Stepbacks.*** *Use tools such as stepbacks and daylight planes to improve height transitions where taller buildings are constructed near lower-scale buildings. The perceived height and bulk of new buildings can be reduced through measures such as stepping back the upper floors, articulating the building elevation, and using varied exterior building materials and colors.*

Policy CDP-4.9: Parking and Driveways

Encourage parking and circulation design that supports pedestrian movement and ensures the safety of all travelers, including locating parking to the side or rear of buildings, limiting driveway cuts and widths, , and minimizing large expanses of pavement. Parking should be screened from the street by landscaping and should provide easy access to building entrances.

Policy CDP-4.10: Landscape Design

Encourage privately owned and maintained landscaping that contributes to neighborhood quality, complements building forms and materials, improves stormwater management and drainage, and enhances the streetscape. Natural elements such as plants should be an integral part of site development and should enhance the built environment.

> ***Program CDP-4.10A: Zoning Regulations.*** *Periodically evaluate the landscape provisions in the Zoning Ordinance to respond to climate change, hazards, water availability, shading needs, and other issues. Zoning should support the City's goal of having a strongly landscaped character.*
>
> *See the Conservation Element for additional policies on water-efficiency and the use of trees and native plants for urban cooling and habitat enhancement.*

Program CDP-4.10B: Industrial Landscape Design. *Ensure that landscape guidelines for new industrial and general commercial development provide effective buffering, while also supporting water conservation, water quality, and fire hazard reduction goals.*

Program CDP-4.10C: Parking Lot Landscaping Requirements. *Review City standards for parking lot landscaping to ensure that they adequately address visual screening, environmental quality, and climate-related issues.. Standards should allow for solar shade structures within parking areas.*

See the Conservation/Climate Element for landscape policies related to urban runoff and water quality

Policy CDP-4.11: Lighting

Encourage lighting for safety and security while preventing excessive light spillover and glare. Lighting should complement building and landscape design.

See Conservation/Climate Element Policy C-1.19 for additional guidance on dark skies.

Program CDP-4.11A: Lighting Plans. *Continue to require lighting plans for projects proposing exterior lighting. The design review process should be used to evaluate lighting for safety, consistency with dark sky objectives, and potential mitigation to reduce negative impacts on nearby properties.*

Policy CDP-4.12: Commercial Signage

Encourage commercial signage that provides the visual identification necessary for business success, while enhancing the building, streetscape, and surrounding area.

Program CDP-4.12A: Sign Regulations. *Periodically update the City's sign regulations to reflect new technologies, materials, and design trends, and to ensure that regulations comply with all applicable state and federal laws.*

Goal CDP-5: Protected Cultural Heritage

Protect and maintain San Rafael's historic and archaeological resources as visible reminders of the city's cultural heritage. *As a mission city established over 200 years ago, San Rafael values its history and the people, places, and buildings that have shaped it. Preservation can provide a strong sense of place and civic identity, bolster the City's economy, and support the City's sustainability goals.*

Policy CDP-5.1 Historic Buildings and Areas

Preserve buildings and areas with special and recognized historic, architectural or aesthetic value, including but not limited to those on the San Rafael Historical/ Architectural Survey. New development and redevelopment should respect architecturally and historically significant buildings and areas. [Add text box: Is it "historic" or just old?]

Program CDP-5.1A: Preservation Ordinance. *Continue to implement the City's Historic Preservation Ordinance. The Ordinance should be reviewed at least once every 10 years to ensure that its criteria, classifications, and procedures provide the most effective measures to assess proposed changes to historic properties and are consistent with Secretary of the Interior standards.*

Program CDP-5.1B: Oversight Responsibilities*. Create a more formal means of oversight for review of planning and building applications affecting historic resources. This could include a contract with an architectural historian, or an advisory committee convened as needed to advise the Planning Commission and Design Review Board on matters and policies related to*

preservation or the modification of historic structures. If an oversight body is created, it should represent diverse perspectives and interests.

Policy CDP-5.2 Inventorying Historic Resources

Maintain and periodically update inventories of local historic resources, using methods that are consistent with state and federal criteria, reflect local values, and do not unreasonably constrain property rights and interests. Historic resources may include sites associated with important historic events or people, archaeological resources, and landscape elements, in addition to older buildings.

***Program CDP-5.2A: Context Statement**. Prepare a citywide historic context statement to provide the framework for evaluating a property's historic significance and integrity.*

***Program CDP-5.2B: Inventory Update.** Continue to update the City's Historical/ Architecture Survey, which is an inventory of buildings of architectural value, historic buildings and/or districts and historic elements such as signs, monuments, and gates. A priority should be placed on neighborhoods with large concentrations of older structures, as well as areas most likely to experience development pressure in the future. [Inset: Historic Surveys Over the Years]*

***Program CDP-5.2C: Criteria for Designation.** Review and adjust the criteria for designation of historic resources so they align with those of state and federal preservation agencies.*

***Program CDP-5.2D: Additional Landmarking.** Based on updated historic preservation data, identify additional structures or sites for local and/or state landmark status and/or potential nomination to the National Register of Historic Places.*

Policy CDP-5.3: Districts

Encourage the formation of historic or architectural conservation districts in areas where important historic resources are concentrated and where there is property owner and community support for such designations. Such districts should provide for preservation, restoration, and greater awareness of the resources they contain, while providing financial and property tax incentives for property owners.

***Program CDP-5.3A: Downtown Districts.** Consider the designation of an additional historic district in Downtown San Rafael based on the 2019 Downtown Precise Plan field survey of Downtown properties.*

***Program CDP-5.3B: Conservation Districts**. Consider the use of Conservation Districts as an alternative to historic districts or the designation of individual landmarks (see text box).*

***Program CDP-5.3C: Eichler Neighborhoods.** Recognize the Eichler subdivisions of North San Rafael as a defining part of San Rafael's architectural heritage. Continue to take steps to preserve the characteristic features of Eichler homes and neighborhoods, including height and roofline modifications.*

Policy CDP-5.4: Preservation Incentives

Create innovative incentives that encourage stewardship of San Rafael's historic resources. Incentives should be enacted before (or concurrently with) placing additional restrictions on historic properties, to ensure that preservation makes economic sense.

***Program CDP-5.4A: Zoning and Development Incentives.** Support the use of transfer of development rights and façade easements to encourage preservation of historic buildings.*

***Program CDP-5.4B: Local Financial Incentives.** Pursue development of a local Mills Act program to allow contracts with the owners of historic properties meeting criteria to be defined by the City. The contracts allow for reduced property taxes in exchange for an agreement to*

maintain the historic integrity and visibility of the structure. In addition, enact reductions or waivers of local permitting fees for qualifying historic preservation projects.

Program CDP-5.4C: Non-Local Financial Incentives
Support financial assistance for preservation through state and federal grants and loans, tax credits, National Trust Preservation funds, the Federal Historic Preservation Tax Incentives Program, and similar programs.

Policy CDP-5.5: Adaptive Reuse

Encourage the adaptation and reuse of historic and older buildings as a way to preserve San Rafael's heritage, especially where the original use of the building is no longer viable.

Program CDP-5.5A: California Historic Building Code. *Use the State historic building code to relieve historic buildings from modern code requirements, thus making it easier to reuse the building. Explore other incentivizes or code changes that allow interior spaces in older buildings to be more easily and affordably updated.*

Program CDP-5.5B: Zoning. *Investigate zoning exceptions for historic structures, such as reduced on-site parking, setback, and driveway width requirements. The range of permitted or conditionally permitted uses in historic structures should be expanded to make them more viable for reuse.*

Policy CDP-5.6: Protecting the Integrity of Historic Properties

Ensure that modifications to designated historic properties, including additions, alterations, and new structures, are visually compatible with the property's contributing features, as defined by the San Rafael Municipal Code.

Program CD-5.6A: Certificates of Appropriateness. *Continue existing requirements for "Certificates of Appropriateness" (COA) for alterations to designated historic resources. Criteria for COAs should be consistent with State and federal standards.*

Program CDP-5.6B: Design Guidelines. *Address historic preservation in the City's design guidelines, including successful examples of (a) adaptive reuse, alterations, and other changes; and (b) new infill development in the context of an older neighborhood, including examples of contemporary architecture. Infill development in older areas does not need to mimic historic development but should acknowledge and respect its context.*

Program CDP-5.6C: Landscapes and Natural Features. *Consider landscapes, gardens, mature trees, and natural features as contextually relevant when defining historic value. Encourage the preservation of such features when they are determined to be significant.*

Policy CDP-5.7: Maintenance of Historic Properties

Strongly support the maintenance of historic properties and avoid their deterioration to the point where rehabilitation is no longer feasible (e.g., "demolition by neglect").

Program CDP-5.7A: Incentives. *Support property owner efforts to maintain and restore historic properties through fee reductions, tax credits, and Code exceptions.*

Policy CDP-5.8: Preservation Advocacy

Encourage local preservation efforts by community organizations. Provide technical support to such groups and encourage their participation in City-sponsored preservation activities.

Program CDP-5.8A: Public Recognition. *Support programs that publicly recognize property owners who have done an exceptional job preserving an historic property*

***Program CDP-5.8B: Volunteers**. Engage volunteers in historic surveys and similar activities to the greatest extent feasible, with professional assistance as needed.*

***Program CDP-5.8C: Public Events and Social Media.** Encourage organizations such as the Marin History Museum and San Rafael Heritage to produce events, publications, social media, and exhibits about the historic resources that exist in San Rafael.*

Policy CDP-5.9: Preservation Education

Encourage historic preservation activities and programs that heighten awareness of historic resources and the ways that architecture and landscape define the city's character.

***Program CDP-5.9A: Preservation Reference Materials.** Support the efforts of local organizations to maintain and expand collections of historic photographs, artifacts, books, media, oral histories, and other resources, and to make these materials available through on-line archives.*

***Program CDP-5.9B: Plaques and Markers.** Support efforts to install plaques and markers recognizing historic locations and the locations of important historic events in San Rafael.*

***Program CDP-5.9C: School Programs.** Support local school efforts to incorporate San Rafael history lessons, events, and field trips into their curriculum and programs.*

Policy CDP-5.10: Economic Benefits of Preservation

Leverage San Rafael's historic resources to create jobs, attract visitors, and generate local revenue. Recognize the value of preservation in placemaking, including branding and marketing areas such as Downtown San Rafael.

***Program CDP-5.10A: Walking Tours, Trails, and Historic Festivals.** Encourage walking tours, historic trails, mobile apps, and history fairs and programs that attract visitors. Partner with the Marin Convention and Visitors Bureau and other organizations to promote events celebrating San Rafael history.*

***Program CDP-5.10B: Marin County Civic Center.** Work with the County of Marin to encourage and support preservation of the Frank Lloyd Wright-designed Civic Center complex and grounds as a nationally important historic architectural site and major destination for regional, national, and international visitors.*

***Program CDP-5.10C: Mission San Rafael.** Promote San Rafael's historic origin as a "mission city," and Mission San Rafael Arcangel as a destination of historic interest. (insert text box on China Camp)*

Policy CDP-5.11: Sustainability

Recognize the potential sustainability benefits of historic preservation, including reduced resource consumption, reduced landfilled waste, reduced energy use, and the need for fewer raw materials.

***Program CDP-5.11A: Energy Retrofits.** Encourage the use of energy efficiency incentives to assist in the rehabilitation of older buildings.*

Policy CDP-5.12: Inclusive Approach to Preservation

Ensure that preservation efforts are culturally inclusive and recognize the contributions of all racial and ethnic communities to the City's history and development. Sites and structures that are culturally important to specific ethnic communities, including those associated with events and people, should be part of local preservation efforts.

Program CDP-5.12A: Community Heritage Programming. *Engage representatives of the different ethnic communities, as well as preservation organizations and San Rafael schools, universities, and colleges to document and preserve the history of each community in San Rafael, including sites and structures of historic importance. Support educational curriculum that raises awareness of the City's cultural heritage and includes non-Eurocentric perspectives.*

Policy CDP-5.13: Protection of Archaeological Resources.

Protect significant archaeological resources by:

a) Consulting the City's archaeological resource data base prior to issuing demolition or construction permits in known sensitive areas.
b) Providing information and direction to property owners to make them aware of these resources and the procedures to be followed if they are discovered on-site.
c) Identifying, when possible, archaeological resources and potential impacts on such resources.
d) Implementing measures to preserve and protect archaeological resources, including fines and penalties for violations.

Program CDP-5.13A: Archeological Resources Ordinance. *Continue to implement the existing Archeological Resources Ordinance and the City's Archaeological Resources data base.*

Policy CDP-5.14: Tribal Cultural Resources

Coordinate with representatives of the Native American community to protect historic Native American resources and raise awareness of San Rafael's Native American heritage .

Program CDP-5.14A: AB 52 Compliance. *Implement the requirements of Assembly Bill 52 by providing opportunities for meaningful input from Native American representatives in the development review process.*

Program CDP-5.14B: Protection of Tribal Resources. *Incorporate standard approval conditions in future development projects that ensure that Native American resources are protected during construction. In the event tribal resources are discovered, earth-disturbing work must be temporarily suspended pending evaluation by a qualified archaeologist and an appropriate Native American representative. Where appropriate, a mitigation plan shall be developed in accordance with state guidelines and tribal input.*

CONSERVATION AND CLIMATE CHANGE ELEMENT

Goal C-1: Supporting Our Natural Communities

Protect, restore, and enhance San Rafael's environment and natural communities. *San Rafael is defined by natural features such as hillsides, ridgelines, creeks, shorelines, and open water. It includes diverse ecosystems such as woodlands, grasslands, chaparral, wetlands, and riparian areas. These areas provide habitat for interconnected communities of plants and animals, some of which are threatened and endangered. The City is committed to the wellbeing and careful management of its environment. Natural communities must be protected, supported, and sustained into the future.*

Policy C-1.1: Wetlands Preservation

Require appropriate public and private wetlands preservation, restoration and/or rehabilitation through the regulatory process. Support and promote acquisition of fee title and/or easements from willing property owners.

> ***Program C-1.1A: Wetlands Overlay District.*** *Continue to implement wetlands policy through a Wetlands Overlay zoning district that is based on wetland delineations consistent with US Army Corps of Engineers criteria.*
>
> ***Program C-1.1B: Tiscornia Marsh Restoration.*** *Support restoration plans for Tiscornia Marsh adjacent to Pickleweed Park in the Canal neighborhood. The project will raise and improve a degraded levee to stabilize and potentially restore an eroding tidal marsh, reducing the community's vulnerability to rising tides and flooding.*
>
> ***Program C-1.1C: McInnis Marsh Restoration.*** *Support restoration plans for McInnis Marsh, providing improved habitat for protected species, flood protection for McInnis Park golf course, and improved trail connections along the San Pablo Bay Shoreline.*

Policy C-1.2: Wetlands and Sea Level Rise

Optimize the role of wetlands in buffering the San Rafael shoreline against the future impacts of sea level rise.

See also Program S-3.6A for a discussion of the sea level rise benefits of horizontal levees

Policy C-1.3: Wetland Protection and Mitigation

In order to protect and preserve valued wetlands, loss of wetlands due to filling shall be avoided, unless it is not possible or practical. Compensatory mitigation for the loss of wetlands shall be required in the event that preservation is not possible or practical due to conditions such as the location, configuration, and size of the wetland.

> ***Program C-1.3A: Compensatory Mitigation Requirements.*** *For permanently impacted wetlands, lost wetland area shall be replaced on-site and in-kind at a minimum ratio of 2:1 (e.g., 2 acres for each acre lost). If on-site mitigation is not possible or practical, off-site mitigation shall be required, preferably in the same drainage basin or a nearby Marin watershed if the same basin is not available, at a minimum replacement ratio of 3:1. Temporarily impacted wetlands may be restored and revegetated to pre-project conditions.*
>
> ***Program C-1.3B: Conditions for Mitigation Waivers****. The City may waive the compensatory mitigation requirement on a case by case basis for wetlands restoration projects and for fill of wetlands that are less than 0.1 acres in size, provided that all of the following conditions are met: (1) the wetland is isolated (e.g., it is not within, part of, or directly connected or hydrologically linked by natural flow to a creek, drainageway, wetland, or submerged tidelands); (2) it is*

demonstrated by an independent wetland expert that preservation would not result in a functioning, biological resource; (3) the City has determined that filling would result in a more appropriate and desirable site plan for the project; and (4) the City verifies that applicants have received all required permits and complied with all other mitigation requirements from resource agencies with wetland oversight.[3]

Program C-1.3C: Revision of Mitigation and Waiver Requirements. *Consider revisions to mitigation requirements and waiver conditions that reflect best practices, sea level rise adaptation needs, and consistency with the requirements used by state and federal agencies and other Bay Area jurisdictions.*

Policy C-1.4: Wetland Creation

Require that any wetlands created to mitigate losses as described in Policy C-1.3 are similar in habitat type and at least equal in functional quality to the wetlands being filled.

Program C-1.4A: Wetland Plans and Monitoring. *Wetland plans shall be prepared by a qualified wetland restoration ecologist in consultation with appropriate federal and state resource agencies. Such plans shall require annual monitoring for a specified period of time to determine mitigation success. Contingency measures to deal with the potential for lack of success should be included in the plan.*

Program C-1.4B: Timing of Wetlands Creation. *Restoration or creation of wetlands should be completed prior to construction of the development. Where construction activities would adversely impact wetland restoration or creation, the restoration or creation may be completed after construction of the development, as determined through development review.*

Program C-1.4C: Mitigation Banking. *Support the creation of wetland mitigation banking sites within the City. This would allow the collection of mitigation fees from multiple projects to be combined to construct or restore larger, more viable wetlands in designated locations rather than constructing small compensatory wetlands on or near each development site. This could include an inventory of priority restoration areas for future projects that may require compensatory off-site mitigation.*

Policy C-1.5: Wetland Setbacks

Maintain a minimum 50-foot development-free setback from wetlands, including, but not limited to, paving or structures. Setbacks of greater than 50 feet may be required on lots of two or more acres as determined through development review. The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the wetland to the maximum extent feasible and will not cause cumulative impacts on functioning wetlands.

See Goal S-3 (and associated policies and programs) in the Safety Element regarding sea level rise

Policy C-1.6: Creek Protection

Protect and conserve creeks as an important part of San Rafael's identity, natural environment, and green infrastructure. Except for specific access points approved per Policy C-1.7 (Public Access to Creeks), development-free setbacks shall be required along designated creeks, drainageways, and watercourses (as shown on Exhibit C-2) to help maintain their function and habitat value. Appropriate erosion control and habitat restoration measures are encouraged within the setbacks, and roadway crossings are permitted.

[3] *US Army Corps of Engineers and the Regional Water Quality Control Board.*

Program C-1.6A: Creek and Drainageway Setbacks: *Maintain the following setback requirements in the Municipal Code:*

(a) A minimum 25-foot development-free setback shall be maintained from the top of creek banks for all new development (including but not limited to paving and structures), except for Miller Creek and its tributaries, where a minimum 50-foot setback shall be maintained. Setbacks up to 100 feet may be required in development projects where development review determines that a wider setback is needed to maintain habitat values, and in areas where high-quality riparian habitat exists. The City may waive the setback requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the creek to the maximum extent feasible and the results are acceptable to appropriate regulatory agencies.

(b) Drainageway Setbacks: Drainageway setbacks shall be established through individual development review, taking into account existing habitat function and values.

EDITOR'S NOTE: Exhibit 37 in the 2020 General Plan has been amended to show Drainageways as well as Creeks, per the data available through MarinMaps (this was done in GP 2000 but not in GP 2020).

Program C-1.6B: Municipal Code Compliance. *Ensure that the San Rafael Municipal Code is consistent with local, state, and federal regulatory agency requirements for erosion control and natural resource management and is amended as needed when these regulations change. Local public works activities shall comply with the Municipal Code.*

Program C-1.6C: Creek and Drainageway Mapping. *Work collaboratively with local environmental organizations and institutions to prepare updated maps of creeks and drainageways and to evaluate the potential for restoration.*

[insert text box on creeks and drainageways similar to GP 2020]

Policy C-1.7: Public Access to Creeks

Provide pedestrian access to creeks and along creeks where such access will not adversely affect habitat values.

Program C-1.7A: Creek Access on Public Land. *Proactively identify and create access points to creeks on public lands.*

Program C-1.7B: Public Access in Development Along Creeks. *Use the development review process to identify and secure areas appropriate for creek access.*

Policy C-1.8: Creek Education and Awareness

Increase awareness of San Rafael's creeks and their role as green infrastructure supporting local climate resilience and flood protection initiatives.

Program C-1.8A: Publicity. *Use the City's website to publicize information about creek and waterway protection and access. Where appropriate, partner with local schools, conservation and environmental groups, business organizations, and others to increase awareness of the City's creeks and waterways.*

Program C-1.8B: Creek Signage. *Develop attractive signage and/or educational displays identifying local creeks, describing native habitat and history, and reminding visitors of what they can do to protect water quality.*

See also Policy PROS-3.10 on environmental education and Program C-3.6A on removal of plastics from creeks, marshes, and the Bay

Policy C-1.9: Enhancement of Creeks and Drainageways

Conserve or improve the habitat value and hydrologic function of creeks and drainageways so they may serve as wildlife corridors and green infrastructure to improve stormwater management, reduce flooding, and sequester carbon. Require creek enhancement and associated riparian habitat restoration/ creation for projects adjacent to creeks to reduce erosion, maintain storm flows, improve water quality, and improve habitat value where feasible.

> ***Program C-1.9A: Watercourse Protection Regulations.*** *Maintain watercourse protection regulations in the San Rafael Municipal Code. These regulations should be periodically revisited to ensure that they adequately protect creeks and drainageways. Consider specific measures or guidelines to mitigate the destruction or damage of riparian habitat from roads, development, and other encroachments.*
>
> ***Program C-1.9B: Creek Restoration.*** *Encourage and support efforts by neighborhood associations, environmental organizations, and other interested groups to fund creek enhancement, restoration, and daylighting projects, as well as creek clean-ups and ongoing maintenance programs.*
>
> ***Program C-1.9C: Upper Gallinas Watershed Restoration.*** *Support implementation of creek restoration projects in the Upper Gallinas Creek Watershed, consistent with the Restoration Opportunities Report prepared in December 2016. It remains a priority of the City to restore the creek by removing the concrete channel, creating a walkway/ bikeway alongside, and planting native trees to provide shade and filter runoff. Pursue grants and other funds, including capital improvement projects and general operating funds, to restore natural creek conditions and native vegetation.*
>
> ***Program C-1.9D: Restoration of San Rafael, Mahon, and Irwin Creeks.*** *Pursue opportunities for creek restoration and beautification along San Rafael, Mahon, and Irwin Creeks, building on past efforts supporting biological and ecological restoration, education, and water quality improvements along these waterways.*

See Goal C-3 for additional policies on water quality

Add text box on City's plastic bag and polystyrene foam bans and "ask first" campaign on plastic utensils

Policy C-1.10: Hillside Preservation

Encourage preservation of hillsides, ridgelines, and other open areas that serve as habitat and erosion protection as well as visual backdrops to urban areas.

See the Safety Element for policies addressing protection of steep slopes and wildfire prevention and protection actions on hillsides. See the Community Design Element for policies on hillside and ridgeline protection.

> ***Program C-1.10A: Hillside Management and Design Guidelines.*** *Continue to implement Hillside Design Guidelines as well as management practices that promote ecological health, hazard reduction, and climate change mitigation*.

Policy C-1.11: Wildlife Corridors

Preserve and protect areas that function as wildlife corridors, particularly those areas that provide connections permitting wildlife movement between larger natural areas.

Program C-1.11A: Mapping of Wildlife Corridors. *Support mapping of wildlife corridors in the Planning Area. Use this data to determine where conservation easements may be appropriate in the event properties within these corridors are subdivided, or when other opportunities arise for securing such easements.*

Policy C-1.12: Native or Sensitive Habitats

Protect habitats that are sensitive, rare, declining, unique, or represent a valuable biological resource. Potential impacts to such habitats should be minimized through compliance with applicable laws and regulations, including biological resource surveys, reduction of noise and light impacts, restricted use of toxic pesticides, pollution and trash control, and similar measures.

Program C-1.12A: Non-Native Predators. *Support efforts by non-profit conservation groups, state and federal agencies, the Marin Humane Society and other organizations to reduce conflicts between human settlement and native wildlife. This includes protecting the habitat of birds and small mammals from non-native predators and restricting the use of pesticides.*

Program C-1.12B: Oak Savanna and Oak Woodland Habitat Protection. *Require proposed developments with the potential to impact oak savanna/woodland habitat to either avoid, minimize, or compensate for the loss of such habitat. Avoidance is the preferred measure where feasible. If habitat loss is deemed unavoidable, require that direct and indirect impacts be mitigated through habitat restoration, creation, or enhancement. Mitigation requirements should be based on vegetative mass rather than the number of impacted trees.*

See also Policy C-3.6 on the conservation of nearshore waters, including the Canal and San Francisco Bay.

Policy C-1.13: Special Status Species

Conserve and protect special status plants and animals, including those listed by State or federal agencies as threatened and/or endangered, those considered to be candidate species for listing by state and federal agencies, and other species that have been assigned special status by the California Native Plant Society and the California Fish and Game Code.

Program C-1.13A: List of Species. *Maintain current California Natural Diversity Database digital (GIS) maps and data tables listing threatened, endangered, and special status species in the San Rafael Planning Area.*

Program C-1.13B: Surveys. *Require that sites be surveyed for the presence or absence of special status species prior to development approval. Such surveys must occur prior to development-related vegetation removal.*

Program C-1.13C: Mitigating Impacts on Special Status Species. *Require that potential unavoidable impacts to special status species are minimized through design, construction, and project operations. If such measures cannot adequately mitigate impacts, require measures such as on-site set asides, off-site acquisitions (conservation easements, deed restrictions, etc.), and specific restoration efforts that benefit the listed species being impacted.*

Program C-1.13D: Steelhead Habitat. *Support efforts to restore, preserve or enhance Central California Coast Steelhead habitat in Miller Creek and other creeks.*

Policy C-1.14: Control of Invasive Plants

Remove and control undesirable non-native plant species from City-owned open space and road rights-of-way and encourage the removal and control of these species from non-City owned ecologically sensitive or fire-prone areas.

Program C-1.14A: Identification of Desirable and Undesirable Species. *Use California Invasive Plant Council (Cal-IPC) guidance for desirable and invasive plants in the development review, design review, and public lands management processes. This guidance should ensure that noxious plants are not planted in new development, on rights of way, and on public land; help inform revegetation and replanting programs; and support the management of existing vegetation.*

Program C-1.14B: Integrated Pest Management Policy. *Maintain and periodically update an Integrated Pest Management Policy (IPMP) that minimizes the application of pesticides in the city and encourages non-toxic methods to control vegetation such as properly timed goat grazing. The IPMP should be modified as needed to reflect changes in regional stormwater control requirements, data on pesticide toxicity, and the feasibility of new and less toxic methods for controlling invasive plants. Changes to the IPMP should be made through a transparent public process and should ensure that the use of any chemicals of concern is publicly noticed.*

Program C-1.14C: Removal of Invasive Species. *Support partnerships and multi-jurisdictional efforts to remove invasive plant species, reduce fire hazards, and improve habitat on public properties. Use volunteers and non-profit organizations to assist in such efforts and consult with the California Native Plant Society and similar organizations to optimize results, avoid the removal of desirable plants, and replant with appropriate plants before invasive species return. Funding from sources such as Measure A, state and regional wildfire prevention funds, utility funds, and other conservation program funds should be pursued to support these efforts.*

[insert text box on Marin Wildfire Prevention Authority public education program on ecologically sound vegetation management—per Bill Carney comments]

Program C-1.14D: Wildfire Action Plan Implementation. *Implement the provisions of San Rafael's Wildfire Action Plan (2020) relating to the control of invasive plants, including further limiting the sale or planting of highly flammable non-native plants in the city, supporting volunteer activities to remove Scotch and French broom, revising standards for Eucalyptus, providing fuel breaks on public property, and educating the public on fire-safe landscaping.*

Policy C-1.15: Landscaping with Appropriate Naturalized Plant Species

Encourage landscaping with native and compatible non-native plant species that are appropriate for the dry summer climate of the Bay Area, with an emphasis on species determined to be drought-resistant. Diversity of plant species is a priority for habitat resilience.

Program C-1.15A: Education on Desirable Plant Species. *Leverage the educational and website materials on "water-wise" plants developed by the Marin Municipal Water District and fire-prone plants from FireSafe Marin as resources for San Rafael property owners. The City should also create Resilient Landscape Templates (RLTs) that offer suggestions for homeowners to achieve beautiful, fire-resistant, drought tolerant landscaping.*

Policy C-1.16: Urban Forestry

Protect, maintain, and expand San Rafael's tree canopy. Trees create shade, reduce energy costs, absorb runoff, support wildlife, create natural beauty, and absorb carbon, making them an essential and valued part of the city's landscape and strategy to address global climate change. Tree planting and preservation should be coordinated with programs to reduce fire hazards and ensure public safety, resulting in a community that is both green and fire-safe.

Program C-1.16A: Increasing the Tree Canopy. *Implement measures to increase the tree canopy, as outlined in the City's Climate Change Action Plan. These measures include:*

a) tree planting on city-owned land
b) reviewing parking lot landscaping standards to maximize tree cover
c) minimizing tree removal

d) controlling invasive species that threaten the health of the urban forest
e) integrating trees and natural features into the design of development projects
f) encouraging trees on private property
g) increasing the diversity of trees to increase habitat value and resilience.

Program C-1.16B: Tree City USA. *Maintain San Rafael's status as a "Tree City USA" community by following best practices in urban forestry management and regularly applying for recertification.*

Program C-1.16C: Tree Preservation. *Consider ordinances and standards that limit the removal of trees of a certain size and require replacement when trees must be removed.*

See Program CDP-3.5A for additional guidance on street trees, including a proposed Street Tree Master Plan

Policy C-1.17: Tree Management

Encourage the preservation of healthy, mature trees when development and/or construction is proposed. Site plans should indicate the location of existing trees and include measures to protect them where feasible.

Policy C-1.18: Mineral Resource Management

Work with the County of Marin to permit the continued use of property in the San Rafael sphere of influence for mineral resource extraction, subject to permitting procedures and mitigation requirements that reduce potential adverse impacts on the natural environment and surrounding uses.

See also Neighborhoods Element regarding the San Rafael Rock Quarry

Policy C-1.19: Light Pollution

Reduce light pollution and other adverse effects associated with night lighting from streets and urban uses.

Program C-1.19A: Dark Sky Ordinance. *Adopt a dark sky ordinance, including lighting standards and enforcement provisions that reduce light pollution. In the interim, refer to guidelines from the International Dark Sky Association during the review of major projects involving night lighting.*

See also Goal CDP-1 for additional policies on protecting natural features, hillsides, ridgelines, and bayfront areas, and the visual quality of San Rafael's environment and landscapes.

Goal C-2: Clean Air

Reduce air pollution to improve environmental quality and protect public health. *San Rafael will work collaboratively with jurisdictions throughout the Bay Area to achieve and maintain state and federal clean air standards. While air quality is a regional issue, the City will do its part to reduce air pollution at the local level and create a healthful environment for all San Rafael residents.*

Policy C-2.1: State and Federal Air Quality Standards

Continue to comply with state and federal air quality standards.

Program C-2.1A: Cooperation with Other Agencies. *Work with the Bay Area Air Quality Management District (BAAQMD) and other agencies to ensure compliance with air quality regulations and proactively address air quality issues.*

Policy C-2.2: Land Use Compatibility and Building Standards

Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.

Program C-2.2A: Protection of Sensitive Receptors. *Use the development review process to require adequate buffering when a sensitive receptor (a use with occupants sensitive to the effects of air pollutants, such as children and the elderly) is proposed near an existing source of toxic contaminants or odors. For proposed sensitive receptors within 500 feet of Highway 101 or Interstate 580, an analysis of mobile source toxic air contaminant health risks should be performed. The analysis should evaluate the adequacy of the setback from the highway and, if necessary, identify design mitigation measures and building standards to reduce health risks to acceptable levels. Mitigation standards and requirements should be periodically updated as air quality conditions and pollution control technology change.*

Program C-2.2B: New Sources of Air Pollution. *Use the development review process to ensure that potential new local sources of air pollution or odors provide adequate buffering and other measures necessary to comply with health standards.*

See also Goal EDI-2 for additional policies and programs on reducing exposure to air pollution within lower income and vulnerable populations. See the Noise Element for additional policies on reducing exposure to transportation noise sources.

Policy C-2.3: Improving Air Quality Through Land Use and Transportation Choices

Recognize the air quality benefits of reducing dependency on gasoline-powered vehicles. Implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, and support the shift to electric and cleaner-fuel vehicles.

Program C-2.3A: Air Pollution Reduction Measures. *Implement air pollution reduction measures as recommended by BAAQMD's Clean Air Plan and supporting documents to address local sources of air pollution in community planning. This should include Transportation Control Measures (TCM) and Transportation Demand Management (TDM) programs to reduce emissions associated with diesel and gasoline-powered vehicles.*

See the Mobility Element for additional policies and programs to reduce GHG emissions from motor vehicles and diesel emissions from transit.

Policy C-2.4: Particulate Matter Pollution Reduction

Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.

Program C-2.4A: Particulate Matter Exposure*. Through development review, require that Best Available Control Technology (BACT) measures (such as setbacks, landscaping, paving, soil and dust management, and parking lot street sweeping) are used to protect sensitive receptors from particulate matter. This should include control of construction-related dust and truck emissions as well as long-term impacts associated with project operations. Where appropriate, health risk assessments may be required to evaluate risks and determine appropriate mitigation measures.*

Program C-2.4B: Wildfire Smoke. *Support efforts to reduce health hazards from wildfire smoke, such as limits on outdoor activities, access to respirators and air filtration systems, access to clean air refuge centers, and public education.*

Program C-2.4C: Wood-Burning Stoves and Fireplaces. *Regulate wood-burning stoves and fireplaces to reduce particulate pollution.*

See also Policy C-1.16 regarding the role of trees and vegetation in enhancing air quality and promoting health.

Policy C-2.5: Indoor Air Pollutants

Reduce exposure to indoor air pollutants such as mold, lead, and asbestos through the application of state building standards, code enforcement activities, education, and remediation measures.

Policy C-2.6: Education and Outreach

Support public education regarding air pollution prevention and mitigation.

> ***Program C-2.6A: Air Quality Education Programs****. Actively participate in the air quality education programs of the BAAQMD. Use social media and other means of outreach to alert residents of Spare the Air days and associated recommendations.*
>
> ***Program C-2.6B: Equipment and Generators.*** *Encourage the use of non-gasoline powered leaf blowers and other yard maintenance equipment, as well as clean-powered generators.*

See also Policy LU-1.3 on transit-oriented development

Goal C-3: Clean Water

Improve water quality by reducing pollution from urban runoff and other sources, restoring creeks and natural hydrologic features, and conserving water resources. *Water is vital to sustain life. San Rafael will preserve the quality of its surface and groundwater resources by managing urban runoff, implementing pollution controls, supporting public education and awareness, and working with partner agencies to meet state and federal water quality standards. The City will also actively work to reduce overall water demand, particularly as the region is challenged by drought and the impacts of climate change.*

Text box on the "One Water" approach and the North Bay Watershed Association (MCL)

Policy C-3.1: Water Quality Standards

Continue to comply with local, state and federal water quality standards.

> ***Program C-3.2A: Interagency Coordination****. Coordinate with the local, state, and federal agencies responsible for permitting discharges to San Rafael's creeks and surface waters, monitoring water quality, and enforcing adopted water quality standards and laws.*
>
> *See also Policy CSI-4.9 on wastewater treatment*

Policy C-3.2: Reduce Pollution from Urban Runoff

Require Best Management Practices (BMPs) to reduce pollutants discharged to storm drains and waterways. Typical BMPs include reducing impervious surface coverage, requiring site plans that minimize grading and disturbance of creeks and natural drainage patterns, and using vegetation and bioswales to absorb and filter runoff.

> ***Program C-3.2A: Countywide Stormwater Program.*** *Continue to participate in the countywide stormwater pollution prevention program and comply with its performance standards.*
>
> ***Program C-3.2B: Reducing Pollutants in Runoff.*** *Continue to reduce the discharge of harmful materials to the storm drainage system through inspections, enforcement programs, reduced use of toxic materials, and public education.*

Program C-3.2C: Construction Impacts. *Continue to incorporate measures for stormwater runoff control, management, and inspections in construction projects and require contractors to comply with accepted pollution prevention planning practices. Provisions for post-construction stormwater management also should be included.*

Program C-3.2D: System Improvements. *Improve storm drainage performance through regular maintenance and clean-out of catch basins, a City street sweeping program, and prioritizing Trash Reduction Implementation Plan measures, including installation of trash capture devices, . When existing drainage lines are replaced, design changes should be made as needed to increase capacity to handle intensifying storms and expected sea level rise impacts.*

Program C-3.2E: Pesticide and Fertilizer Management*. On City property, reduce or eliminate the use of toxic pesticides and fertilizers. Ensure that the application of pesticides follows all applicable rules and regulations and is performed through a transparent process in which the public receives early notification.*

See also Program C-1.14B on Integrated Pest Management.

Program C-3.2F: Monitoring. *Support ongoing water quality testing in San Rafael's creeks and waterways to evaluate the effectiveness of existing programs and determine where additional pollution control measures may be needed.*

Policy C-3.3: Low Impact Development

Encourage construction and design methods that retain stormwater on-site and reduce runoff to storm drains and creeks.

Program C-3.3A: Development Review. *Provide guidance to developers, contractors and builders on the use of rain gardens, bioswales and bioretention facilities, permeable pavers, grass parking lots, and other measures to absorb stormwater and reduce runoff rates and volumes.*

Program C-3.3B: Non-Traditional Gardens. *Evaluate best practices in the use of roof gardens, vertical gardens/ green walls, pollinator gardens and other measures that increase the City's capacity to sequester carbon, plant trees, and enhance environmental quality. Encourage the incorporation of such features in new development.*

See also Safety Element Program S-1.9C on erosion control

Policy C-3.4: Green Streets

Design streets and infrastructure so they are more compatible with the natural environment, mitigate urban heat island effects, and have fewer negative impacts on air and water quality, flooding, climate, and natural habitat.

Program C-3.4A: Green Streets Planning. *Develop a Green Streets Plan that includes policy guidance, tools, analytics, and funding mechanisms to create more sustainably designed street and storm drainage systems. Street and drainage system improvements should support City conservation and climate change goals.*

Program C-3.4B: Funding. *Identify and apply for grants and federal, state, and regional funds to upgrade stormwater facilities, rehabilitate roads, and implement other Green Streets initiatives.*

See the Infrastructure Element for additional policies and programs on green infrastructure

Policy C-3.5: Groundwater Protection

Protect San Rafael's groundwater from the adverse effects of urban uses and impacts from sea level rise. Encourage opportunities for groundwater recharge to reduce subsidence and water loss, and support water-dependent ecosystems.

Program C-3.5A: Underground Tank Remediation
Continue efforts to remediate underground storage tanks and related groundwater hazards. Avoid siting new tanks in areas where they may pose hazards, including areas prone to sea level rise.

Policy C-3.6: Nearshore Waters

Ensure the protection of Canal and Bay water quality from the potential adverse effects of boats, live-aboards, harbors, and other marine facilities and activities.

Program C-3.6A: Water Quality Improvements. *Collaborate with the Bay Conservation and Development Commission, State and Regional Water Quality Control Boards, and other agencies to support water quality improvement efforts and the removal of plastics and other trash from the Canal and Bay. Seek funding from organizations such as the San Francisco Bay Restoration Authority for projects that reduce urban runoff.*

Program C-3.6B Boat Sanitation and Enforcement. *Require consistent enforcement and inspection of sanitation facilities in boats berthed in the San Rafael Canal and elsewhere in Bay waters within the City limits.*

Program C-3.6C: Sewage Pump Out Facilities*. Support marina owners in providing on-site sewage pump-out facilities. Require marinas to install such facilities when improvements are made.*

Program C-3.6D: Education of Boaters*. Educate boaters about good sanitation practices and measures to reduce invasive species with the potential to harm marine and freshwater life.*

Policy C-3.7: Education and Outreach

Promote greater public awareness of the causes and effects of water pollution and how to reduce it.

Program C-3.7A: Stenciling of Storm Drains*. Continue to stencil storm drains and use other forms of signage and art so that people understand the consequences of pollutant runoff and its impacts on the Bay.*

Program C-3.7B Outreach. *Support and participate in efforts by the Marin County Stormwater Pollution Prevention Program to raise awareness of the effects of water pollution and ways the public can help improve water quality.*

Program C-3.7C Car Wash Facilities*. Require the use of recycled water at new commercial car washing facilities.*

Policy C-3.8: Water Conservation

Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.

Program C-3.8A: Water Conservation Programs. *Work with Marin Municipal Water District and other organizations to promote water conservation programs and incentives and ensure compliance with state and MMWD regulations, including the provisions of the Urban Water Management Plan (see Policy CSI-4.8 for additional guidance).*

Program C-3.8B: Public Education. *Continue and expand programs to educate residents and businesses about the benefits of water conservation and requirements for plumbing fixtures and landscaping.*

Program C-3.8C: Reclaimed Water Use. *Support the extension of recycled water distribution infrastructure by Las Gallinas Valley Sanitary and MMWD, along with programs to make the use of recycled water more feasible (see Policy CSI-4.12 for additional guidance).*

Program C-3.8D: Graywater and Rainwater. *Encourage the installation of graywater and rainwater collection systems. Explore revisions to building codes that would facilitate such projects where obstacles currently exist.*

Program C-3.8E: Reducing Municipal Water Use. *Reduce water use for municipal operations through water-efficient landscaping, maintenance of irrigation equipment, replacement of inefficient plumbing fixtures, and using recycled water where available and practical.*

Policy C-3.9: Water-Efficient Landscaping

Encourage the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with fire-prevention and climate resilience goals.

Program C-3.9A: Demonstration Gardens. *Maintain the Falkirk demonstration gardens illustrating xeriscaping principles and drought-tolerant plant materials.*

Goal 4: Sustainable Energy Management

Use energy in a way that protects the environment, addresses climate change, and conserves natural resources. *San Rafael will use energy resources sustainably by shifting to renewable energy sources and reducing demand. Energy will also be conserved through the ways we live, work, build, and travel.*

Policy C-4.1: Renewable Energy

Support increased use of renewable energy and remove obstacles to its use.

Program C-4.1A: Marin Clean Energy Targets. *Support Marin Clean Energy (MCE) efforts to reach the goal of providing energy that is 100 percent GHG free by 2025.*

Program C-4.1B: PACE Financing. *Participate in a Property Assessed Clean Energy (PACE) financing program to fund installation of renewable energy systems, energy efficiency upgrades to existing buildings, and other improvements such as electric vehicle chargers and battery storage. Consider other funding sources to improve local energy generation and storage.*

Program C-4.1C: Regulatory Barriers. *Continue efforts to remove regulatory barriers and provide creative incentives for solar energy installations, such as rooftop solar systems and parking lot canopies. The installation of renewable energy systems that are consistent with the Climate Change Action Plan should be encouraged and accelerated.*

Program C-4.1D: Reducing Natural Gas Use. *Promote electrification of building systems and appliances in new buildings and those that currently use natural gas.*

Program C-4.1E: Municipal Buildings. *Wherever feasible, incorporate renewable energy technology such as solar, cogeneration, and fuel cells, in the construction or retrofitting of City facilities. Continue use of MCE Deep Green (100% renewable) power.*

Policy C-4.2: Energy Conservation

Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.

Program C-4.2A: Energy Efficiency Outreach. *Continue to inform businesses and residents of programs and rebates to conserve energy and weatherize their homes.*

Program C-4.2B: Green Building Standards. *Implement State green building and energy efficiency standards for remodeling projects and new construction. Consider additional measures to incentivize green building practices, low carbon concrete, and sustainable design.*

Program C-4.2C: Energy Efficiency Incentives. *Provide financial incentives, technical assistance, streamlined permitting processes, and partnerships to encourage energy-efficiency upgrades in new and existing buildings. Typical improvements include the use of energy-efficient windows, lighting, and appliances, induction and convection cooking, insulation of roofs and exterior walls, higher-efficiency heating and air conditioning (including electrical heat pump systems), and other projects that lower electricity and natural gas consumption.*

Program C-4.2D: Time-of-Sale Energy Audits. *Consider requiring energy audits for residential and commercial buildings prior to property sales, including identification of cost savings from energy efficiency measures and potential rebates and financing options. An energy audit is a property inspection that identifies opportunities to improve energy efficiency.*

Program C-4.2E: Cool Roofs and Pavement. *Encourage the use of materials that minimize heat gain on outdoor surfaces such as parking lots, roadways, roofs and sidewalks.*

Policy C-4.3: Managing Energy Demand

Reduce peak demands on the electric power grid through development of local sources, use of battery storage, deployment of "smart" energy and grid systems that use technology to manage energy more efficiently, and public education.

Program C-4.3A: Innovative Technologies*. Apply innovative technologies such as micro-grids, battery storage, and demand response programs that improve the electric grid's resilience and meet demand during high use periods. Encourage emergency battery back-up for power outages in lieu of generators.*

See also Policy CSI-4.13 on energy infrastructure

Policy C-4.4: Sustainable Building Materials

Encourage the use of building materials that reduce environmental impacts and the consumption of non-renewable resources.

Program C-4.4A: Use of Alternative Building Materials. *Evaluate opportunities to amend the City's building codes and zoning ordinances to allow the use of acceptable resource-efficient alternative building materials and methods.*

Policy C-4.5: Resource Efficiency in Site Development

Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.

Program C-4.5A: Solar Site Planning. *Use the development review process to:*

a) Encourage opportunities for passive solar building design and the use of photo-voltaic materials and devices.

b) *Review proposed site design for energy efficiency, such as shading of parking lots and summertime shading of south-facing windows.*

Program C-4.5B: Solar Access Ordinance. *Consider developing a solar access ordinance to protect solar access rights and prevent restrictions on solar energy systems. The ordinance should address potential impacts related to development or modification of existing structures on neighboring properties.*

Goal C-5: Reduced Greenhouse Gas Emissions

Achieve a 40 percent reduction in 1990 greenhouse gas emission levels by 2030 and a 60 percent reduction by 2040. *The City of San Rafael will implement the measures outlined in this General Plan and in its Climate Change Action Plan to reduce greenhouse gas (GHG) emissions, which are the leading cause of global climate change. The City will also work to achieve the longer-term State goal of achieving an 80 percent reduction in 1990 GHGs by 2050, pursuing more aggressive measures as they become technologically and financially viable.*

Policy C-5.1: Climate Change Action Plan

Maintain and periodically update a Climate Change Action Plan that includes programs to reduce greenhouse gas emissions and metrics for monitoring success.

Program C-5.1A: Progress Reports. *Prepare annual Climate Change Action Plan progress reports, including a list of priority actions. Local climate goals should align with regional goals, including those set through Drawdown Marin.*

Program C-5.1B: Quarterly Forum. *Continue to hold the Climate Change Action Plan (CCAP) Quarterly Forum, which provides oversight on the implementation progress of sustainability and GHG reduction programs.*

Program C-5.1C: Funding*. Identify funding sources for recommended actions, and pursue local, regional, state, and federal grants. Investigate creation of a local carbon fund or other permanent source of revenue.*

Policy C-5.2: Consider Climate Change Impacts

Ensure that decisions regarding future development, capital projects, and resource management are consistent with San Rafael's Climate Change Action Plan and other climate goals, including greenhouse gas reduction and adaptation.

Policy C-5.3: Advocacy

Support and advocate for state and federal legislation and initiatives to reduce GHG emissions.

Program C-5.3A: Local Government Agency Involvement. *Continue to provide a leadership role with other local governmental agencies to share best practices and successes.*

Program C-5.3B: State and Federal Action. *Recommend and support State and federal actions to update renewable energy portfolio standards, amend state building codes, and modify motor vehicle standards to reduce GHG emissions and achieve climate goals.*

Program C-5.3C: Regional Collaboration. *Participate in regional collaborations among public agencies to enact and support new programs or shared improvements which promote or utilize renewable energy sources or reduce energy demand.*

Policy C-5.4: Municipal Programs

Implement and publicize municipal programs to demonstrate the City's commitment to sustainability efforts and reducing greenhouse gases.

> ***Program C-5.4A: Low Carbon Municipal Vehicles.*** *As finances allow, continue to shift the City's vehicle fleet to zero emission vehicles and use low carbon fuels as an interim measure until gasoline-powered vehicles are replaced.*
>
> ***Program C-5.4B: Advancing GHG and Sustainability Efforts.*** *Monitor best practices in sustainability and the transition to GHG-free energy sources and evaluate the feasibility of applying such measures at the local level.*

Policy C-5.5: Carbon Sequestration

Enhance the ability of the City's natural and built environment to sequester (absorb and store) carbon emissions.

See Policy C-1.16 on urban forestry and Policies C-4.2 and C-4.4 (green building) for programs

Policy C-5.6: Unintended Consequences

Ensure that climate action measures minimize the potential for unintended consequences, particularly impacts that disproportionately impact lower income communities or drive up the cost of doing business in San Rafael. The City should ensure that the social and financial cost of its regulations are in balance with the benefits, and also consider the ultimate costs of failing to act.

The City is committed to balancing climate-related goals with the goal of being an equitable, just city that strives for a more prosperous future for all residents. It is committed to measures that do not deter innovation or place a disproportionate burden on small local businesses. Finally, it is committed to solutions which maximize GHG reduction benefits relative to cost, and decision-making informed by a careful analysis of financial feasibility.

See the EDI Element for additional policy guidance on achieving equitable outcomes as policies and programs are implemented

Policy C-5.7: Climate Change Education

Continue community education and engagement in climate and sustainability efforts.

> ***Program C-5.7A: Public Outreach Campaign****. As recommended by the Climate Change Action Plan, implement a communitywide public outreach and behavior change campaign to engage residents, businesses, and consumers around the impacts of climate change and the ways individuals and organizations can reduce their GHG emissions and create a more sustainable, resilient, and healthier community.*
>
> ***Program C-5.7B: Resilient Neighborhoods.*** *Continue participating in the Resilient Neighborhoods program and expand the program to include local businesses (see text box).*
>
> *TEXT BOX on Resilient Neighborhoods: The purpose of the Resilient Neighborhoods program is to motivate community members to live more sustainably and prepare for climate impacts. The program helps residents reduce greenhouse gas emissions in their homes, businesses, travel modes, and other activities.*
>
> ***Program C-5.7C: Financial Incentives.*** *Continue to raise awareness of savings, rebates and other financial incentives to conserve and recycle.*

Program C-5.7D: Promote Sustainability Efforts. *Promote sustainability and climate change awareness through education, publications, the City's website, community organizations, and special events such as Earth Day and an annual Green Festival.*

PARKS, RECREATION, AND OPEN SPACE ELEMENT

Goal PROS-1: Quality Parks for All to Enjoy

Sustain high quality parks that meet the recreational needs of all those who live and work in San Rafael. *San Rafael recognizes the essential nature of parks and recreation to its residents. Parks support health and wellness, protect the environment, add beauty to San Rafael neighborhoods, and are integral to life in the city. They should be maintained for all to enjoy.*

Policy PROS-1.1: Park Classification

Maintain a system of community, neighborhood, pocket, and special use parks (see text). These parks should be complemented by larger region-serving parks and open spaces, and by school recreation areas.

> ***Program PROS-1.1A: Parks and Recreation Master Plan.*** *Prepare a Parks and Recreation Master Plan, including citywide recommendations for park management, operations, facility development, potential acquisition, and recreation service delivery, as well as recommendations for each City-owned park.*
>
> ***Program PROS 1.1B: Capital Improvement Program.*** *Use the Capital Improvement Program to identify funding sources and timing of parks and recreation capital projects.*
>
> *See also Action PROS-3.3A on an Open Space Management Plan*

Policy PROS-1.2: Per Capita Acreage Standard

Maintain a citywide standard of 4.5 acres of improved park and recreation land per 1,000 residents.

> ***Program PROS-1.2A: Municipal Code Amendment.*** *Modify Chapter 15.09 of the Municipal Code to establish a general standard of 4.5 acres of improved parkland per 1,000. Adjust the formulas for dedication of land to reflect this standard.*
>
> ***Program PROS-1.2B: Park In Lieu Fees.*** *Periodically adjust park in-lieu fees to reflect the prevailing costs of land and facilities. Any increases to existing fees should be developed through a public process in which potential cost impacts on development feasibility are disclosed and measures to offset impacts are considered.*
>
> ***Program PROS-1.2C: Exemptions.*** *To reduce further increases in housing costs, exempt accessory dwelling units and affordable housing units from park in-lieu and dedication requirements. Consider eliminating the existing exemption for market-rate rental housing, or adopting a modified fee schedule which considers factors such as unit size and total project size.*

Policy PROS 1.3: Distribution of Parks

Strive for a balanced distribution of neighborhood and community parks across the city. When planning new parks, prioritize areas that lack existing parkland or outdoor space, and have higher needs due to higher housing densities and social and economic conditions.

> ***Program PROS-1.3A: New Parks.*** *Develop additional parks and playgrounds in areas with unmet needs and in areas experiencing growth. Opportunities to create new parks within new development and on underutilized public land should be pursued.*
>
> ***Program PROS-1.3B: Parks on Former School Sites.*** *Work with San Rafael City Schools and the Miller Creek School District to identify ways to acquire on-site recreational facilities in the event that school properties are closed, leased, or offered for sale. (see also Policy LU-1.16 on school site reuse)*

Program PROS-1.3C: Adaptation Projects. *Incorporate shoreline access and new recreational amenities in sea level rise adaptation and flood risk reduction projects where feasible.*

Policy PROS 1.4 Park Design

Design parks so that they are comfortable, attractive, inviting, and easily maintained. Park design should balance recreation, environmental, safety, and aesthetic considerations while avoiding conflicts with surrounding neighborhoods.

Program PROS 1.4A: Park Plan Review*. Work with qualified landscape architects, the Design Review Board, the Park and Recreation Commission, and the Planning Commission when preparing and reviewing park master plans and designing park improvements.*

Program PROS 1.4B: Community Engagement. *Engage the community in park planning and facility development, including all groups and individuals who would be affected by such improvements.*

Policy PROS-1.5: Park Image and Identity

Create a positive image of the City's park and open space system.

Program PROS-1.5A: Branding and Signage. *Develop and implement consistent branding, wayfinding, and interpretive signage for San Rafael's parks that identify park and open space properties and help the public locate, navigate, and understand them. Park signage should be attractive, durable, and contribute to civic pride and identity.*

Policy PROS-1.6: Park Improvements

Regularly upgrade and modernize San Rafael's parks to meet the recreational needs of the community and replace aging or deficient facilities.

Program PROS-1.6A: Needs Assessment. *Conduct a needs assessment as part of a Parks and Recreation Master Plan. Recreational facility needs should be periodically reevaluated in response to trends, demographics, and changing conditions.*

Program PROS-1.6B Park Improvements*. As part of the Parks and Recreation Master Plan, prepare plans to improve neighborhood and community park facilities. Seek funding to implement these plans.*

Policy PROS-1.7: Athletic Field Design

Encourage athletic field design which maximizes versatility, cost-efficiency, and the ability to use fields year-round.

Program PROS-1.7A: Field Improvements. *Evaluate local athletic fields as part of a Parks and Recreation Master Plan. Develop design and capital facility recommendations for athletic fields based on the findings.*

Policy PROS-1.8: Linear Parks and Trails

Encourage linear parks and trails along the Bay shoreline, the San Rafael Canal, local creeks, and transportation corridors such as the SMART right-of-way. Where feasible, spur trails should connect linear parks to nearby neighborhoods, parks, and open spaces.

See Action PROS-3.8A on a Trails Master Plan

Policy PROS-1.9: Role of Open Space

Recognize San Rafael's open space network as an essential component of the park system, including its potential to provide for hiking, picnicking, wildlife observation, environmental education, and enjoyment of nature. Passive recreational activities such as hiking, birdwatching, and picnicking, should be encouraged in these areas where consistent with habitat protection and hazard reduction goals.

See Action PROS-3.3A on an Open Space Management Plan and Action PROS-3.7 on coordinated open space planning.

Policy PROS-1.10: Historic Preservation and Parks

Incorporate historic and cultural resources into the City park system, including publicly-owned historic homes and the grounds around them. Where public operation of such properties is infeasible, encourage their management, operation, and programming by non-profit organizations.

Policy PROS-1.11: Urban Parks and Plazas

Encourage the creation of small gathering places open to the public in Downtown San Rafael and other business districts, including plazas, green spaces, activated alleys, and similar features.

Program PROS-1.11A: Design for All Users. *Engage park users, businesses, residents, and social service providers in the design and management of urban parks to safely accommodate all users, provide universal access, and minimize conflicts.*

Program PROS-1.11B: Activating Public Space. *Work with cafes, restaurants, and other businesses to activate and maintain urban parks and plazas. This can provide 'eyes on the space,' create a sense of ownership, and facilitate economic vitality by providing space for outdoor dining and vending.*

Policy PROS-1.12: Joint Use

Encourage formal agreements with the School Districts that allow for the joint development, maintenance and use of school facilities for recreational use when schools are not in session. Agreements should also address access to school parking lots for sporting events and other measures to minimize the impacts of joint use on nearby neighborhoods.

Program PROS-1.12A: Joint Use Agreements. *Work with San Rafael City Schools and the Miller Creek School District to formalize joint use agreements for parks, playgrounds, sports fields, and other school facilities.*

See also Program CSI-2.A on joint use agreements

Policy PROS-1.13: Recreational Facilities in Development Projects

Encourage, and where appropriate require, the construction of on-site recreational facilities in multi-family, mixed use, and office projects to supplement the facilities available in City parks.

Program PROS-1.13A: Onsite Recreation Facilities*. Continue to implement zoning regulations that require appropriate recreational facilities for residents in new development.*

Program PROS-1.13B: Rooftop Open Space. *Encourage the development of rooftop open space in higher density residential, mixed use, and commercial projects. Such spaces should be designed to minimize the potential for noise, privacy, and light impacts on nearby properties.*

Policy PROS-1.14: Commercial Recreation

Encourage private sector development of complementary recreational facilities to serve community needs, such as commercial recreation and athletic field facilities, swim clubs, tennis clubs, marinas, and gyms and health clubs.

> ***Program PROS-1.14A: Commercial Recreation****. Consider amending the zoning ordinance to allow a floor area ratio exemption for on-site recreational facilities open to the public.*

Policy PROS-1.15: Park Maintenance

Provide a high level of maintenance that allows San Rafael's parks and open spaces to fully meet recreational needs and serve as valued community assets.

> ***Program PROS-1.15A: Cost Considerations in New Projects.*** *Consider maintenance and long-term operating costs when developing any new facility or modernizing an existing facility. Funding mechanisms for maintenance should be identified for every capital project.*

> ***Program PROS-1.15B: Park Stewardship.*** *Encourage "adopt a park" programs and other stewardship initiatives that engage volunteers in park clean-up, maintenance, invasive plant removal, and other improvements. Explore agreements with the Downtown Streets Team and similar organizations to maintain park and open space areas.*

Policy PROS-1.16: Funding

Pursue diverse funding sources for park improvement and maintenance.

> ***Program PROS-1.16A: Park Funding Strategy.*** *Seek new and ongoing sources of funds for park development and maintenance, including grants, foundations, bonds, taxes and assessment districts, impact fees, contributions from "Friends" organizations, renewal of Measure A, private donations and land dedications, public/private joint ventures, the Capital Improvement Program, and all other available means.*

> ***Program PROS-1.16B: Naming Rights and Sponsorships.*** *Explore opportunities to generate revenue through naming rights, sponsorships, and charitable giving.*

> ***Program PROS-1.6C: Sale, Lease, or Contractual Agreements****. In the event City-owned park or open space land is sold or leased in the future, require that the proceeds are appropriately used to support park improvements, maintenance, or operating costs.*

Policy PROS-1.17: Public-Private Partnerships

Consider the use of public-private partnerships to rehabilitate, activate, and expand parks and community facility space. Where appropriate and consistent with the community's vision, this could include more intensive and varied uses of parkland, provided that the integrity of the open space is retained.

Policy PROS-1.18 Sustainable Park Operations

Encourage sustainable park management and operations that enhance the role of parks as green infrastructure and part of the City's climate resilience strategy. Parks should be managed to enhance their value as biological resources, natural habitat, and part of San Rafael's urban forest.

> ***Program PROS-1.18A: Sustainable Design.*** *Incorporate sustainability principles such as reduced water and energy, use of recycled and non-toxic materials, stormwater capture, and carbon sequestration, in the design and construction of park facilities and grounds. Where feasible, parks should also support the City's wildfire prevention and sea level rise adaptation strategies, and be designed to maximize accessibility by pedestrians, bicyclists, and transit users.*

See the Safety Element for policies on incorporating parks into the City's sea level rise adaptation plans. See the Conservation/ Climate Change Element for policies on landscaping and habitat restoration in parks and open spaces.

Goal PROS-2: Excellence in Recreation Programming

Provide accessible, affordable recreation programming that is responsive to public needs, activates parks for safe and inclusive community use, and promotes fitness, health, knowledge, and cultural understanding. *San Rafael provides quality programming for residents of all ages, building a sense of community and providing opportunities for sports, leisure, and personal growth.*

Policy PROS-2.1: Meeting Diverse Needs.

Ensure that recreational programs and facilities meet the needs of all San Rafael residents, but most particularly young children, youth, and older adults.

> ***Program PROS-2.1A: Age-Specific Programs.*** *Provide facilities and programs that are specifically designed to meet the needs of children, teens, and older adults, as well as those designed for intergenerational participants.*
>
> ***Program PROS-2.1B: Cultural Competency.*** *Provide culturally competent and inclusive programming that reflects the diversity of San Rafael's population.*

Policy PROS-2.2: Responding to Changing Community Needs.

Continually adapt recreational programs to meet changing community needs and interests.

> ***Program PROS-2.2A: Program Evaluations****. Monitor and evaluate participation in the City's recreational programs and use this information when developing new programs.*
>
> ***Program PROS-2.2B: Surveys.*** *Conduct periodic surveys in multiple languages to evaluate recreational needs in neighborhoods and the City as a whole (see also Program EDI-1.3B on multi-lingual, culturally competent surveys).*

Policy PROS-2.3: Coordinated Programming

Work with local public schools, the County of Marin, sports leagues and athletic associations, community service organizations, and other agencies to provide complementary and mutually supportive programming. Joint ventures with other service providers should be encouraged where appropriate.

> ***Program PROS-2.3A: Summer Programs.*** *Provide increased programming during periods when children are out of school, including summer youth programs at locations convenient to each neighborhood.*

Policy PROS-2.4: Social Services

Enhance, and where feasible expand, child care and social services for older adults through the City's parks, schools, and community centers.

> ***Program PROS-2.4A: Operating Hours.*** *Maintain operating hours that meet public needs and accommodate activities such as child care and after school care.*

Policy PROS-2.5: Recreation and Health

Provide programs and activities that contribute to physical and mental health, personal growth, and the leisure time needs of San Rafael residents.

Policy PROS-2.6: Local Partners

Engage local artists, athletes, craftspeople, health and fitness workers, creative professionals, and others in the delivery of recreational classes and programs.

> ***Program PROS-2.6A: User Fees.*** *Recover a portion of recreational program costs through user fees, facility rentals, and other direct charges for public use. Provisions to reduce fees for non-profit organizations and low income and special needs patrons should be included.*

Policy PROS-2.7: Community Events

Encourage special events, festivals, street fairs, and community programs that build civic unity and bring residents of different backgrounds together

See also Policies LU-3.11 and AC-1.7 and Program EV-2.5C on special events

Policy PROS-2.8: Community Gardens

Continue to support and maintain community gardens and look for ways to sustain such gardens such as providing recycled water, compost, tools, and storage sheds.

Policy PROS-2.9: Environmental Education

Pursue opportunities for environmental education in parks and open spaces, including classes and programs, interpretive trails and boardwalks, and plaques and markers that raise awareness of nature and climate change.

See also Conservation Element Policies 1.8, 2.6, 3.7, and 5.7 for additional guidance on environmental education

Policy PROS-2.10: Community Centers

Recognize the role of parks and community centers in supporting community resilience and emergency preparedness.

> ***Program PROS-2.10A: Back-Up Power.*** *Maintain back-up power sources at the City's community centers so they remain operational during power outages. Community centers should serve as community gathering places in the event of an emergency or disaster.*
>
> *See also Policies S-6.4 and CSI-4.13 on emergency preparedness and energy reliability*

Goal PROS-3: Protected, Well-Managed Open Space

Manage San Rafael's open spaces for all to enjoy. *Preservation of open space and the natural environment have been priorities for San Rafael residents for many years. Open space should be carefully managed to conserve and enhance its intrinsic value for recreation, habitat, hazard mitigation, climate change resilience, scenic beauty, and community character. Whenever possible, the natural terrain and vegetation of the community should be preserved, maintained, and enhanced.*

Policy PROS-3.1: Open Space Frame

Retain and protect San Rafael's open space frame, including open space on the city's perimeter and the network of open spaces that define and connect the City's neighborhoods. Open space should be recognized as essential to wildlife, environmental and human health, psychological well-being, and as a natural means of separating communities, preventing sprawl, and providing visual relief.

Program PROS-3.1A: Criteria for Open Space Protection. *Use the following criteria for identifying and prioritizing open space parcels for future protection (the criteria are not listed in any particular order):*

a) Environmental health and safety issues and potential geologic and seismic hazards.
b) Aesthetics (visual backdrop or edge, unique site features, shoreline, ridgelines).
c) Wildlife resource value (wetlands, creeks and riparian areas, wildlife habitat and movement corridors, and habitat for special status species).
d) Ability to sequester carbon and mitigate potential climate-related impacts, including reduction of wildfire hazard, drought resilience, protection from sea-level rise.
e) Importance to the community as a whole and/or adjoining neighborhoods.
f) Merits of alternative uses.
g) Ability to connect existing open spaces.
h) Potential for recreational uses and/or environmental education, especially for economically disadvantaged communities.
i) Availability of outside (non-City) financial assistance.
j) Potential maintenance and management costs and liability exposure for the City.
k) Feasibility of protection through zoning, easements, development agreements, and other tools rather than through acquisition.

Program PROS-3.1B: Open Space Opportunities in New Development. *Pursue opportunities to expand the City's open space network when new development is proposed. This can be achieved through such strategies as clustering development, providing buffers and fuel breaks along site perimeters, dedicating on-site parkland, and mitigating project impacts through wetlands restoration or other measures. When potential open space is not contiguous to existing public open space, the preference is to retain it in private ownership. Maintenance agreements for such areas should include a permanent funding mechanism for maintenance and rehabilitation, follow sound ecological principles, and be enforcable by the City in the future.*

Program PROS-3.1C: Priority Conservation Areas. *Explore the feasibility of Priority Conservation Areas (PCA) designations for large areas of contiguous private open space in the San Rafael Planning Area. The PCA designation recognizes the significance of these areas as open space and provides support for their long-term conservation. Owner consent shall be obtained before an application for a PCA is submitted to ABAG. [include text box on PCAs]*

Program PROS-3.1D: Aquatic Open Space. *Consider formal designation of a San Rafael Bay Aquatic Open Space in the waters off the city's shoreline. Compatible conservation and recreational uses such as fishing, kayaking, and paddle boarding should be encouraged in this area.*

Policy PROS-3.2: Balancing the Uses of Open Space

Protect and preserve the natural resource value of open space while permitting compatible recreational and educational uses. Open space areas should be maintained in a natural state and regarded as a resource for enjoyment by all residents of San Rafael. Recreational and educational uses, where permitted, should be limited to activities with minimal impacts on the environment and locations where such activities will not create hazards or have adverse effects on sensitive natural resources.

Program PROS-3.2A: Management Prescriptions. *Develop management prescriptions for different types of open space that recognize their capacity for improvements, access limitations, natural hazard levels, biological resources, and other physical characteristics (Note: this should be done as part of Program PROS-3.3A, listed below).*

Policy PROS-3.3: Open Space Management

Maintain and manage City-owned open space lands to reduce natural hazards and wildfire risks, enhance recreational opportunities, maximize ecological value, support climate resilience, and preserve aesthetics. Work with other public open space owners to support similar objectives on their properties within the San Rafael Planning Area. It is recognized that these objectives may conflict as management decisions are made; solutions should strive for balance and reflect objective data, wildfire science, and community input.

Program PROS-3.3A: Open Space Management Plan. *Work collaboratively with residents, environmental organizations, fire departments, and land management agencies such as Marin Municipal Water District, Marin County Parks and Open Space District, and California State Parks to develop an Open Space Management Plan. The Plan should address appropriate uses of open space in the Planning Area, along with provisions for ongoing maintenance and improvement. It should include six areas of focus:*

(1) Recreation, including appropriate access points, parking and staging areas, wayfinding and interpretive signage, existing and future trail alignments, and guidelines for the location of amenities such as picnic tables and benches.
(2) Habitat Protection, including enhancing natural habitats, mitigating the impacts of human activities and climate change on plant and animal life, and preserving natural ecological functions.
(3) Hazard reduction, in accordance with ecologically sound practices and wildfire science, including removal of highly flammable invasive species, emergency access, and erosion control. This should be closely coordinated with ongoing efforts by the San Rafael and Marin County Fire Departments, Marin Wildfire Prevention Authority, CalFIRE, and non-profit organizations such as FireSafe Marin.
(4) Green infrastructure, including the capacity of open space areas to sequester carbon, absorb runoff, maintain water quality, mitigate climate change impacts, protect and enhance native biodiversity, and improve resilience.
(5) Public education, including interpretive facilities
(6) Funding, including operating costs and capital projects, and options for covering those costs such as assessment districts, interagency agreements, volunteer programs, and private funding, in addition to City funds.

Policy PROS-3.4: Open Space Impediments

Address activities that impair the value of open space or create hazardous conditions on open space, including illegal camping and campfires, erosion and landslides, plant pathogens or diseases, invasive plants and animals, disruption of special status species, and unauthorized activities that can cause environmental harm.

Program PROS-3.4A: Diseased Vegetation. *Work with resource agency experts to address tree pathogens and to remove hazardous vegetation and harmful invasive plants.*

Program PROS-3.4B: Illegal Encampments. *Continue to work with private and public property owners to identify and remove illegal encampments in open space areas. Provide a clear method for the public to report encampments when they are observed and work with Marin County Health and Human Services to help those in encampments find housing.*

Policy PROS-3.5: Private Open Space

Ensure the long-term stewardship of privately-owned open space in a manner that conserves natural resource and aesthetic values, sustains wildlife, and reduces hazards to life and property. Opportunities to better integrate common open space in private development with public open space space (via trails, etc.) should be encouraged.

Program PROS-3.5A: Appropriate Use of Private Open Space. *When land is set aside as permanent open space in a private development or is dedicated to a public agency as open space, specify enforceable use limitations such as restrictions on structures, plant materials, and fences.*

Policy PROS-3.6: Access to Open Space

Encourage public access to open space areas in the design of development on adjacent sites and in existing developed areas. Access should be secured as part of subdivision approval and through coordination with affected property owners. Access paths should be designed to minimize neighborhood and user conflicts and avoid conflicts with sensitive wildlife habitat.

Program PROS-3.6A: Access Points. *Use the development review process to identify open space access points and required features such as signage, trailheads, and parking.*

Policy PROS-3.7: Coordinated Open Space Planning

Coordinate the planning and management of San Rafael's open space system with adjacent cities, Marin County, the State of California, and regional and private open space systems.

Program PROS-3.7A: Coordination with Other Jurisdictions. *Continue to work with the public agencies managing open space within the San Rafael Planning Area to coordinate and implement City and County wildfire action plans, habitat conservation programs, and recreation improvements.*

Policy PROS-3.8: Trails

Encourage the development and maintenance of trails within and between open space areas. Trails should be designed and maintained in an environmentally sensitive manner and should provide safe and secure routes for a variety of users.

Program PROS-3.8A: Citywide Trails Map. *Develop—or assist volunteers with developing—a citywide trail map, building on work that has already been done by local advocacy groups.*

Program PROS-3.8B: Trails Master Plan. *Pursue grant funding and develop a Trails Master Plan, including provisions to improve access and signage to park and open space areas from San Rafael neighborhoods and balance the needs of different trail user groups. The Master Plan should include recommendations for new and enhanced trails, minimizing wildlife and habitat impacts, use guidelines for a variety of users, signage, surface materials, maintenance, compliance with trail rules, and staging areas. The Plan should incorporate the "greenway" improvements from the Bicycle and Pedestrian Master Plan, as well as plans for the Bay Trail, Canal walkway, North San Rafael promenade, and "water" trails for kayaks in San Francisco Bay. San Rafael's network of neighborhood paths, stairways, and mid-block walkways also should be included.*

Policy PROS-3.9: Utilities in Open Space

Discourage large-scale utility infrastructure such as electric transmission lines, large wind turbines, and cellular phone towers in local open space areas. Where such facilities already exist, or where there are no other siting options, utilities should be located and designed to minimize harm to avian life and the area's environmental and visual quality.

Policy PROS-3.10: Public Education

Provide education programs to residents about the importance of open space to wildlife, wildfire prevention, watershed protection and water quality, climate resilience and carbon sequestration, habitat conservation, and human well-being.

Program PROS-3.10A: Public Education. *Continue outreach and public education on open space management, including wildfire prevention, stormwater management requirements, predatory animal control, climate change, and coordination between public and private property owners*. Also, conduct periodic user surveys to better understand the needs and interests of open space visitors and determine which areas may require further attention.

Program PROS-3.10B: Interpretive Facilities. *Encourage the development of interpretive trails, nature centers, signage, and similar features that educate San Rafael youth and adults about the natural environment, best practices in conservation, and the value of open space. This should include information about the historic value of open space, including past uses of individual sites (such as mining, logging, military defense, farming, and hunting).*

SAFETY AND RESILIENCE ELEMENT

Goal S-1: A Safer, More Resilient City

Minimize San Rafael's vulnerability to the impacts of environmental hazards and public health emergencies. *San Rafael is susceptible to earthquakes, wildfires, landslides, floods, extreme heat, and other hazards, many of them intensified by a changing climate. The City will reduce the potential for damage and losses to property, health and human life, the economy, and the environment. It will also effectively respond to public health emergencies by minimizing disruption of critical services and providing effective communication and response.*

Policy S-1.1: Local Hazard Mitigation Plan (LHMP)

The San Rafael LHMP is adopted by reference into the General Plan.[4] Policies and actions throughout the General Plan shall be consistent with the LHMP and support its goals and objectives.

> ***Program S-1.1A: LHMP Mitigation Action Plan.*** *Implement the Mitigation Action Plan in the LHMP. The City will consider opportunities to advance each action through operating procedures, development approvals, budgets, public education, and capital improvement projects.*
>
> ***Program S-1.1B: Mitigation Program Funding.*** *Develop an overall funding strategy to prioritize and pursue mitigation projects, including identification and tracking of grants and regular coordination with FEMA and State hazard mitigation agencies.*
>
> ***Program S-1.1C: LHMP Updates.*** *Periodically update the Local Hazard Mitigation Plan to reflect new data, technology, available resources, partnership opportunities, and state and federal requirements.*

Policy S-1.2: Location of Future Development

Permit development only in those areas where potential danger to the health, safety, and welfare of the community can be adequately mitigated. Land uses and densities should take environmental hazards such as earthquakes, flooding, sea level rise, and wildfires into consideration.

> ***Program S-1.2A: Entitlement Process.*** *Use the entitlement process to evaluate the potential for hazards and to require appropriate mitigation measures and approval conditions.*
>
> ***Program S-1.2B: Use of Hazard Maps in Development Review***
> *Review slope stability, seismic, flood hazard, sea level rise, wildfire, and other environmental hazard maps when development is proposed. Require appropriate studies and actions to ensure that hazards are identified and mitigated.*

See also Policy LU-1.8 on clustering. See the Conservation Element for policies relating to air quality and development suitability.

Policy S-1.3: Location of Public Improvements

Avoid locating public improvements and utilities in areas with high hazard levels. When there are no feasible alternatives, require effective mitigation measures to reduce the potential for damage.

> ***Program S-1.3A: Critical Facilities in Vulnerable Areas.*** *Prepare a Public Facility Vulnerability Assessment to identify City buildings and other infrastructure that are susceptible to environmental hazards. Measures should be taken to avoid extraordinary maintenance and*

[4] *The LHMP was adopted on November 20, 2017. This policy applies to that document, including any subsequent amendments.*

operating expenses associated with hazardous conditions and minimize damage potential and interruption of service following a disaster.

Policy S-1.4: Public Health Emergencies

Minimize the impact of public health emergencies, including pandemics, through effective planning, response, and recovery. The City will work with the County of Marin and other public and private partners to contain and control disease outbreaks, limit the number of illnesses and deaths, preserve the continuity of critical government functions, minimize social disruption, and reduce economic loss.

Program S-1.4A: LHMP Amendments. *Amend local emergency preparedness documents as needed to address public health emergencies, including communication protocol, emergency operating procedures, and provisions for sheltering-in-place.*

Program S-1.4B: Pandemic Response and Recovery. *Monitor and update data to support response and recovery to the 2020 COVID-19 pandemic. Such data should consider immediate and long-term impacts on housing, jobs, equity, local retail, parks and open spaces, health care, social services, the environment, demand for City services, and other variables that shape the safety and well-being of San Rafael residents and employers. As needed, amend policies and ordinances to address pandemic impacts and facilitate recovery and resilience to future public health emergencies.*

Goal S-2: Resilience to Geologic Hazards

Minimize potential risks associated with geologic hazards, including earthquake-induced ground shaking and liquefaction, landslides, erosion, sedimentation, and settlement*. Development proposed within geologic hazard areas shall not be endangered by, nor contribute to, hazardous conditions on- or off-site. New development should only be approved in areas of identified geologic hazard if the hazard can be appropriately mitigated.*

Policy S-2.1: Seismic Safety of New Buildings

Design and construct all new buildings to resist stresses produced by earthquakes. The minimum level of seismic design shall be in accordance with the most recently adopted building code as required by State law.

Program S-2.1A: Seismic Design. *Adopt and enforce State building codes which ensure that new or altered structures meet the minimum seismic standards set by State law. State codes may be amended as needed to reflect local conditions.*

Program S-2.1B: Geotechnical Review. *Continue to require geotechnical studies and peer review for proposed development as set forth in the City's Geotechnical Review Matrix (Appendix F). Such studies should determine the extent of geotechnical hazards, optimum design for structures and the suitability of proposed development for its location, the need for special structural requirements, and measures to mitigate any identified hazards. Periodically review and update the Geotechnical Review Matrix to ensure that it supports and implements the Local Hazard Mitigation Plan.*

Program S-2.1C: Earthquake Hazard Study. *As recommended by the Local Hazard Mitigation Plan, complete an Earthquake Hazard Study that examines geologic hazards in the city.*

Policy S-2.2: Minimize the Potential Effects of Landslides.

Development proposed in areas with existing or potential landslides (as identified by a registered geologist or geotechnical engineer) shall not be endangered by, or contribute to, hazardous conditions on a site or adjoining properties. The City will only approve new development in areas of identified landslide

hazard if the hazard can be appropriately mitigated, including erosion control and replacement of vegetation.

Program S-2.2A: Landslide Mitigation and Repair Projects. *Undertake landslide hazard mitigation and repair projects, as outlined in the LHMP. These projects include a landslide identification and management program, repair of the Fairhills Drive landslide, and repair of the Bret Harte sewer easement.*

Policy S-2.3: Seismic Safety of Existing Buildings

Encourage the rehabilitation or elimination of structures susceptible to collapse or failure in an earthquake. Historic buildings shall be treated in accordance with the Historic Preservation Ordinance and Historic Building Code (*see also Program CDP-5.5A*).

Program S-2.3A: Seismic Safety Building Reinforcement. *Enforce State and local requirements for reinforcement of existing buildings, including the City's remaining unreinforced masonry (URM) buildings.*

Program S-2.3B: Soft-Story Building Mitigation Plan. *Complete a citywide assessment of soft-story buildings and develop a mitigation strategy and cost-benefit analysis to modify these structures to reduce their potential to collapse during an earthquake.*

Policy S-2.4: Post-Earthquake Inspections

Require post-earthquake inspections of critical facilities and other impacted buildings and restrict entry into compromised structures as appropriate. Following a major earthquake, inspections shall be conducted as necessary in conjunction with other non-city public agencies and private parties to ensure the structural integrity of water storage facilities, storm drainage structures, sewer lines and treatment facilities, transmission and telecommunication facilities, major roadways, bridges, elevated freeways, levees, canal banks, and other important utilities and essential facilities.

Program S-2.4A: Inspection List. *Develop and maintain a list of facilities that would be inspected after a major earthquake, including City-owned essential or hazardous facilities. Facilities on the list should be prioritized for inspection-scheduling purposes.*

Policy S-2.5: Erosion Control

Require appropriate control measures in areas susceptible to erosion, in conjunction with proposed development. Erosion control measures should incorporate best management practices (BMPs) and should be coordinated with requirements for on-site water retention, water quality improvements, and runoff control.

Program S-2.5A: Erosion and Sediment Control Plans*. Require Erosion and Sediment Control Plans (ESCPs) for projects meeting the criteria defined by the Marin County Stormwater Pollution Prevention Program, including those requiring grading permits and those with the potential for significant erosion and sediment discharges. Projects that disturb more than one acre of soil must prepare a Stormwater Pollution Prevention Plan, pursuant to State law.*

Program S-2.5B: Grading During the Wet Season*. Avoid grading during the wet season due to soil instability and sedimentation risks. Require that development projects implement erosion and/or sediment control measures and runoff discharge measures based on their potential to impact storm drains, drainageways, and creeks.*

Program S-2.5C: Sediment Use. E

xplore the use of sediment from human activities such as dredging and natural processes such as erosion for wetlands restoration and shoreline resiliency projects.

Policy S-2.6: Septic Systems

Discourage the use of septic systems within San Rafael's Planning Area. If no other alternatives exist, then soil tests shall be required to determine if soils are suitable for a septic system or other innovative means of onsite wastewater disposal. In hillside areas, an evaluation of the impact of additional water from a septic system on hillside stability shall be required. New or improved septic systems shall be designed by a registered civil engineer that specializes in septic design.

Goal S-3: Resilience to Flooding and Sea Level Rise

Recognize, plan for, and successfully adapt to the anticipated effects of increased flooding and sea level rise. *San Rafael's land use patterns, transportation system, and infrastructure should be planned to anticipate the impacts of extreme weather events and global climate change, including sea level rise, rising groundwater, and potential flooding. A range of measures will be used to mitigate flood hazards along drainageways and creeks and improve resilience and flood protection in low-lying areas,*

Policies to reduce the greenhouse gas emissions that contribute to global climate change are included in other parts of the General Plan, especially the Conservation/ Climate Change Element and the Mobility Element.

Policy S-3.1: Sea Level Rise Prediction Map

Utilize Figure S-2 (Sea Level Rise Prediction Map) to address flooding and sea level rise hazards. The figure should be used to:

a) maximize public awareness and disclosure to property owners and the public.
b) assess and address impacts to future development.
c) establish a zoning "overlay zone" and building code requirements for future planning and adaptation.
d) plan opportunity areas for adaptation.
e) inform funding and financing decisions about short-term and long-term adaptation projects.

> ***Program S-3.1A: Incorporate into City GIS.*** *Incorporate the Sea Level Rise Prediction Map into the City's Geographic Information System (GIS) map and utilize GIS as a publicly accessible tool for tracking flooding and sea level rise hazards.*
>
> ***Program S-3.1B: Periodic Update of Sea Level Rise Prediction Map.*** *Review sea level rise data at least once every five (5) years to determine the need for Map updates.*
>
> ***Program S-3.1C: Sea Level Rise Overlay Zone****. Adopt an "overlay zone" on the City Zoning Map incorporating the Sea Level Rise Projection Map. The "overlay zone" shall include land use regulations for site planning and a minimum construction elevation that reflects flooding and sea level rise data.*

Policy S-3.2: Data Consistency

Ensure that the information and data related to increased flooding and sea level rise is current and consistent with the information and data utilized by the County of Marin.

> ***Program S-3.2A: Coordination with County of Marin.*** *Coordinate with the County of Marin on updating data related to increased flooding and sea level rise. Utilize the County of Marin Bay Waterfront Adaptation & Vulnerability Evaluation (BayWAVE) as the basis for all City-prepared documents and plans addressing and adapting to increased flooding and sea level rise.*

Policy S-3.3: Awareness and Disclosure

Maximize awareness and disclosure by providing information to property owners and the public on areas subject to increased flooding and sea level rise vulnerability.

> ***Program S-3.3A. Residential Building Resale (RBR) Reports****. Revise the RBR Report template to include a disclosure of potential property risk due to increased tidal flooding and sea level rise. Utilize the Sea Level Rise Prediction Map for confirming property vulnerability. Work with realtors and property owners to implement this requirement.*

Policy S-3.4: Mitigating Flooding and Sea Level Rise Impacts

Consider and address increased flooding and sea level rise impacts in vulnerable areas (see Figure S-2) in development and capital projects, including resiliency planning for transportation and infrastructure systems.

> ***Program S-3.4A: Development Projects****. Where appropriate, require new development, redevelopment projects, and substantial additions to existing development to consider and address increased flooding and sea level rise impact, and to integrate resilience and adaptation measures into project design.*
>
> ***Program S-3.4B: Capital Projects and Roadways****. Prepare a guidance document to address increased flooding, sea level rise impacts, and adaptation measures into the City's capital projects and planning process. This should include strategies to identify and evaluate the costs, benefits and potential revenue sources for elevating or redesigning low-lying roadways and critical infrastructure. If the life of a public improvement in a vulnerable area extends beyond 2050, adaptation measures should be incorporated.*
>
> ***Program S-3.4C. Coordination with Utilities and Services.*** *Coordinate with the utilities and services that have infrastructure and facilities in vulnerable areas (for example: wastewater treatment plants) to ensure that sea level rise information and goals are consistent with the City's goals, and that infrastructure/utilities projects address and plan for increased flooding and sea level rise.*
>
> *See also Policies CSI-4.6 and M-2.11 addressing sea level rise impacts on infrastructure and transportation*

Policy S-3.5: Minimum Elevations.

For properties in vulnerable areas, ensure that new development, redevelopment, and substantial additions to existing development meets a minimum required construction elevation. Minimum elevations and other architectural design strategies should provide protection from the potential impacts of a 100-year flood (a flood with a one percent chance of occurring in any given year), the potential for increased flooding due to sea level rise, and the ultimate settlement of the site due to consolidation of bay mud from existing and new loads and other causes.

> ***Program S-3.5A: Code Amendments for Floor Elevation****. Update and adopt zoning, building and public works code requirements to establish and mandate a minimum finished floor elevation for new development, redevelopment and substantial additions to existing development. Consider adopting a minimum, finished floor elevation requirement of +3 feet above the FEMA 100-year flood elevation requirement.*[5]
>
> ***Program S-3.5B: Ground Elevation Surveys.*** *Perform periodic ground elevation surveys in the Sea Level Rise vulnerability zone. The result of the surveys should be considered when developing projects to reduce coastal flooding potential.*

[5] *The + 3 feet requirement has been used in several other bayfront communities.*

Program S-3.5B: Title 18 Flood Protection Standards. *Evaluate and revise Title 18 of the Municipal Code (Protection of Flood Hazard Areas) to address anticipated sea level rise, increases in rainfall intensities, and any changes related to Federal or regional flood reduction criteria.*

Program S-3.5C: National Flood Insurance Program (NFIP). *Continue to comply with the federal NFIP by maintaining a flood management program and flood plain management regulations. In addition, develop and periodically update a Community Rating System (CRS) to notify residents of the hazards of living in a flood area, thereby reducing local flood insurance rates.*

Policy S-3.6: Resilience to Tidal Flooding

Improve San Rafael's resilience to coastal flooding and sea level rise through a combination of structural measures and adaptation strategies.

Program S-3.6A: Sea Level Rise Adaptation Plan*. Prepare and adopt an adaptation plan addressing increased flooding and sea level rise. The adaptation plan shall include the following components:*

a) Sea Level Rise Projection Map, to be used as the basis for adaptation planning.
b) Coordination with local, county, state, regional and federal agencies with bay and shoreline oversight, major property owners, and owners of critical infrastructure and facilities in the preparation of the adaptation plan.
c) An outreach plan to major stakeholders and all property owners within the vulnerable areas.
d) An inventory of potential areas and sites suitable for mid- to large-scale adaptation projects (see Appendix #: Sea Level Rise Adaptation Report for more information)
e) A menu of adaptation measures and approaches that could include but not be limited to:
    - *Managed retreat, especially on low-lying, undeveloped and underdeveloped sites; in areas that are permanent open space; and in areas that are environmentally constrained. Transfer of development rights from such areas should be encouraged.*
    - *Innovative green shoreline protection and nature-based adaptation measures such as wetlands and habitat restoration, and horizontal levees where most practical and feasible.*
    - *Hard line armoring measures (sea walls, levees, breakwater, locks, etc.) in densely developed areas to minimize the potential for displacement of permanent residents and businesses.*
    - *Elevating areas, structures, and infrastructure to reduce risks.*
f) The appropriate timing and "phasing" of adaptation planning and implementation.
g) Potential financing tools and opportunities.
h) Coordination or incorporation into the San Rafael Local Hazard Mitigation Plan.

Program S-3.6B: Partnerships*. Foster, facilitate and coordinate partnerships with the County of Marin, other effected agencies and utilities, property owners, and neighborhood groups/organizations on planning for and implementing adaptation projects.*

Program S-3.6C: Countywide Agency/Joint Powers Authority*. Work with the County of Marin to facilitate the formation of a centralized countywide agency or joint powers authority to oversee adaptation planning, financing and implementation.*

Policy S-3.7: Shoreline Levees

Improve and expand San Rafael's shoreline levee system. When private properties are developed or redeveloped, require levee upgrading as appropriate, based on anticipated high tide and flood conditions.

Program S-3.7A: Levee Improvement Plans*. Assess existing levees, berms, and flood control systems to identify reaches with the greatest vulnerability. Develop improvement plans based on*

existing conditions and projected needs, as documented in adaptation plans. This should include improvement studies for the Spinnaker Point levee, as recommended by the LHMP, and the Canalways levee along San Rafael Bay.

Program S-3.7B: Financing Levee Improvements. *Coordinate with property owners; residents and businesses; federal, state, and regional agencies; utilities; and other stakeholders to evaluate potential methods of improving levees and funding ongoing levee maintenance, including assessment or maintenance districts. The cost and fiscal impacts of levee improvements should be evaluated against potential benefits andcosts and consequences of inaction.*

Policy S-3.8: Storm Drainage Improvements

Require new development to mitigate potential increases in runoff through a combination of measures, including improvement of local storm drainage facilities. Other measures, such as the use of porous pavement, bioswales, and "green infrastructure" should be encouraged.

Program S-3.8A: Storm Drainage Improvements. *Consistent with Countywide and regional stormwater management programs, require new development with the potential to impact storm drainage facilities to complete hydrologic studies that evaluate storm drainage capacity, identify improvements needed to handle a 100-year storm, and determine the funding needed to complete those improvements.*

Program S-3.8B: Green Infrastructure Guidelines. *Evaluate potential measures to more sustainably manage stormwater, erosion, and improve water quality associated with urban runoff. This includes improvements such as rain gardens and permeable pavement, which attenuate flooding downstream and provide ecological benefits.*

See also Goal C-3 and Policy CSI-4.10 for related policies and programs on water quality and storm drainage

Policy S-3.9: Flood Control Improvements Funding

Pursue financing and funding opportunities to fund short-term and long-term flood control and adaptation projects. Funding tools and opportunities would include, among others tax or bond measures, assessment districts, geologic hazard abatement districts and grants. The City will also support legislation that provides regional, state, and federal funding for these projects, and will pursue such funding as it becomes available.

Program S-3.9A: Incremental Flood Control Improvements*. Where needed and possible, new development/ redevelopment projects shall include measures to improve area flood protection. Such measures would be identified and required through the development review process.*

Program S-3.9B: Flood Hazard Mitigation Projects. *Undertake flood hazard mitigation projects as outlined in the Local Hazard Mitigation Plan, including sewer relocation and replacement, pump station rehabilitation, corrugated metal pipe replacement, and improvements to flood-prone streets such as Beach Drive.*

Program S-3.9C: Restoration and Dredging Projects. *Implement restoration and dredging projects that will increase stormwater drainage capacity and reduce flood hazards. As noted in the LHMP, this could include restoration of the Freitas Parkway flood channel and dredging of Gallinas Creek and the San Rafael Canal.*

See also Policy CSI-4.11 on canal dredging and Program S-2.5C on sediment use.

Goal S-4: A Fire-Safe Community

Minimize injury, loss of life, and damage to property resulting from wildland fire hazards.

The City will continue to implement fire prevention and preparedness measures that reduce fuel loads and require development to be located, designed and constructed to minimize fire-related risks.

Policy S-4.1: Wildfire Hazards

Continue vegetation management and maintenance programs to reduce the destructive potential of wildfires.

Program S-4.1A: Wildfire Prevention and Protection Action Plan. *Implement the Wildfire Prevention and Protection Action Plan (August 2020) in a manner consistent with the direction provided by the San Rafael City Council.*

Program S-4.1B: Fire Hazard Maps. *Maintain maps identifying potential fire hazard areas in San Rafael. Use these maps for vegetation management and planning purposes.*

Program S-4.1C: Fire Protection Ordinance*. Continue to implement Municipal Code standards to reduce fire hazards in areas, including vegetation management requirements and the designation of a Wildland-Urban Interface (WUI) Zone. Periodically update these standards and the WUI map to implement Wildfire Action Plan measures and other programs to further reduce wildfire risks.*

Program S-4.1D: Wildfire Fuel Breaks. *Where necessary, create new fuel interruption zones in Wildland Urban Interface areas and maintain and expand zones that are already in place. Highly flammable exotic vegetation should be strategically removed in these areas to slow the spread of wildfire and reduce threats to homes.*

Program S-4.1E: Goat Grazing. Continue the use of goat grazing on lands where native vegetation will not be harmed through cooperative relationships with contractors and public agencies.

Program S-4.1F: Encampment-Related Hazards. *Work collaboratively with service providers for homeless residents and other partners to reduce fire hazards associated with illegal encampments and campfires. Consider partnerships to employ unsheltered residents in vegetation management work.*

Program 4.1G: Open Space and Forestry Management. *Develop science-based open space and forest management plans to reduce fuel loads, maintain fuel breaks, replace highly flammable species with native species, and increase the health and carbon sequestration potential of open space lands.*

See the Parks, Recreation, and Open Space Element for additional policies and programs on open space management.

Policy S-4.2: Fire Resilience in Developed Areas

Improve the resilience of neighborhoods and business districts to wildfire hazards.

Program S-4.2A: Reduction of Structure Hazards. *Implement measures to reduce wildfire hazards to existing structures, including fire-resistant landscaping and building materials, protected vents and gutters, phasing out wood shake roofs, vegetation management around structures, limits on highly flammable plant materials, restricted parking on narrow streets, and enforcement and abatement programs. Focus on measures that provide the greatest fire safety benefits relative to their costs to the City and private sector.*

Program S-4.2B: Tree Maintenance. *Undertake a tree safety maintenance program to maintain the health and safety of trees along public roadways and minimize safety impacts from trees falling in road rights of way.*

See the Conservation Element and Community Design Element for additional policies on trees

Program S-4.2C: Public Education on Fire Resilience and Response. *Improve public education and awareness about fire-safe structures and landscaping. This should include demonstration projects that help property owners understand what species to remove and what to plant, and how to make their homes more fire-resistant. Education programs also should address actions to be taken in the event a fire is approaching, including warnings, evacuation routes, shelters, and provisions for "go bags" and personal safety.*

Policy S-4.3: New Development in Fire Hazard Areas

Design new development to minimize fire hazards. Densities, land uses, and site plans should reflect the level of wildfire risk and evacuation capacity at a given location.

Program S-4.3A: Fire Hazard Mitigation in New Development. *Through the development review process, require appropriate mitigation measures such as fire preventive site design, landscaping and building materials, and the use of fire suppression techniques such as interior and exterior sprinklers. Before adopting new Code standards and requirements, consider and disclose their potential costs to applicants relative to the benefits they may provide. .*

Program S-4.3B: Development Review for Emergency Response. *Review development applications in fire prone areas to ensure adequate emergency vehicle access, and adequate water pressure and supply for fire-fighting purposes (see also Goal CSI-4).*

Program S-4.3C: Wildfire Prevention Funding. *Develop new partnerships, revenue opportunities, and funding avenues for wildfire prevention and hazard abatement.*

Goal S-5: Protection from Hazardous Materials

Protect those who live, work, and visit San Rafael from risks associated with hazardous materials. *Threats to human health will be minimized through proper hazardous materials use, storage, transport, disposal, and planning.*

Policy S-5.1: Hazardous Waste Management

Support State, regional, countywide and local programs to responsibly manage hazardous waste consistent with protection of public health, welfare, safety and the environment.

Policy S-5.2: Hazardous Materials Storage, Use and Disposal

Enforce regulations regarding proper storage, labeling, use and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.

Program S-5.2A: CUPA Program. *Continue to participate in the Certified Unified Program Agency (CUPA) program. The CUPA's responsibilities shall include overseeing the investigation and closure of contaminated underground storage tank sites.*

Policy S-5.3: Protection of Sensitive Uses

Provide safe distances between areas where hazardous materials are handled or stored and sensitive land uses such as schools, public facilities, and residences. When the location of public improvements in such areas cannot feasibly be avoided, effective mitigation measures will be implemented.

> ***Program S-5.3A: Inventory of Existing Hazards.*** *Work with State and County GIS data to identify existing hazardous materials permit holders near schools, evaluate relative risk levels, and determine actions in the event of an accidental release. This data should be used to evaluate risk levels and develop measures to ensure the safety of students and school staff where necessary.*
>
> ***Program S-5.3B: Reducing Hazards Near Schools.*** *Consistent with CEQA and the California Public Resource Code 21151.4, limit activities with the potential to release hazardous materials within one-quarter mile of schools.*

Policy S-5.4: Development on Formerly Contaminated Sites

Ensure that the necessary steps are taken to clean up residual hazardous materials on any contaminated sites proposed for redevelopment or reuse. Properties that were previously used for auto service, industrial operations, agriculture, or other land uses that may have involved hazardous materials should be evaluated for the presence of toxic or hazardous materials in the event they are proposed for redevelopment with a sensitive land use.

> ***Program S-5.4A: Use of Environmental Databases in Development Review.*** *When development is proposed, use environmental and hazardous materials data bases (such as the State GeoTracker data base) to determine whether the site is contaminated as a result of past activity. As appropriate, require studies and measures to identify and mitigate identified hazards.*
>
> ***Program S-5.4B: Hazardous Soils Clean-Up.*** *Work with appropriate agencies to require remediation and clean-up prior to development of sites where hazardous materials have impacted soil or groundwater. The required level of remediation and clean-up shall be determined by the Certified Unified Program Agency (see Program S-3.2A) based on the intended use of the site and health risk to the public*.

Policy S-5.5: Transportation of Hazardous Materials

Enforce Federal, State and Local requirements and standards regarding the transportation of hazardous materials. As appropriate, support legislation that strengthens these requirements.

> ***Program S-5.5A: Safe Transport of Hazardous Materials.*** *Support California Highway Patrol's efforts to ensure the safe transport of hazardous materials.*
>
> ***Program S-5.5B: Pipeline Safety.*** *Coordinate with regulatory agencies and utilities to ensure the safety of all fuel pipelines and ensure that maintenance and operating conditions are fully compliant with all state and federal safety regulations*

Policy S-5.6: Hazardous Building Materials

Reduce the presence of hazardous building materials by implementing programs to mitigate lead, friable asbestos, and other hazardous materials where they exist today and by limiting the use of hazardous building materials in new construction. If such materials are disturbed during building renovation or demolition, they must be handled and disposed in a manner that protects human health and the environment.

Policy S-5.7: Household Hazardous Waste

Promote education about the safe disposal of household hazardous waste, such as motor oil and batteries, including the location of designated household hazardous waste disposal sites.

Goal S-6: Emergency Preparedness

Improve disaster preparedness, resiliency, response, and recovery. *The City should enhance public outreach, awareness, education, and preparedness for all hazards to minimize losses.*

Policy S-6.1: Disaster Preparedness Planning

Conduct disaster prevention and preparedness planning in cooperation with other public agencies and public interest organizations.

Program S-6.1A: Mutual Aid Agreements. *Continue, and where feasible expand, mutual aid agreements that augment public safety personnel in times of emergency.*

Program S-6.1B: Standardized Emergency Management System (SEMS)*. Maintain a SEMS-based emergency plan that provides direction and identifies responsibilities after a disaster. Continue to train all City employees and officials in SEMS procedures.*

Program S-6.1.C: Emergency Preparedness Plan. *Update and publicize the City's emergency preparedness plan in conformance with State guidelines, including information on evacuation routes and shelter locations. The City's Emergency Operations Center Handbook also should be updated.*

Program S-6.1D: Urban Search and Rescue Techniques*. Continue to ensure that Urban Search and Rescue techniques remain current. Provide opportunities for trained volunteers to participate as appropriate.*

Policy S-6.2: Neighborhood Disaster Preparedness Programs

Encourage educational outreach to promote awareness and readiness among residents regarding disaster preparedness. Outreach and education should be targeted for each hazard type and risk area, including climate-related incidents. Community involvement is an essential part of resilience and recovery, and residents play an important role in disaster response.

Program S-6.2A: Educational and Training Programs*. Support educational and training programs through the Police and Fire Departments and community-based organizations. These Programs include Community Emergency Response Teams (CERT), Citizens Police Academy, Neighborhood Response Groups (NRGs), and Voluntary Organizations Active in Disaster (VOAD) among others. Neighborhood teams should supplement City resources during emergency situations and can assist in disaster preparedness and mitigation efforts.*

Program S-6.2B: Neighborhood Disaster Plans. *Provide technical assistance as needed to develop and update neighborhood disaster plans*.

Program S-6.2C: Website Improvements. *Regularly update the Fire Department's website and social media presence to provide information on disaster preparedness, resources, and links to other sites. Include printed information in City publications such as the Recreation Activities guide.*

Program S-6.2D: Outreach to Vulnerable Populations. *Identify vulnerable populations (such as non-English speaking residents, frail older adults, young children, and persons with disabilities) that may need assistance in times of disaster. Develop outreach programs that are geared toward these populations, including multi-lingual communications.*

Program S-6.2E: Disaster Management Drills. *Conduct emergency response drills to test the effectiveness of local procedures, including evacuation and emergency shelter drills in neighborhoods prone to flooding and wildfire.*

See also Policies EDI-2.10 and EDI-6.5 on increasing resilience among disadvantaged communities and older adults. See Program EV-1.10A on the role of the business community in emergency preparedness.

Policy S-6.3: Improving Evacuation Capacity

Improve local evacuation capacity by identifying and improving escape routes for areas with unique hazards or at- risk populations and identifying safe assembly locations for evacuees.

> ***Program S-6.3A: Evacuation-Related Capital Projects.*** Identify key capital improvements needed to facilitate the orderly evacuation of at-risk areas and the ability of designated assembly points to handle evacuees.

Policy S-6.4: Emergency Operations Centers.

Maintain a centralized Emergency Operation Center to coordinate emergency responses to emergencies, complemented by other locations in the city that provide for emergency evacuation and service delivery following a major disaster.

> ***Program S-6.4A: Evacuation Shelters.*** *Identify locations of evacuation shelters and provide the necessary training and supplies so that these centers can function effectively during and after a disaster. This should include refuge centers for extreme heat events, power failures, and air quality emergencies.*

Policy S-6.5: Post-Disaster Recovery Planning

Incorporate post-disaster recovery planning in the City's emergency management programs. Recovery planning should include measures to mitigate the potential for further damage.

> ***Program S-6.5A: Essential Services Following Disasters.*** *Make provisions to continue essential emergency public services during and after natural disasters and other catastrophes.*
>
> ***Program S-6.5B: Employee Transportation.*** *To ensure adequate safety personnel in an emergency, explore ways to transport first responders from outlying areas when damaged infrastructure prevents them from driving to San Rafael.*
>
> ***Program S-6.5C: Incentives for Disaster Response and Essential Worker Personnel.*** *Support state legislation and City initiatives that would provide incentives for staff with roles in disaster response to live in San Rafael, so they may be readily available if a disaster should occur.*
>
> ***Program S-6.5D: Rapid Reconstruction Ordinances****. Explore model ordinances and best practices to facilitate rapid reconstruction and recovery, including issues such as temporary housing and modular construction. Reconstruction should achieve code compliance, while advancing green building practices where feasible.*

Policy S-6.6: Effective Communication Systems

Ensure that all City agencies with a role in emergency response are provided with effective, reliable and robust emergency communications systems and equipment. The systems and equipment should have adequate capacity and redundancy to ensure these agencies can accomplish their missions. Consideration should also be given to the communications needs of the County of Marin and other agencies that may be required to supply mutual aid to or from other jurisdictions.

> ***Program S-6.6A: Involvement with Marin Emergency Radio Authority.*** *Maintain active involvement with Marin Emergency Radio Authority (MERA) and pursue installation and activation of the MERA radio system.*

Program S-6.6B: Emergency Alert Systems. *Use emergency alerts, electronic message boards, and other notification systems to warn resident of an active threat such as a flood or wildfire. The use of emergency warning sirens and other types of mass notification alerts also should be considered.*

Policy S-6.7: Emergency Connectors

Pursue the development of road connections for emergency vehicles only to improve access within San Rafael and between San Rafael and adjacent communities.

Program S-6.7A: Emergency Connectors. *Maintain the following existing access routes for emergency vehicles:*

a) the existing connection between Freitas Parkway and Fawn Drive.
b) the all-weather connections between Freitas and Fawn and between Ridgewood and Fawn.
c) The connection between Del Ganado and Butterfield Road in Sleepy Hollow.
d) The private portion of Sienna Way in the Dominican area.
e) The access drive between Peacock and Biscayne.

Consider the need for additional emergency connectors, including the costs, effectiveness, impacts, and potential to use such routes for evacuation in the event of a wildfire.

Program S-6.7B: Obstruction of Evacuation Routes. *Reduce obstacles for emergency vehicles and evacuation routes, including parked cars that constrict emergency vehicle passage.*

Program S-6.7C: SMART Crossing. *Work with SMART to explore the feasibility of an emergency vehicle rail and pedestrian/bicycle crossing at Merrydale Drive. See also Policy NH-4.10*

See the Mobility Element for policies to limit constriction of emergency access routes in future road design.

Policy S-6.8: Design of Public Safety Facilities and Utilities

Ensure that public safety facilities, critical utilities, and telecommunication facilities are designed and constructed to deliver necessary services with minimal interruption in times of disaster.

Program S-4.9A: Facility Evaluations. *Regularly evaluate the need to upgrade essential public safety facilities, equipment, and technology, and identify funding mechanisms to meet these needs.*

Program S-4.9B: Energy Storage Plan. *Develop an Energy Storage Plan, including microgrids and expanded battery capacity, to improve reliability of the power system following a major disaster (see also Policy CSI-4.13 on energy reliability).*

Policy S-6.9: Use of Technology

Leverage new technologies to reduce losses and save lives following a disaster. Implement improvements such as traffic signal pre-emption for first responders to facilitate response and recovery time.

NOISE ELEMENT

Goal N-1: Acceptable Noise Levels

Protect the public from excessive, unnecessary, and unreasonable noise. *Excessive noise is a concern for many residents of San Rafael. This concern can be addressed through the implementation of standards to protect public health and reduce noise conflicts in the community, including the Noise Ordinance.*

Policy N-1: Land Use Compatibility Standards for Noise

Protect people from excessive noise by applying noise standards in land use decisions. The Land Use Compatibility standards in Table N-1 are adopted by reference as part of this General Plan and shall be applied in the determination of appropriate land uses in different ambient noise environments.[6]

> ***Program N-1A: Residential Noise Standards.*** *As shown in Table N-1, maintain a maximum noise standard for backyards, decks, and common / usable outdoor areas of 60 Ldn dB for single family homes and 65 Ldn dB for multi-family and mixed use areas. As required by Title 24 insulation requirements, interior noise levels shall not exceed 45 Ldn in all habitable rooms in residential units.*

Policy N-2: Maintaining Acceptable Noise Levels

Use the following performance standards to maintain an acceptable noise environment in San Rafael:

a) New development shall not increase noise levels by more than 3 dB Ldn in a residential area, or by more than 5 dB Ldn in a non-residential area.
b) New development shall not cause noise levels to increase above the "normally acceptable" levels shown in Table N-1.
c) For larger projects, the noise levels in (a) and (b) should include any noise that would be generated by additional traffic associated with the new development.
d) Projects that exceed the thresholds above may be permitted if an acoustical study determines that there are mitigating circumstances (such as higher existing noise levels) and nearby uses will not be adversely affected.

> ***Program N-2A: Acoustical Study Requirements.*** *Require acoustical studies for new single family residential projects within the projected 60 dB Ldn noise contour and for multi-family or mixed use projects within the projected 65 dB Ldn contour (see Figure #). The studies should include projected noise from additional traffic, noise associated with the project itself, and cumulative noise resulting from other approved projects. Mitigation measures should be identified to ensure that noise levels remain at acceptable levels.*

> ***Program N-2B: Approval Conditions.*** *Establish conditions of approval for activities with the potential to create significant noise conflicts and enforce these conditions once projects become operational.*

Policy N-3: Reducing Noise Through Planning and Design

Use a range of design, construction, site planning, and operational measures to reduce potential noise impacts.

> ***Program N-3A: Site Planning.*** *Where appropriate, require site planning methods that minimize potential noise impacts. By taking advantage of terrain and site dimensions, it may be possible to arrange buildings, parking, and other uses to reduce and possibly eliminate noise conflicts. Site planning techniques include:*

[6] *The standards are derived from the 2017 General Plan Guidelines prepared by the State Office of Planning and Research (OPR).*

(a) *Maximizing the distance between potential noise sources and the receiver.*
(b) *Placing non-sensitive uses such as parking lots, maintenance facilities, and utility areas between the source and receiver.*
(c) *Using non-sensitive uses such as garages to shield noise sensitive areas.*
(d) *Orienting buildings to shield outdoor spaces from noise sources.*
(e) *Incorporating landscaping and berms to absorb sound.*

Program N-3B: Architectural Design. *Where appropriate, reduce the potential for noise conflicts through the location of noise-sensitive spaces. Bedrooms, for example, should be placed away from freeways. Mechanical and motorized equipment (such as air conditioning units) should be located away from noise-sensitive rooms. Interior courtyards with water features can mask ambient noise and provide more comfortable outdoor spaces.*

Program N-3C: Noise Barriers. *Where appropriate, use absorptive noise barriers to reduce noise levels from ground transportation and industrial noise sources. A barrier should provide at least Ldn 5 dB of noise reduction to achieve a noticeable change in noise levels.*

Program N-3D: Noise Reduction through Construction Materials. *Where appropriate, reduce noise in interior spaces through insulation and the choice of materials for walls, roofs, ceilings, doors, windows, and other construction materials.*

Policy N-4: Sound Walls

Discourage the use of sound walls when other effective noise reduction measures are available. Vegetation, berms, and the mitigation measures in Policy N-3 are the preferred methods of absorbing sound along roads, rail, and other transportation features. Where there are no other feasible options (for example, along many sections of US Highway 101), the City will review and comment on sound wall design. Sound walls should be aesthetically pleasing, regularly maintained, and designed to minimize the potential displacement of sound.

Policy N-5: Mixed Use

Mitigate the potential for noise-related conflicts in mixed use development combining residential and non-residential uses.

Program N-5A: Disclosure Agreements. *Where appropriate, require disclosure agreements for residents in mixed use projects advising of potential noise impacts from nearby commercial enterprises, such as restaurants and entertainment venues.*

Policy N-6: Traffic Noise

Minimize traffic noise through land use policies, law enforcement, street design and improvements, and site planning and landscaping.

Program N-6A: Interagency Coordination. *Work with Caltrans, Marin County, the Transportation Authority of Marin, and other agencies to achieve noise reduction along freeways and major arterials in San Rafael. This shall include noise mitigation measures in any redesign plan for the I-580/US 101 interchange.*

Program N-6B: California Vehicle Code. *Enforce applicable sections of the California Vehicle Code relating to noise.*

Program N-6C: Paving and Transit Improvements. *Pursue cost-effective paving technologies to minimize traffic noise and support the use of quieter buses and other mass transit vehicles. Noise reduction should be considered an important benefit as the City and its transit service providers transition to electric vehicles.*

Policy N-7: Aviation-Related Noise

To the extent allowed by federal and state law, ensure that the noise impacts of any changes in facilities or operations are considered when granting or modifying use permits at the San Rafael Airport in North San Rafael and the heliport in East San Rafael (see Noise Contours for San Rafael Airport and Heliport in Appendix I). (*See also Program M-1.4B on drones*).

Policy N-8: Train Noise

Work with Sonoma Marin Area Rail Transit (SMART) to minimize noise and vibration associated with train service and to reduce the potential for impacts on nearby residences.

> ***Program N-8A: Quiet Zones.*** *Maintain the Marin County designated "Quiet Zone" along the rail line. The Zone ensures that train horns are not sounded except when trains are leaving the station, or if there is an emergency.*

Policy N-9: Maintaining Peace and Quiet

Minimize noise conflicts resulting from everyday activities such as construction, sirens, yard equipment, business operations, night-time sporting events, and domestic activities.

> ***Program N-9A: Noise Ordinance.*** *Maintain and enforce the noise ordinance, which addresses common noise sources such as amplified music, mechanical equipment use, and construction. Updates to the ordinance should be periodically considered in response to new issues (for example, allowing portable generators during power outages).*
>
> ***Program N-9B: Construction Noise.*** *Use the environmental review process to identify measures to reduce the exposure of neighboring properties to excessive noise levels from construction activity.*
>
> ***Program N-9C: Noise Specifications.*** *Include noise specifications in requests for equipment information and bids for new City equipment and consider this information as part of evaluation of the bids.*

Policy N-10: City-County Coordination

Coordinate with the County of Marin to consider and mitigate noise impacts when activities in one jurisdiction may affect the other.

> ***Program N-10E: San Rafael Rock Quarry****. Seek to minimize noise impacts of the quarry and brickyard operations through cooperative efforts with the County of Marin through its code enforcement and land use entitlement processes.*

Policy N-11: Vibration

Ensure that the potential for vibration is addressed when transportation, construction, and non-residential projects are proposed, and that measures are taken to mitigate potential impacts.

> ***Program N-11A: Vibration-Related Conditions of Approval.*** *Adopt Standard conditions of approval to reduce the potential for vibration-related construction impacts for development projects near sensitive uses such as housing and schools. Vibration impacts shall be considered as part of project level environmental evaluation and approval for individual future projects.*

Table N-1: Proposed Noise Compatibility Guidelines for San Rafael

Land Uses	Interior CNEL or L_{dn} (dBA)	Exterior Noise Exposure, CNEL or L_{dn} (dBA) 55 60 65 70 75 80
Residential-Low Density Single-Family, Duplex, Mobile Homes	45*	
Residential-Multiple Family	45*	
Transient Lodging, Motels, Hotels	45*	
Schools, Libraries, Churches, Hospitals, Nursing Homes	45*	
Auditoriums, Concert Halls, Amphitheaters	--	
Sports Arena, Outdoor Spectator Sports	--	
Playgrounds, Neighborhood Parks	--	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	--	
Office Buildings, Businesses, Commercial and Professional	50	
Industrial, Manufacturing, Utilities, Agricultural	--	

Normally Acceptable:
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable:
New construction or development generally should not be undertaken.

* Noise level requirement with closed windows, mechanical ventilation, or other means of ventilation shall be provided per Chapter 12 Section 1205 of the Building Code.

Source: State of California General Plan Guidelines, 2017.

MOBILITY ELEMENT

Goal M-1: Regional Leadership in Mobility

Take a leadership role in developing regional transportation solutions. *San Rafael is proud of the leadership role it has taken in planning and securing funding for regional transportation projects. By working closely with regional transportation agencies and service providers, the City plays an important role in managing congestion, reducing greenhouse gas emissions, and expanding travel choices in the Bay Area. The City will continue to advocate for local benefits when regional projects are proposed, including improvements that enhance local access, resilience, economic and fiscal health, social equity, and environmental quality. Project selection and design should be informed by rigorous cost-benefit analysis, objective data, consideration of emerging trends and technologies, and a transparent public process.*

Policy M-1.1: Regional Transportation Planning

Actively coordinate with other jurisdictions, agencies, and service providers to improve the local and regional transportation system and advocate for the City's interests. Work cooperatively to improve transit and paratransit services, achieve needed highway improvements, and improve the regional bicycle and pedestrian networks.

> ***Program M-1.1A: Participation in Countywide and Regional Transportation Planning.*** *Actively participate in the planning activities of the Transportation Authority of Marin, the Metropolitan Transportation Commission, SMART, and other transportation agencies and support implementation of cost-effective regional plans and programs.*
>
> ***Program M-1.1B: Public Information About Transportation.*** *Provide timely information and opportunities for public input on transportation issues and projects through workshops, neighborhood meetings, social media, staff reports, and other means.*

Policy M-1.2: Regional Funding

Support a regional approach to the funding of transit, highway, bicycle, and pedestrian improvements by seeking a broad range of federal, State, and County funds. Use local funds to leverage and match outside funding sources.

> ***Program M-1.2A: Transportation Project Grants.*** *Work with governmental agencies, non-profits and community groups to secure grants for appropriate transportation projects.*

Policy M-1.3: Regional Transportation Improvements

Actively participate in regional transportation improvements that facilitate mobility in San Rafael.

> ***Program M-1.3A: US 101/ I-580 Connector.*** *Continue to collaborate with TAM, Caltrans, the City of Larkspur, and impacted stakeholders on improvements to the US 101/ I-580 interchange and Richmond-San Rafael Bridge, including advocacy for local access improvements to East San Rafael.*

Policy M-1.4: Transportation Innovation

Take a leadership role in delivering innovative transportation services and improvements.

> ***Program M-1.4A: Transportation Technology****. Use the most cost-effective proven technologies available when managing congestion and parking, including transportation information systems and "smart city" improvements.*
>
> ***Program M-1.4B: Delivery Services.*** *Prepare for the potential impacts of emerging delivery service technology, including drones, on local roads, infrastructure, parking systems, and noise.*

Program M-1.4C: Autonomous Vehicles. *Monitor and manage the effects of autonomous vehicles, personal air vehicles, and connected vehicle technology on transportation needs, road design, and travel behavior. Adjust local transportation programs, infrastructure, and design standards as needed.*

Policy M-1.5: Travel Data and Modeling.

Support the collection and analysis of data on travel behavior in San Rafael, particularly related to commute patterns and the effectiveness of City programs. Use this data when considering public expenditures and programs.

Goal M-2: Improved Transportation Efficiency and Access

Sustain an efficient, cost-effective transportation network that continuously improves mobility and accessibility for all users. *The transportation system will remain safe and responsive to the needs of San Rafael residents, businesses, workers, and visitors. Emerging technologies will help improve the operational efficiency of streets and highways. Persons of all ages and physical capabilities will be able to get around the city. San Rafael will continue to manage local congestion while making it easier to get around without a car.*

Policy M-2.1: Road Hierarchy

Maintain a network of arterial, collector, and local streets that efficiently moves traffic through the city. Engineering and design standards should reflect road type and function, the characteristics of adjacent uses, and the need to accommodate motorized and non-motorized travel.

Program M-2.1A: Complete Streets. *Consistent with State "Complete Streets" requirements, maintain street design and engineering standards that plan for the needs of all travelers and minimize conflicts between competing modes. [TEXT BOX ON COMPLETE STREETS]*

Policy M-2.2: Safety

Design a transportation system that is safe and serves people using all modes of travel. Higher levels of congestion may be accepted at particular intersections if necessary to ensure the safety of all travelers, including pedestrians, bicycles, motorists, and transit users.

Program M-2.2A: Collision Data. *Collect and analyze data on traffic collisions and use such data to inform decisions about capital improvements, enforcement, and traffic safety programs.*

Program M-2.2B: Street Pattern and Traffic Flow. *Support efforts by the City Traffic Engineer to configure or re-configure street patterns to improve traffic flow and turning movements while prioritizing safety.*

Policy M-2.3: Cost-Benefit Considerations

Consider the relative costs and benefits of transportation improvement projects, including the amount and source of funding, the potential number of people who will benefit, the expected impact on vehicle miles traveled and climate goals, the cost and time impacts on all travelers, the social and equity impacts, the effects on the environment and public safety, and similar factors.

Program M-2.3A: Cost-Benefit Analysis. *Conduct cost-benefit analyses as part of the design process for proposed transportation projects, including the criteria listed above and other factors that may be relevant (see also Policy CSI-5.1 on cost-benefit analysis).*

Policy M-2.4: Transportation Efficiency

Undertake improvements that manage lane capacity, traffic flow, and intersections more efficiently.

> ***Program M-2.4A: Intelligent Transportation Systems.*** *Support the use of intelligent transportation systems to improve traffic flow and provide real-time data on traffic conditions so that motorists may travel through the city as efficiently as possible.*
>
> ***Program M-2.4B: Reducing Vehicle Idling.*** *Support transportation network improvements to reduce vehicle idling, including synchronized signal timing.*
>
> ***Program M-2.4C: Roundabouts.*** *Consider the use of roundabouts as an alternative to traffic signals and stops signs. Roundabouts can improve the flow of traffic when they are properly designed and located on streets with low to moderate volumes.*

Policy M-2.5: Traffic Level of Service

Maintain traffic Level of Service (LOS) standards that ensure an efficient roadway network and provide a consistent basis for evaluating the transportation effects of proposed development projects on local roadways. These standards shall generally be based on the performance of signalized intersections during the AM and PM peak hours. Arterial LOS standards may be used in lieu of (or in addition to) intersection LOS standards in cases where intersection spacing and road design characteristics make arterial LOS a more reliable and effective tool for predicting future impacts.

a) Intersection Standards. LOS "D" shall be the citywide standard for intersections, except as noted below:
   1) Intersections within the Downtown Precise Plan boundary are subject to the provisions of Section (c) below.
   2) Signalized intersections at Highway 101 and I-580 on-ramps and off-ramps are exempt because these locations are affected by regional traffic and are not significantly impacted by local measures.
   3) LOS "E" shall be acceptable at the following intersections:
      - Andersen and Bellam
      - Bellam and Francisco Blvd East (AM peak only)
      - Freitas at Civic Center/ Redwood Highway
      - Merrydale at Las Gallinas Avenue (PM peak only)
      - Freitas Parkway and Northgate Drive (PM peak only)
   4) LOS "F" shall be acceptable at the following intersections:
      - Andersen and Francisco Blvd West (AM peak only)
      - Bellam and Francisco Blvd East (PM peak only)
      - Merrydale at Civic Center Drive (AM peak only)

b) Arterial Standards. LOS "D" shall be the citywide standard for arterials, except as noted below:
   1) Arterials within the Downtown Precise Plan boundary are subject to the provisions of Section (c) below.
   2) LOS "E" shall be acceptable on the following arterial segments:
      - Freitas Parkway from Las Gallinas to Del Presidio
      - Lucas Valley from Las Gallinas to 101 S/B ramps (PM peak only)
      - Los Ranchitos from North San Pedro to Lincoln
      - Francisco Blvd East from Bellam to Main (Richmond Bridge) (PM peak only)
   3) LOS "F" shall be acceptable on the following segments:
      - Francisco Blvd East from Grand Avenue to Bellam
      - Lincoln from 101 SB/ Hammondale to Mission
      - Del Presidio from Las Gallinas to Freitas

c) Downtown Standards. Intersections and arterials within the boundaries of the Downtown San Rafael Precise Plan are not subject to LOS standards, recognizing their unique context, operation, and physical constraints, as well as their multi-modal character. Proactive measures shall be taken to address and manage Downtown congestion, evaluate and reduce the impacts of new development on the transportation network, and ensure the long-term functionality of streets and intersections. Traffic shall be monitored and evaluated to identify the need for improvements to ensure that Downtown streets adequate serve both local and regional traffic.

d) Additional Provisions for Roads Operating at LOS "E" or "F." Where the adopted standard is LOS "E" or "F," measures should be taken to avoid further degradation of traffic conditions. Projects impacting roads operating at LOS "F" may still be subject to requirements to offset those impacts as a condition of approval.

Program M-2.5A: Traffic Circulation Studies. *Traffic impact studies will be required for projects with the potential to increase congestion, create safety hazards, or otherwise impact local circulation conditions. Unless covered by the exemptions in Policy M-2.5, such studies should include projections of future LOS, an assessment of the contribution of the proposed project to increases in congestion, an assessment of projected increases in congestion on greenhouse gas emissions, and an assessment of traffic impact fees related to the project. Measures to maintain adopted service levels may be required as a condition of approval.*

Projects that are exempt from LOS and/or VMT standards may still be required to perform limited scope traffic and circulation studies to evaluate impacts on traffic conditions or traffic control devices in the immediate area of the proposed project. For projects in Downtown San Rafael, local traffic assessments (LTAs) should evaluate the potential for additional delay or safety hazards at nearby intersections. LTAs should identify necessary road or operational improvements, ingress and egress requirements, and potential site plan changes that reduce delays, conflicts between travel modes, and potential safety hazards.

Guidelines for traffic impact studies and Local Traffic Assessments should be developed within one year after General Plan adoption. The guidelines should include metrics for evaluating impacts to the road network where LOS does not apply or where the acceptable LOS is below the "D" standard.

Program M-2.5B: Level of Service (LOS) Exceptions

Exceptions to LOS planning thresholds may be granted where both of the following circumstances apply:

a) The improvements necessary to attain the standards would conflict with other land use, environmental, community character, emission reduction, safety, housing, or economic development priorities.

b) Based on substantial evidence, the City Council finds that:

(i) The specific economic, social, technological, and/or other benefits of the project to the community substantially outweigh the project's impacts on circulation.

(ii) All feasible mitigation measures have been required of the project including measures to reduce vehicle delay and measures to reduce Vehicle Miles Traveled (VMT); and

(iii) The project is consistent with and advances the Guiding Principles of General Plan 2040, including foundational principles such as maintaining great neighborhoods and a sense of community, and aspirational principles such as improving housing affordability, preparing for climate change, and sustaining a healthy tax base.

Program M-2.5C: Traffic Monitoring. *Monitor and evaluate traffic conditions throughout San Rafael on an ongoing basis. Based on such evaluations, the City Traffic Engineer may develop recommendations to improve operations, address safety concerns, or modify thresholds. New traffic monitoring technology should be implemented as it becomes available.*

Policy M-2.6: Traffic Mitigation Fees

Collect impact fees for new development based on the expected number of trips a project will generate. Fees should be used to implement transportation improvements as directed by City Council resolution.

> ***Program M-2.6A: Traffic Mitigation Fee Updates.*** *Continue to implement and periodically update local traffic mitigation fees and other requirements to cover development-related traffic and transportation improvements.*

Policy M-2.7: Proposed Mobility Improvements

Use Exhibit M-1 (Proposed Mobility Improvements) as the basis for transportation network improvements over the next 20 years. The improvements shown are intended to balance the City's goals of managing congestion, reducing vehicle miles traveled, and enhancing mobility and safety. Specific improvements will be implemented as conditions require and will be refined during the design phase. Exhibit M-1 may be amended as needed to reflect other design solutions and priorities, subject to City Council approval.

Improvements will be implemented through the Capital Improvements Program using a variety of funding sources and may be subject to further environmental review.

> ***Program M-2.7A: Update Proposed Circulation Improvements.*** *Regularly update the list of proposed circulation improvements based on traffic data, available funding, and evolving issues and priorities. Incorporate projects into the Capital Improvements Program as appropriate.*

> ***Program M-2.7B: Circulation Improvement Funding.*** *Advocate for Federal, State, and County funding for the transportation projects shown on Exhibit M-1, as well as other projects that improve mobility in San Rafael.*

Policy M-2.8: Emergency Access

Identify alternate ingress and egress routes (and modes of travel) for areas with the potential to be cut off during a flood, earthquake, wildfire, or similar disaster.

> ***Program M-2.8A: Highway Closures.*** *Develop and update contingency plans for highway closures as part of the City's disaster preparedness and emergency response plans.*

See the Safety Element for additional policies on evacuation and emergency response.

Policy M-2.9: Narrow Streets

In new subdivisions, allow narrower streets to reduce travel speeds and accommodate multiple modes of travel, while still providing for emergency and service access.

See also Goal EDI-6 for policies and actions on the transportation needs of older adults.

Policy M-2.10: Sea Level Rise

Actively plan for the impacts of sea level rise on the transportation system, including the need to elevate roadways, and potentially redesign or relocate roads to reduce flood hazards and meet evacuation needs.

See Goal S-3 for additional policy and program guidance on sea level rise, including transportation impacts

Policy M-2.11: Environmental Benefits

Look for opportunities to create environmental benefits such as stormwater capture and treatment when reconstructing or improving roads and other transportation facilities,

Goal M-3: Cleaner Transportation

Coordinate transportation, land use, community design, and economic development decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation. *Transportation has many direct and indirect environmental impacts. It is the source of 62% of San Rafael's greenhouse gas emissions and the primary source of local air pollution. The City will reduce transportation impacts by supporting cleaner fuel vehicles and higher vehicle efficiency standards,, improving transit and non-vehicular travel modes, and reducing the vehicle miles traveled (VMT) by San Rafael residents and workers. Cost-effective VMT reduction is an essential part of the City's climate action strategy, and a fundamental part of its mobility programs.*

[include narrative text in the Plan that explains why VMT is a clean transportation issue and not a congestion issue.]

Policy M-3.1: VMT Reduction

Achieve State-mandated reductions in Vehicle Miles Traveled by requiring development and transportation projects to meet specific VMT metrics. In the event a proposed project does not meet these metrics, require measures to reduce the additional VMT associated with the project, consistent with thresholds approved by the City Council..

> ***Program M-3.1A: VMT Analysis Guidelines.*** *Develop local guidelines for calculating the projected VMT associated with future development projects and transportation improvements. The guidelines also should cover administration, screening criteria, and appropriate Transportation Demand Management measures and monitoring procedures. All VMT metrics should be reassessed at least once every four years and revised as needed to reflect changing conditions.*

Policy M-3.2: Using VMT in Environmental Review

Require an analysis of projected Vehicle Miles Traveled (VMT) as part of the environmental review process for projects with the potential to significantly increase VMT. As appropriate, this shall include transportation projects and land use/ policy plans as well as proposed development projects.

> ***Program M-3.2A: Screening Criteria for VMT Analysis.*** *Adopt and maintain screening criteria for different land uses and project types to determine when a VMT analysis is required as part of the environmental review process. Screening criteria should be revisited over time to ensure that they are appropriate. The criteria should include exemptions for projects with substantial VMT benefits, such as mixed use and infill development in Downtown San Rafael.*
>
> ***Program M-3.2B: Thresholds for Determining a Significant VMT Impact.*** *Adopt and maintain thresholds to determine if a VMT impact may be considered "significant" under the California Environmental Quality Act (CEQA).*
>
> ***Program M-3.2C: Mitigation Measures for VMT Impacts.*** *Develop and implement mitigation measures that can be applied to projects with potentially significant VMT impacts in order to reduce those impacts to less than significant levels (see Policy M-3.3 and Program M-3.3A).*
>
> ***Program M-3.2D: Overriding Considerations for Projects with Unavoidable VMT Impacts.*** *Require the adoption of specific overriding consideration findings before approving a project that would result in significant unavoidable impacts on VMT.*

Policy M-3.3: Transportation Demand Management

Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, work schedules, ridesharing, pedestrian and bicycle improvements, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.

Program M-3.3A: Develop TDM Program Guidelines. *Develop TDM Program Guidelines – or work in partnership with other local governments to develop Guidelines -- than can be used to mitigate potential VMT increases in new development and encourage reductions in existing development.*

Program M-3.3B: Support for TDM. *Work cooperatively with governmental agencies, non-profits, businesses, institutions, schools, and neighborhoods to provide and support TDM programs.*

Program M-3.3C: City TDM Program. *Implement a TDM program for City employees, potentially in partnership with other local governments, public agencies, and transit providers. Promote the program as a model for other local employers.*

Program M-3.3D: Shifting Peak Hour Trips. *Support efforts to limit traffic congestion by shifting peak hour trips to non-peak hour, modifying school hours to stagger start and end times, and encouraging flexible work schedules.*

Policy M-3.4: Reducing Commute Lengths

Support reduced commute lengths and frequency by encouraging:

(a) hiring of local residents by San Rafael employers.
(b) opportunities for persons who work in San Rafael to live in San Rafael.
(c) telecommuting and flexible work arrangements.
(d) local-serving shopping, restaurants, and services that reduce the need to drive elsewhere.

Program M-3.4A: Telecommuting. *Encourage San Rafael employers to implement telecommuting and work-from-home programs that reduce daily peak hour commutes. Also encourage co-working spaces, home offices, improved internet access, and opportunities for residents employed elsewhere to work productively within San Rafael. Consider "lessons learned" during the 2020 COVID-19 pandemic when evaluating policy approaches to telecommuting.*

Program M-3.4B: Housing Services*. Support and facilitate roommate matching programs, connections between local property managers and major employers, employer housing programs, and other initiatives aimed at helping local workers find housing in San Rafael.*

See the Economic Vitality Element and EDI Element for policies on workforce development so that residents may gain the skills needed to find employment in San Rafael

Policy M-3.5: Alternative Transportation Modes

Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.

Program M-3.5A: Carpooling and Vanpooling. *Support car and vanpooling in San Rafael through local and regional programs and on-line apps that match interested drivers and passengers.*

Program M-3.5B: Shared Mobility. *Support efforts to establish and operate car-sharing, bike-sharing, and other services that provide alternatives to driving, particularly in Downtown San Rafael and other transit-served areas.*

Program M-3.5C: Micro-Mobility. *Coordinate with "micro-mobility" companies such as shared electric scooter and electric bicycle vendors who seek to provide services in San Rafael.*

Program M-3.5D: Transportation Network Companies (TNCs). *Work with TNCs (Uber, Lyft, etc.) to address issues such as curbside management and maximize the potential benefits of such services.*

Policy M-3.6: Low-Carbon Transportation

Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.

Program M-3.6A: ZEV Plan. *Consistent with the San Rafael CCAP, develop a Zero Emission Vehicle (ZEV) Plan with a goal of 25% of the passenger vehicles in San Rafael being ZEVs by 2030. The Plan should provide for additional charging stations, preferential parking for ZEVs, other programs that incentivize ZEV use by San Rafael residents.*

Program M-3.6B: Zero Emission Municipal Vehicles. *As finances allow, shift the municipal vehicle fleet to ZEVs. Use low-carbon fuels as an interim measure until gasoline-powered City vehicles are replaced.*

See also Program M-7.9B on electric charging station requirements

Policy M-3.7: Design Features that Support Transit

For projects located in or near transit hubs such as Downtown San Rafael, incorporate design features that facilitate walking, cycling, and easy access to transit.

Policy M-3.8: Land Use and VMT

Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses.

See the Downtown Precise Plan for programs implementing Policies M-3.7 and 3.8. See also Land Use Element Policy LU-1.3

GOAL M-4: High-Quality Affordable Transit

Support accessible, reliable, cost-effective transit services that provide a convenient, affordable, efficient alternative to driving. *The City of San Rafael is served by several transit agencies, operating buses, trains, ferries, and shuttles. Service improvements by these agencies will be supported so that transit becomes a more competitive alternative to driving, both for trips within San Rafael and for trips to and from other destinations. A safe, convenient, affordable transit system is important to San Rafael's quality of life. Transit has the potential to reduce greenhouse gases, alleviate traffic congestion, and provide mobility to those who are unable to drive or do not own a car.*

Policy M-4.1: Sustaining Public Transportation

Support a level of transit service frequency and routing that promotes transit usage, avoids overcrowding, and makes transit an attractive alternative to driving.

Program M-4.1A: Transit Advocacy. *Support State, County, and regional efforts to sustain and expand Marin County's transit network. Work with neighborhoods, employers, transit providers, transportation planning agencies and funding agencies to improve and expand transit and paratransit services.*

Program M-4.1B: Evaluating Transit Needs. *Support efforts to track, forecast, survey, and respond to changing transit and paratransit needs in order to meet the requirements of specific population groups. Advocate for meaningful public participation in meetings and discussions with transit providers and ensure that the needs of those in the community who are transit-dependent are well represented. Encourage the use of performance measures and regular reporting by transit agencies to ensure services are being delivered as efficiently as possible.*

Program M-4.1C: Partnerships. *Encourage partnerships between local transit service providers to avoid redundancy, maximize coverage and efficiency, and improve transfers between transit systems.*

Program M-4.1D: Transit for Tourism. *Support efforts to provide effective transit options for visitors to West Marin and other County tourist destinations, in order to reduce regional traffic flow through San Rafael.*

Program M-4.1E: Transit Information. *Encourage the development and dissemination of information to facilitate transit use. This includes real-time, multi-lingual information on bus arrivals, departures, transfers, and routes. In addition, the City should include information on transit access on notices of City meetings and provide links to transit websites from its own website*

Program M-4.1F: Public Health. *Work with transit service providers to effectively respond to service and design challenges associated with rider safety during and after public health emergencies.*

Policy M-4.2: Regional Transit Options

Encourage expansion of regional transit connecting Marin with adjacent counties, including basic and express bus service, rail, and ferry service.

Program M-4.2A: Regional Bus Service. *Support expansion of regional bus service to and from other Bay Area counties, including expanded express bus service along the 101 and 580 corridors, and continued bus and shuttle service to the region's airports.*

Program M-4.2B: Rail Service. *Advocate for reliable long-term funding sources to sustain and enhance North Bay rail service.*

Program M-4.2C: Ferry and Water Taxi Service. *Work with the Golden Gate Bridge Highway and Transportation District and other regional agencies to support improved ferry service, additional ferry terminals, efficient connections between ferries and other transportation modes, new ferry routes (to Vallejo, the East Bay, San Francisco, and points south), autonomous buses, and other improvements that would increase ferry use and regional transit ridership. Consider the viability of water taxi service to supplement the ferry system and improve local connections.*

Policy M-4.3: SMART Improvements

Maximize the potential benefits of Sonoma Marin Area Rail Transit (SMART) while minimizing potential conflicts between SMART trains, adjacent land uses, bicycle and pedestrian movement, and vehicle traffic circulation. City plans and programs related to SMART should be periodically evaluated based on changes in funding, operating costs, ridership, and other factors impacting service levels.

Program M-4.3A: Rail Safety. *Work with SMART to improve safety measures along the SMART tracks, reduce train noise, and avoid the blockage of intersections by trains.*

Program M-4.3B: Passenger Pickup and Drop-Off. *Work with SMART on plans to improve passenger pick-up and drop-off, connectivity between trains and buses, and provisions for passenger parking (see also Policy M-7.9 on parking for transit users).*

Program M-4.3C: Arrival Experience. *Create a welcoming experience for passengers arriving at the Downtown San Rafael and Civic Center stations, including wayfinding signage, easy transfers, and clearly marked, well lit pathways to nearby destinations.*

Program M-4.3D: Service Reliability. *Work with SMART to avoid disruptions of service during power outages and provide backup power to sustain operations during and after emergencies.*

Program M-4.3E: Downtown Crossings. *Continue to work with SMART to reduce congestion related to grade-level train crossings in Downtown San Rafael. Encourage SMART to assess the potential cost, as well potential funding sources, to elevate the tracks through Downtown.*

See the Land Use Element for policies on encouraging transit-oriented development in the station areas.

Policy M-4.4: Local Transit Options

Encourage local transit systems that connect San Rafael neighborhoods, employment centers, and other destinations.

Program M-4.4A: Local Bus Service. *Support Marin Transit and Golden Gate Transit efforts to improve bus routing, frequency, and equipment, and to keep bus fares affordable.*

Program M-4.4B: Improved Bus Stops. *Support efforts to improve bus stops and shelters to provide a safe and pleasant experience for riders. Allow commercial advertising to fund bus shelter upgrades and maintenance.*

Program M-4.4C: Local Shuttle Programs. *Support efforts to create financially feasible shuttle, jitney, and circulator bus services to connect passengers arriving at the San Rafael Transit Center and SMART stations to their destinations.*

Policy M-4.5: Transit and the Environment

Encourage a less carbon-intensive transit system with reduced environmental impacts. This could include electrification of buses and trains, and the use of smaller vehicles in areas of lower demand. Environmental costs and benefits should be a critical factor when evaluating transit service improvements over the long- and short-term.

Policy M-4.6: Paratransit Options

Encourage expansion of paratransit and flexible route services as needed to serve specialized populations including seniors, students, and persons with disabilities.

Program M-4.6A: Other Local Transit. *Support Dial-A-Ride, taxi, and transportation network company (TNC) services serving San Rafael.*

Program M-4.6B: Paratransit Service. *Support continued Whistlestop Wheels service and expanded regional paratransit services where needed.*

Policy M-4.7: Intermodal Transit Hubs

Support efforts to develop intermodal transit hubs in Downtown and North San Rafael to provide safe, convenient connections for all travelers. Such hubs should include secure bicycle parking, EV charging

stations, and efficient drop-off and pick-up areas and create a positive experience for those arriving in San Rafael.

Program M-4.7A: Transit Center Relocation. *Complete the relocation process for the San Rafael Transit Center. Design of the facility should consider the effects on local street congestion and the safety of those walking or bicycling to and from the facility. Continue to work with transit service providers to coordinate schedules, transfers, and routing in a manner that is convenient for San Rafael travelers.*

Program M-4.7B: First Mile/ Last Mile Trips. *Work with TAM, transit agencies, neighborhood groups, and the local business community to improve options for "first mile/ last mile" trips connecting regional transit hubs to nearby destinations.*

Program M-4.7C: Implementation of Other Plans*. Implement the recommendations of the Downtown Precise Plan, the Downtown Station Area Plan, and the Civic Center Station Area Plan for coordination of transit services and improvement of connections between travel modes.*

Goal M-5: Safe, Attractive Streets that Connect the Community

Provide a transportation system that minimizes negative impacts on neighborhoods while maximizing access and connectivity in the community. *Local streets should be safe, attractive, and provide easy access to homes and businesses. Neighborhoods should be protected from the impacts of cut-through traffic, regional congestion, and overflow parking. Business districts should be conveniently connected to the neighborhoods around them. Residents should be able to comfortably travel to schools, parks, shopping, and workplaces without driving.*

Policy M-5.1: Traffic Calming

Protect residential areas from the effects of speeding traffic or traffic from outside the neighborhood through appropriate traffic "calming" solutions such as speed humps, bulb-outs, speed limits, stop signs, and chicanes. Traffic calming measures shall not conflict with emergency response capabilities.

Program M-5.1A: Traffic Calming Program. *Maintain a neighborhood traffic calming program under the direction of the City Traffic Engineer and seek funding for its implementation. Ensure neighborhood participation in the development and evaluation of potential traffic calming solutions.*

Program M-5.1B: Emergency Access Considerations. *Ensure that road redesign projects, including bicycle and pedestrian improvements, maintain evacuation capacity and emergency vehicle response time, particularly along designated evacuation routes.*

Policy M-5.2: Attractive Roadway Design

Design roadway projects to be attractive and, where possible, to include trees, landscape buffer areas, public art, public space, and other visual enhancements. Emphasize tree planting and landscaping along all streets.

Program M-5.2A: Landscape Maintenance. *Continue to regularly maintain landscaping along roadways, and to encourage attractive drought-tolerant and native plantings.*

See also Policy CDP-3.3 and 3.4 on landscaping and maintenance of City streets and Policy CSI-4.7 on street maintenance.

Policy M-5.3: Connected Neighborhoods

Identify opportunities to better connect San Rafael neighborhoods to one another and to improve access to local destinations such as schools, shopping, and workplaces. . Consider such connections as part of emergency response and evacuation planning.

> ***Program M-5.3A: East San Rafael Improvements.*** *Consider the potential for new or relocated roads in East San Rafael that would relieve local street congestion, increase efficiency, and improve access between the north and south sides of Interstate 580.*
>
> *See Program M-6.3A for a description of pathway improvements. Improvements are also addressed in the Neighborhoods Element.*

Policy M-5.4: Meeting Local Circulation Needs Around Highway Interchanges

Ensure that regional transportation projects located in San Rafael provide local benefits, address the safety of all travelers, and improve circulation between neighborhoods.

> ***Program M-5.4A: Interchange Improvements.*** *Work with Caltrans and TAM to ensure that the design of freeway interchange improvements includes measures to relieve local congestion, provide commuter parking, improve pick-up/ drop-off parking at bus stops, and enhance pedestrian and bicycle access and safety. This could include safe and separated underpass or overpass pedestrian and bike path crossings where needed.*

Policy M-5.5: School-Related Traffic

Actively encourage public and private schools to reduce congestion caused by commuting students and staff through improved provisions for pick-up and drop-off, parking management, staggered start and end times, and trip reduction.

> ***Program M-5.5A: School Transportation.*** *Implement measures to improve the safety and enjoyment of students walking, bicycling, or taking the bus to school. Examples include pedestrian crossing enhancements, transit passes or reduced rates for students, locating transit stops near school campuses, supporting increased funding for school buses and crossing guards, and staggering school hours.*
>
> *See also Policy CS-1.5 on coordination with schools*

Policy M-5.6: Truck Impacts

Manage truck traffic and deliveries in residential areas to avoid conflicts with local auto traffic, pedestrian and bicycle safety, parking, and adjacent uses.

> ***Program M-5.6A: Trucking Routes and Transportation Permits.*** *Continue to designate specific streets as trucking routes and maintain permit requirements for vehicles that exceed weight limits on non-designated routes.*
>
> ***Program M-5.6B: Quarry Traffic.*** *Continue, and periodically update, measures to mitigate the impacts of quarry-related truck traffic on Point San Pedro Road.*

Goal M-6: Safe Walking and Cycling

Encourage walking and bicycling as safe, pleasurable, healthful ways to travel. *Walking is an integral part of daily life and provides benefits to our health, the environment, and the character of our neighborhoods. Cycling is both a recreational activity and a practical way to complete short trips for many residents. Looking to 2040, walking and cycling will be supported by an expanded network of sidewalks, paths, crosswalks, bike lanes, and bike parking.*

Policy M-6.1: Encouraging Walking and Cycling

Wherever feasible, encourage walking and cycling as the travel mode of choice for short trips, such as trips to school, parks, transit stops, and neighborhood services. Safe, walkable neighborhoods with pleasant, attractive streets, bike lanes, and sidewalks should be part of San Rafael's identity.

Program M-6.1A: Bicycle and Pedestrian Master Plan Implementation. *Maintain San Rafael's Bicycle and Pedestrian Master Plan (BPMP) and update the Plan as required to ensure eligibility for grant funding. The BPMP should be a guide for investment in pedestrian and bicycle infrastructure, and for programs to make walking and cycling a safer, more convenient way to travel.*

Program M-6.1B: Station Area Plans. *Implement the pedestrian and bicycle improvements in the 2012 Downtown Station Area Plan and the 2012 Civic Center Station Area Plan.*

Program M-6.1C: Canal Community Based Transportation Plan (CBTP). *Update the CBTP for the Canal neighborhood, including provisions to improve walking and cycling within the Canal and East San Rafael communities, and better connect the Canal area to Downtown, the waterfront, and the rest of the community.*

Program M-6.1D: Funding. *Seek grant funding for implementation of the BPMP and other plans proposing bicycle and pedestrian improvements.*

Policy M-6.2: Pedestrian and Bicycle Safety

Identify, prioritize, and implement pedestrian and bicycle safety improvements in order to reduce collisions and injuries, and eliminate fatalities.

Program M-6.2A: Implementation of Safety Measures: *Implement pedestrian and bicycle safety measures as described in the 2018 BPMP, including ADA compliant curb ramps, curb extensions in business districts, median refuge islands, active warning beacons, painted bike "boxes" at intersections, and signal phasing adjustments in areas with high bicycle volumes.*

Program M-6.2B: Vision Zero. *Consistent with the BPMP, support a "Vision Zero" approach to safety among pedestrians and cyclists, with the goal of eliminating severe injuries and fatalities.*

Program M-6.2C: Enforcement. *Conduct enforcement activities to improve compliance with traffic safety laws, especially around intersections with frequent collisions.*

Program M-6.2D: Safe Routes Programs. *Work collaboratively with local schools to implement Safe Routes to School programs. Explore similar programs to promote safe routes to parks, work, services, and transit, as well as safe routes for seniors. (safe routes text box)*

Policy M-6.3: Connectivity.

Develop pedestrian and bicycle networks that connect residents and visitors to major activity and shopping centers, existing and planned transit, and schools. Work to close gaps between existing facilities. Funding and prioritization for projects should consider relative costs and benefits, including such factors as safety, number of potential users, and impacts on parking.

Program M-6.3A: Implementation of Pathway Improvements.: *Implement the major pedestrian and bicycle pathway, intersection, and lane improvements included in adopted City plans, including:*

- *Restoration of pedestrian paths, stairways, and rights-of-way, particularly in the "inner ring" neighborhoods around Downtown*
- *An east-west bikeway across Downtown San Rafael*

- *A north-south greenway and separated bicycle and pedestrian facilities along West Tamalpais Avenue*
- *Improved crossings of the San Rafael Canal, including a potential new crossing east of Grand Avenue*
- *Additional Class I, II, and IV lanes, as identified in the BPMP*
- *Improved signage, pavement markings and sidewalk widening*
- *Closing gaps in the Bay Trail*
- *Bike lane improvements to Point San Pedro Road (Cross-Marin Bikeway)*
- *Pedestrian/ bicycle "promenades" along the San Rafael Canal and in North San Rafael (Civic Center Station to Terra Linda Community Center, including Freitas Parkway and North San Pedro Road)*
- *Potential pedestrian crossing over 101 (in association with the I-580/101 reconstruction) and east-west pedestrian improvements under the 101 viaduct through Downtown.*

See the Neighborhoods Element for further descriptions of some of these improvements

Program M-6.3B: Improvements in the Unincorporated Area. *Integrate the recommendations of the Unincorporated Marin County Bicycle and Pedestrian Master Plan to create a seamlessly connected system that allows for easy bicycle travel between City and County neighborhoods. This includes improvements along Miller Creek Road and Las Gallinas Avenue in Marinwood.*

Program M-6.3C: Bicycle Parking. *Create additional bicycle parking and storage capacity at the SMART stations and in Downtown San Rafael.*

Program M-6.3D: Electric Bicycles: *Monitor and support the use of electric bicycles and periodically evaluate the need for standards, programs, and facilities that support their use.*

Policy M-6.4: Urban Trails Network

Identify, renovate, improve, and maintain an urban trails network to encourage walking and appreciation of historical and new pathways.

Program M-6.4A: Urban Trails Master Plan. *As part of a citywide Trails Master Plan, include an "urban trails" component with maps and descriptions of existing and potential urban trails in San Rafael. Urban trails to be identified include, but are not limited to, historic neighborhood stairways and walkways, Downtown alleyways, park pathways, and creekside paths. Identify potential funding sources for projects identified in the Plan projects and include the projects in the Capital Improvements Program.*

Policy M-6.5: Pilot Projects

Support pilot projects that install removable pedestrian and bicycle improvements on a short-term basis to test their effectiveness and public reception before investing in permanent improvements.

Policy M-6.6: Coordination

Work with other jurisdictions, transit agencies, and stakeholders to implement projects that reflect bicycle and pedestrian needs at the local and regional levels.

Program M-6.6A: Bikeshare Program. *Partner with the Transportation Authority of Marin (TAM) in implementation of a bikeshare program in Downtown San Rafael and at the Civic Center station. Consider possible locations for bike sharing "pods" at destinations throughout San Rafael, especially Downtown.*

Program M-6.6B: Monitoring. *Maintain data on the effectiveness of pedestrian and bicycle improvements and use this data to adjust programs as needed.*

Policy M-6.7: Universal Design

Design and construct bicycle and pedestrian facilities to serve people of all ages and abilities, including children, seniors, families, and people with limited mobility.

> ***Program M-6.7A: ADA Compliance.*** *Continue efforts to improve access for those with disabilities, including compliance with Federal and State accessibility requirements.*
>
> ***Program M-6.7B: Best Practices.*** *Continue to construct bicycle and pedestrian facilities according to the most up-to-date local, state, and national best practices and design guidelines.*

Policy M-6.8: Pedestrian and Bicycle Programming

Continue programs and activities to encourage walking and cycling.

> ***Program M-6.8A: Public Information.*** *Maintain public information on pedestrian and bicycle projects, routes, data, and information on the City's website.*
>
> ***Program M-6.8B: Bike to Work Day.*** *Encourage City employees, other San Rafael workers and residents to participate in Bike to Work Days and similar programs that encourage cycling as a viable commute alternative.*
>
> ***Program M-6.8C: Maintenance of Pedestrian and Bicycle Facilities.*** *Develop a program for prioritizing and funding the maintenance of existing pedestrian and bicycle facilities based on use, connectivity, and facility conditions.*

Goal M-7: Well-Managed Parking

Manage parking in a way that meets resident, business, and visitor needs while supporting the City's goal of a more sustainable transportation system. *Parking will be managed to support local businesses and enhance the quality of life in residential areas. In areas of high demand, a range of strategies will be used to balance supply and demand, including pricing, shared parking, on-site parking requirements, public-private partnerships, and similar measures that support mobility and economic vitality. Demand will be monitored over time to respond to trends and ensure appropriate design standards. Parking policies should support the goal of a walkable, transit-friendly environment while still recognizing the needs of motorists.*

Policy M-7.1: Optimizing Existing Supply

Optimize the use of the existing parking supply. Expand the supply where needed through innovative programs, public/private partnerships, and land use policies.

> ***Program M-7.1A: Shared Parking.*** *Encourage shared parking arrangements that serve private and public users (for example, private office parking lots that are available for nighttime public use).*

Policy M-7.2: Parking Districts

Encourage parking districts in areas of high demand. Such districts reduce the burden of providing off-street parking facilities on individual business owners and encourage shared facilities that meet the parking needs of multiple users.

Policy M-7.3: Parking Technology

Use technology to improve parking efficiency and reduce the land area required to meet parking needs.

Program M-7.3A: Downtown Parking and Wayfinding Study Recommendations. *Implement the technology recommendations of the 2017 Downtown Parking and Wayfinding Study and consider the application of these recommendations to other parts of San Rafael.*

Policy M-7.4: Downtown Parking

Maintain a sufficient number of Downtown parking spaces to meet demand and support local businesses.

Program M-7.4A: Monitoring Demand. *Monitor demand for parking around the Downtown SMART station and San Rafael Transit Center to determine the need to adjust parking time limits and costs, and the need to increase supply.*

Program M-7.4B: Assessment District Expansion. *Modify the Downtown Parking Assessment District boundaries to include the areas east to Hetherton and west to E Street. Pursue parking and other transportation-related services and improvements in the expanded area.*

Program M-7.4C: Private Garages. *When new private parking structures are constructed Downtown, encourage the inclusion of spaces that are available for public use (at rates to be set by the owner). Consider development agreements and public private partnerships that support such set-asides.*

Program M-7.4D: Wayfinding Signage. *Improve wayfinding signage for Downtown parking. Undertake marketing programs to make drivers and pedestrians more aware of the location of parking and convenience of Downtown parking lots and garages.*

Program M-7.4E: Design Standards for Parking Garages. *Develop design standards for parking garages to ensure that they maintain architectural integrity, are easy to use, align pedestrians toward their destinations, and can support ancillary activities where they front pedestrian-oriented streets.*

Policy M-7.5: Dynamic Pricing

Consider dynamic pricing options (e.g., varying prices at different times of the day) to manage parking in high-demand locations such as Downtown. Parking rates should distribute demand more evenly and achieve the most efficient use of space. Rates should be periodically adjusted to reflect demand, operating costs, and changes in technology.

Program M-7.5A: Adjustments to Parking Rates. *Establish a formal system for setting and periodically re-evaluating parking rates based on performance, costs, best practices, and similar factors. Rates should be based on occupancy data and designed to support fiscal health, as well as the needs of residents, businesses, workers, and visitors. As needed, the City Code should be modified to establish principles for parking management as well as a process for rates to be reviewed based on specified metrics.*

Policy M-7.6: Off-Street Parking Standards

Maintain off-street parking standards that adequately respond to demand, minimize adverse effects on neighborhoods, and sustain local businesses.

Program M-7.6A: Adjustments to Parking Standards*. Periodically adjust off-street parking requirements to respond to data on parking needs, and trends in vehicle design, car ownership, and travel behavior.*

Program M-7.6B: Parking Reductions. *Allow reduced parking subject to findings that a project will have lower vehicle ownership rates (for example, for senior housing or housing adjacent to a SMART station).*

Policy M-7.7: Parking Management

Proactively manage street parking in areas of heavy demand and areas where parking affects neighborhood character, convenience, and safety.

> ***Program M-7.7A: Residential Permit Parking.*** *Re-evaluate provisions for residential permit parking to make it easier and less costly to implement such programs.*
>
> ***Program M-7.7B: Parking Studies.*** *Periodically conduct neighborhood and business district parking studies. Use these studies as the basis for parking management strategies.*
>
> *See also Policy LU-3.7 on on-street parking in neighborhoods*

Policy M-7.8: Parking for Alternative Modes of Transportation

Designate parking spaces to incentivize and encourage carpooling, electric vehicles, and other more sustainable modes of travel.

> ***Program M-7.8A: Charging Stations.*** *Install additional electric vehicle chargers in public parking lots and garages. Consider expanding electric charging requirements for private parking lots and structures.*
>
> ***Program M-7.8B: Parking Standards.*** *Periodically revisit off-street parking standards to include incentives or additional standards for clean air vehicles, bicycles, shared vehicles, and other low-emission travel modes.*

Policy M-7.9: Parking for Transit Users

Support regional efforts to fund and construct commuter parking along transit routes, near commuter bus pads, and near inter-modal commuter hubs in order to support use of transit. Parking areas should include secure parking for carpools, bicycles and other alternative modes and should minimize neighborhood impacts.

> ***Program M-7.9A: Commuter Parking.*** *Regularly evaluate the need for parking around the SMART stations and San Rafael Transit Center, as well as ways to meet that need.*
>
> *See also Program M-7.5D on wayfinding signage*

Policy M-7.10: Curbside Management

Plan for on-street parking in a way that considers broader curbside needs associated with loading, deliveries, passenger pick-up and drop-off, cycling, and other activities. Curb space should be managed to recognize changing needs throughout the day and night.

COMMUNITY SERVICES AND INFRASTRUCTURE ELEMENT

Goal CSI-1: Educational Excellence

Promote excellent schools and high-quality, equitable education. *The City will support school district and County Office of Education efforts to ensure access to quality education for everyone. San Rafael's schools will provide a safe, supportive, and collaborative learning environment that engages all students. Lifelong learning will be supported through adult education, literacy tutoring, career development, and technology courses.*

Policy CSI-1.1: Educational Programs

Collaborate with schools to foster educational programs and opportunities that benefit the community.

> ***Program CSI-1.1A: Communication.*** *Maintain regular communications with the School Districts, including periodic joint City Council/ School Board meetings, to foster collaboration and address issues of mutual interest.*
>
> ***Program CSI-1.1B: Partnerships with Schools.*** *Participate in school initiatives to educate students about local issues and City government.*
>
> ***Program CSI-1.1C: Higher Education.*** *Expand partnerships with Dominican University, the College of Marin, and other nearby colleges and universities to support local education and lifelong learning.*
>
> *See Goal EDI-5 for additional guidance on educational programming. See Policy LU-2.7 and Policy EDI-5.1 for guidance on child care.*

Policy CSI-1.2: Schools as Community Hubs

Collaborate with schools to provide greater public access to school facilities for neighborhood and community activities.

> ***Program CSI-1.2A: Joint Use Agreements.*** *Develop joint use agreements with the School Districts and other local academic institutions to improve community access to facilities for recreation, child care, and/or community events.*
>
> *See Policy PROS-1.12 for additional guidance on joint use agreements*

Policy CSI-1.3: Relationship to Business Community

Strengthen the relationships between businesses, non-profits, and schools to enhance the quality of education and support workforce development. This should include a better understanding of local business needs, as well as opportunities to meet those needs through academic partnerships.

> ***Program CSI-1.3A: Internships.*** *Provide City-sponsored internships for working-age students and assist with publicity about other internship opportunities through partnerships with the Marin County Office of Education and others. Encourage and facilitate local businesses and non-profits to provide internships, apprenticeships, mentoring, and vocational programs.*

See Policies EV-1.8 and EDI-5.4 for additional guidance on job training, mentoring, and workforce development

Policy CSI-1.4: Lifelong Learning

Offer programs and classes that provide the whole community with opportunities for lifelong learning (i.e., opportunities to continue learning beyond formal education and job training).

***Program CSI-1.4A: City Programs and Classes**. Continue to offer a variety of City-sponsored leisure, recreation, education, and personal enhancement courses and programs for all age groups. Regularly assess participation and public opinion to determine interest and support.*

Policy CSI-1.5: Campus Land Use and Transportation Issues

Work with San Rafael City Schools, the Miller Creek School District, local private schools, and neighborhood organizations to address traffic, parking, and land use issues on and around school campuses.

***Program CSI-1.5A: School Construction Projects.** Coordinate with school personnel on campus construction, modernization, and improvement projects.*

***Program CSI-1.5B: Long-Range Planning and Development Review.** Collaborate with schools on long range planning and development review, including collection of appropriate fees, enrollment projections, and planning for future improvements.*

See Mobility Element Program M-3.3D and Policy M-5.5 on staggering school start and end times to reduce peak hour congestion. See Program M-6.2D for Safe Routes to School Programs

Policy CSI-1.6: Private Schools

Recognize the role of private (e.g., independent) schools in San Rafael's education system and their potential as community partners and resources.

Goal CSI-2: Modern, Welcoming Libraries that Meet Community Needs

Enhance library services and facilities to meet the informational and recreational needs of the community. *San Rafael's public library system will provide an expanded collection of materials, increased access to services and programs, and attractive, comfortable facilities for patrons. New and improved facilities will enable the City's libraries to fulfill their role as places to learn, explore, discover, and grow.*

Policy CSI-2.1: Library Facilities

Improve library facilities to meet current and future needs and recognize the changing role of libraries in community life.

***Program CSI-2.1A: New Main Library.** Fund, develop, and construct a new Main Library designed to provide adequate space for collection materials, City programs, public meeting rooms and technology, seating for visitors, and services for special user groups such as children and teens. Develop adaptive reuse plans for the historic Carnegie Library as part of library planning.*

Policy CSI-2.2: Branch Libraries

Expand community-based library services in East and North San Rafael to ensure that library services are accessible to everyone in the community.

***Program CSI-2.2A: Pickleweed and Northgate Libraries**. Modernize and expand the Pickleweed and Northgate Libraries so they are adequately equipped to deliver the services needed in the surrounding communities.*

***Program CSI-2.2B: School Libraries.** Consider partnerships with the school district to make high school libraries available to the public.*

Policy CSI-2.3: Library Collections

Expand and adapt library collections to meet the changing needs of the community and respond to technological change, while preserving a core collection of materials of continuing value. This should include Spanish language materials.

Policy CSI-2.4: Libraries as Community Centers

Promote programs and events that affirm the role of the City's libraries as community gathering places and a setting for the open exchange of ideas and information.

> ***Program CSI-2.4A: Focused Services.*** *Provide dedicated library programs for children, youth, older adults, and Spanish-speaking residents. Provide other services, such as free internet access and electrical power during an emergency.*
>
> ***Program CSI-2.4B: Literacy Programs.*** *Continue to offer literacy and tutoring programs for English learners, as well as support and training for volunteer tutors.*

Goal CSI-3: Exceptional Public Safety Services

Provide and maintain exceptional fire, public safety, and paramedic services. *San Rafael's Police Department engages with the community to provide professional, fair, compassionate and dedicated law enforcement services with integrity and respect. San Rafael's Fire Department strives to provide quality public fire services, and to deliver fire and emergency medical services with skill, strength, and dedication. In its delivery of public safety services, the City will be a countywide and regional leader in addressing issues related to equity and social justice.*

Policy CSI-3.1: Investment in Public Safety Services

Maintain cost-effective police, fire protection, and paramedic facilities, equipment, and services. Manage increases in costs through effective preventative measures, such as fire prevention and community policing.

> ***Program CSI-3.1A: Police Department Strategic Plan.*** *Develop a Strategic Plan for police services to evaluate trends, establish goals, prioritize future actions, determine budget needs, and align services with other City departments. The Plan should include a proactive response to issues relating to social justice and compassionate law enforcement. Engage the community, including local businesses, in this process.*
>
> ***Program CSI-3.1B: Capital Facilities.*** *Complete improvements to essential public safety facilities made possible by voter-approved measures. Conduct periodic evaluations of facility and technology needs in the future to ensure that the Police and Fire Departments are equipped to respond to emergencies and deliver quality services.*
>
> ***Program CSI-3.1C: Public Safety Training****. Provide and encourage ongoing employee training to ensure public safety staff skills remain current and innovative. Continue to provide training in de-escalation and least harm techniques, as well as mental health and racial bias training.*
>
> ***Program CSI-3.1D: Vehicle and Equipment Maintenance.*** *Maintain and upgrade vehicles and equipment as necessary*.

Policy CSI-3.2: Mitigating Development Impacts

Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public safety, fire prevention, and emergency access and response needs are considered and effectively addressed.

Program CSI-3.2A: Crime Prevention through Environmental Design. *Design new public and private development to achieve "eyes on the street," including site planning, lighting, landscaping, and architectural design features that reduce the potential for crime.*

Program CSI-3.2B: Emergency Response Time. *Use the development review process to identify appropriate measures to reduce fire hazards and ensure adequate emergency response capacity.*

See Safety Element Programs S-4.2A, S-4.3A and S-4.3B for guidance on landscaping and building design measures to reduce fire hazards and maintain defensible space, and to ensure adequate emergency access and water supply for fire-fighting.

Policy CSI-3.3: Community-Based Public Safety

Actively promote a community-based approach to public safety services. This approach should emphasize a high degree of communication and interaction between officers, residents, neighborhood groups, schools, and businesses.

Program CSI-3.3A: Community Safety Programs*. Implement community public safety programs such as National Night Out and the Citizens Police Academy to support a safer community and promote positive relationships between law enforcement officials and residents. Implement similar programs promoting fire prevention and preparedness.*

Program CSI-3.3B: Business Outreach. *Engage the business community in public safety program development and implementation. This should include increasing awareness of existing programs and developing new initiatives and partnerships to address property crime and other public safety issues affecting local businesses.*

See the Safety Element for a discussion of emergency preparedness and wildfire prevention programs

Policy CSI-3.4: Quality of Life Programming

Maintain programs to proactively address quality of life issues, such as peace disturbances, loitering, littering, and vandalism. Focus on personal contact with residents and businesses and build positive relationships with all segments of the community.

Program CSI-3.4A: Foot Patrol Services. *Maintain and potentially expand foot patrol services. Continue to work with homeless service organizations, mental health professionals, and the business community to create a safe, welcoming environment in Downtown San Rafael and other parts of the city.*

Policy CSI-3.5: Traffic Safety

Maintain traffic enforcement programs to ensure the safety of pedestrians, bicycles, and motorists on San Rafael streets, sidewalks, paths, and bikeways. Evaluate and mitigate potential traffic hazards as changes to the circulation system are proposed, and as new modes of travel are introduced.

See Mobility Policy M-6.2 for additional guidance on traffic safety.

Policy CSI-3.6: Mutual Aid

Maintain mutual aid agreements for police and fire service with other jurisdictions and community service districts to ensure that the capacity exists to adequately respond to local emergencies.

See the Safety Element for policies on communication systems improvements

Goal CSI-4: Reliable, Efficiently Managed Infrastructure

Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services. *Streets, water, sewer, storm drainage, energy and telecommunication systems will be managed by the City and allied agencies to sustain high-quality service delivery, while protecting the environment and responding to the challenges of a changing climate. Advances in technology will improve service quality, efficiency, security, and sustainability. A high level of communication and coordination will take place between service providers, ensuring that assets are prudently managed and funding is provided for capital, operating, and maintenance costs.*

Policy CSI-4.1: Capital Investment

Provide for ongoing, preventative maintenance of infrastructure and timely replacement, repair, and upgrading of City equipment.

> ***Program CSI-4.1A: Capital Improvement Programming.*** *Maintain and regularly update a multi-year Capital Improvement Plan (CIP) covering City owned and operated infrastructure and public facilities. Seek the input of other local service providers (MMWD, LGVSD, etc.) when preparing the City's CIP and encourage these agencies to seek City input as they prepare their own CIPs.*
>
> ***Program CSI-4.1B: Funding for Maintenance and Capital Costs.*** *Consider ways to improve the reliability of maintenance funding, such as establishing a reserve fund or voter-approved parcel taxes and special assessments. Identify potential funding sources for unmet and anticipated future capital project needs, such as grants, bond measures, and impact fees.*
>
> ***Program CSI-4.1C: Community-Supported Services.*** *Consider community-supported (e.g., cooperative) services as an alternative to bring fundamental service upgrades to neighborhoods and managing capital costs.*

Policy CSI-4.2: Adequacy of City Infrastructure and Services

As part of the development review process, require applicants to demonstrate that their projects can be adequately served by the City's infrastructure. All new infrastructure shall be planned and designed to meet the engineering standards of the City and various local service and utility providers.

See also Policy LU-1.2 requiring adequate infrastructure as a condition of development approval

> ***Program CSI-4.2A: Long-Term Planning.*** *Continue to use the CIP to analyze and respond to local capital facility needs.*
>
> ***Program CSI-4.2B: Engineering Standards.*** *Require new development to comply with the subdivision standards in the San Rafael Municipal Code, as well as relevant Marin County and utility district engineering standards. Where feasible, encourage development to reach beyond current standards and collaborate with the community to innovate and define new best practices.*
>
> ***Program CSI-4.2C: Impact Fees.*** *Continue to collect impact fees and use other funding mechanisms to ensure that new development pays its fair share of providing/ upgrading services associated with that development.*

Policy CSI-4.3: Public Involvement in Infrastructure Planning

Encourage public participation in the planning and design of City infrastructure projects. As resources allow, this could include advisory committees, task forces, and similar community consultation efforts.

> ***Program CSI-4.3A: Design Review.*** *Require design review for City projects. Provide complementary design review for major projects proposed by other public agencies.*

Program CSI-4.3B: CIP Process. *Continue to make the City's CIP easily available and to solicit public input in the CIP process, including web-based and social media applications that facilitate community feedback.*

Policy CSI-4.4: Sustainable Design

Plan, design, and operate infrastructure to minimize non-renewable energy and resource consumption, improve environmental quality, promote social equity, and reduce greenhouse gas emissions. An evaluation of costs and benefits must be a factor in all improvements. This includes the potential costs of inaction and potential for "avoided costs," particularly with respect to climate change.

Program CSI-4.4A: Public Space and Infrastructure. *Seek opportunities to improve environmental quality in the design of streets, infrastructure, and public spaces. For example, public space improvements provide an opportunity to retain and treat stormwater through groundwater infiltration and subsurface water storage.*

Program CSI-4.4B: Reducing Impervious Surfaces. *Pursue porous pavement, rain catchment areas, and similar elements that reduce runoff.*

See also Green Streets policies and programs in the Conservation/ Climate Change Element

Policy CSI-4.5: Infrastructure Technology

Encourage the use of technology to improve service efficiency and environmental quality.

Policy CSI-4.6: Climate Change Impacts

Incorporate sea level rise and increased storm intensity forecasts in the planning and design of local infrastructure projects.

See also Policy S-2.3 on Infrastructure Resilience and Program S-1.3A on Critical Public Facilities

Program CSI-4.6A: Guidance Document. *Prepare a guidance document for incorporating sea level rise into the City's capital planning process.*

Program CSI-4.6B: Coordination with Service Providers. *Coordinate with water, sewer, energy, solid waste, and telecommunication service providers to prepare a plan for retrofitting critical infrastructure for rising sea levels, more intense storms, and other climate-related impacts.*

Policy CSI-4.7: Street Maintenance

Provide efficient, effective street maintenance, sweeping, and lighting programs. Safe, well-maintained neighborhood streets are an important part of the public realm and the local transportation network.

Program CSI-4.7A: Pavement Management*. Continue participation in the Pavement Management Program to assist in prioritizing street resurfacing projects. Adjust prioritization criteria as needed to ensure that pavement condition, traffic safety, equity, and community input are addressed.*

Program CSI-4.7B: Street Sweeping. *Continue to maintain a street sweeping program. Work with neighborhoods on ways to improve street sweeping efficiency and to publicize street sweeping programs. Investigate alternative funding sources for street sweeping.*

Program CSI-4.7C: Sidewalk Repair. *Continue to implement a cost-sharing program for Sidewalk Repair with residential property owners that is consistent with the State Streets and Highway Code, property owner interest, and funding availability. The success of the program, as well as sidewalk conditions and repair priorities, should be monitored. Potential funding sources and other cost-sharing approaches should be considered to address equity.*

Program CSI-4.7D: Street Lighting Program. *Continue efforts to improve street lighting, staying mindful of the need to balance financial, public safety, and environmental objectives.*

See also Policy C-1.19 and Program C-1.19A on night lighting and dark skies. See Policy C-1.16 on urban forestry and Policy CD-5 on street trees. See Policy EDI-4.2 on equitable maintenance.

Policy CSI-4.8: Potable Water Supply and Delivery

Work with Marin Municipal Water District (MMWD) to meet projected water demand, encourage water conservation, and ensure the reliability and safety of the water supply and distribution system.

Program CSI-4.8A: Urban Water Management Plan. *Support MMWD's efforts to regularly update and implement an Urban Water Management Plan.*

Program CSI-4.8B: Water Supplies. *Monitor efforts by the MMWD to implement conservation standards and expand the local water supply to meet long-term needs and potential future drought conditions. If desalination facilities are proposed along the bayfront in the future, ensure adequate review of environmental, design, and economic issues.*

Program CSI-4.8C: Water Pressure and Storage. *Work with MMWD to ensure that water pressure and storage remains adequate for fire-fighting, and to implement standards for new development that ensure adequate water flow.*

See also Policy C-3.8 on water conservation

Policy CSI-4.9: Wastewater Facilities

Ensure that wastewater collection, treatment and disposal infrastructure is regularly maintained and meets projected needs. Improvements should be programmed to meet state and federal standards, respond to sea level rise and seismic hazards, repair and replace aging or leaking pipes, and protect environmental quality.

Program CSI-4.9A: Coordination of Services. *Support efforts by the Las Gallinas Sanitary District, Central Marin Sanitation Agency and San Rafael Sanitation District to maintain high-quality wastewater collection and treatment facilities.*

Policy CSI-4.10: Storm Drainage Facilities

Continue to monitor and pursue improvements to the storm drainage system, including programs to reduce flooding, improve water quality, remove trash, and respond to climate-related changes. Evaluate the potential for restoration of the natural hydrologic function of creeks and drainageways where possible.

Program CSI-4.10A: Replacement of Aging Facilities. *Pursue the replacement of older or failing drainage facilities such as metal pipes and stormwater pumping stations with more durable and resilient materials, or with new structures and pumps.*

Program CSI-4.10B: Silt Removal. *Continue to remove accumulated silt from City maintained drainageways, ponds, and creeks subject to tidal siltation such as Mahon and Irwin Creeks. Sediment from stream flow and deposition should be considered a potential resource.*

Program CSI-4.10C: Sustainable Stormwater Management. *Seek funding for projects that restore the natural characteristics and functions of stormwater systems, such as bioswales and conversion of concrete ditches to natural creeks. Such projects should mitigate the effects of urban runoff, reduce flood hazards, and improve water quality and habitat value*

See Conservation / Climate Change Element Policies C-3.3 and C-3.4 for additional guidance on "green Infrastructure"

Policy CSI-4.11: Canal Dredging

Periodically dredge the San Rafael Canal to reduce flood risks, maintain environmental health, and keep the canal viable as a commercial and recreational waterway. Dredge spoils should be disposed in an environmentally sensitive manner.

Program CSI-4.11A: Funding. *Utilize federal Army Corps of Engineers funds to survey and plan for Canal dredging. Pursue additional funding for dredging and maintenance, and for levee repair and sea level rise adaptation improvements.*

Policy CSI-4.12: Recycled Water

Encourage additional wastewater recycling by the Las Gallinas Valley Sanitary District, initiation of wastewater recycling by the Central Marin Sanitation Agency, additional recycled water distribution by MMWD, and additional use of reclaimed water where supply ("purple pipe") is available.

Program CSI-4.12A: CMSA Capacity Expansion. *Support implementation of the CMSA/ MMWD Recycled Water Study recommendations, enabling increased use of recycled water and reduced potable water demand.*

Program CSI-4.12B: Las Gallinas Expansion Project. *Support completion of the Recycled Water Expansion Project and continued expansion of recycled water capacity.*

Program CSI-4.12C: Sewer Line Replacement. *Replace low-lying sewer pipes as needed to reduce saltwater intrusion, thereby reducing the cost of producing reclaimed water.*

Policy CSI-4.13: Energy Reliability

Support efforts by local energy service providers and other public agencies to improve the safety and resilience of the local power grid.

Program CSI-4.13A: Backup Energy Provision. *Evaluate backup energy provisions for critical public facilities, mass transit (including rail crossings), and wireless infrastructure and upgrade as needed. Encourage the use of fuel cell, battery storage, and solar generator backups, rather than gasoline-powered generators.*

Program CSI-4.13B: Microgrids. *Encourage further exploration of microgrids, allowing locally-generated renewable energy networks to supplement the electrical distribution system and provide back-up power in the event of an emergency,*

Program CSI-4.13C: Emergency Power and Communication. *Use public facilities as emergency centers for electricity, communication, and cooling in the event of a disaster, extreme heat event, or extended power outage.*

Policy CSI-4.14: Utility Undergrounding

Continue to pursue undergrounding of overhead utility lines, and support maintenance and replacement programs to reduce wildfire hazards.

Program CSI-4.14A: Funding for Undergrounding. *Explore funding opportunities and financing mechanisms to accelerate the undergrounding of utilities, including Rule 20A and B funds, private funding, and assessment districts.*

Program CSI-4.14B: Prioritizing of Undergrounding Projects. *Develop a process to prioritize utility undergrounding projects. Among the factors to be considered are aesthetics, visibility, fire hazards, and vulnerability to flooding and sea level rise.*

Program CSI-4.14C: Public Information. *Provide information to the public on the costs of undergrounding projects, and the options for funding.*

See the Safety Element for additional policies and programs on fire safety and power lines

Policy CSI-4.15: Technology Infrastructure

Upgrade the City's technology infrastructure to improve public access to City services.

Program CSI-4.15A: Technology Improvement Plan. *Develop and maintain a multi-year plan for funding and prioritizing major City technology projects.*

Policy CSI-4.16: Telecommunication Improvements

Ensure that residents, schools, businesses and organizations have access to reliable, modern and cost-effective telecommunications. A variety of network options, including fiber optics and wireless, should be encouraged and expanded throughout the city.

Program CSI-4.16A: Fiber Optic Infrastructure*. Continue to encourage and permit the expansion of fiber optics infrastructure from existing "backbone" conduits to potential "last mile" customers.*

Program CSI-4.16B: Service Providers. *Work with telecommunication service providers to improve access to state-of-the-art systems and services.*

Program CSI-4.16C: Reliability. *Support efforts to "harden" mobile communication infrastructure so it is operational or can be quickly restored during a power outage or emergency,*

See the Community Design Element for policies to mitigate the visual effects of antennae and collocate new telecommunication facilities

Policy CSI-4.17: Reducing Landfilled Waste Disposal

Reduce landfilled waste disposal and related greenhouse gas emissions by reducing material consumption; requiring curbside collection and composting of organic materials; increasing recycling, re-use, and resource recovery; and encouraging the use of recyclable goods and materials.

Program CSI-4.17A: Waste Reduction. Implement waste reduction programs consistent with the San Rafael Climate Change Action Plan and Zero Waste Goal. These include partnerships with Zero Waste Marin, Marin Sanitary Service, and other organizations; requirements for construction and demolition debris recycling; increased monitoring of waste diversion targets; waste audits; and additional infrastructure for removal of recoverable materials from the waste stream.

Program CSI-4.17B: Recycling*. Continue recycling programs and expand these programs to increase waste diversion rates for homes, apartments and workplaces. .*

Program CSI-4.17C: Construction and Demolition Waste. *Continue to implement programs requiring recycling of construction and demolition debris. Encourage the reuse of recycled building materials in future projects.*

Program CSI-4.17D: Waste Reduction Programs. *Continue efforts to reduce electronic waste, refrigerants, and single use plastics; and ensure proper disposal of household hazardous waste. This should include enforcement of City bans on plastic bags and polystyrene foam and potential new programs to reduce microplastics from waterways,*

Program CSI-4.17E: Community Composting. *Consider a mandatory community-scale program for curbside collection and composting of food and green waste, as well as vegetation cleared through fire prevention efforts.*

Program CSI-4.17F: Food to Energy. *Support the Central Marin Sanitation/ Marin Sanitary Food to Energy Program.*

Program CSI-4.17G: Recyclable Waste Receptacles. *Support efforts by Marin Sanitary to install waste receptacles for recyclables in areas of heavy pedestrian traffic.*

Policy CSI-4.18: Waste Reduction Advocacy and Education

Work with other cities and the County of Marin to advocate for programs and legislation to reduce waste and share waste reduction responsibilities with the manufacturers of consumer products.

Program CSI-4.18A: Recycling Education. *Encourage Marin Sanitary to continue its recycling education programs and to expand awareness of "reduce, reuse, and recycle" principles among all residents and employees. Programs to promote reuse and repair of consumer goods rather than landfill disposal should also be supported.*

Goal CSI-5: Sound Municipal Financial Practices

Maintain sound financial practices and sufficient revenue sources to provide high quality City services. *San Rafael provides a broad range of services to meet diverse community needs. Maintaining and enhancing the City's revenue base is essential to providing desired services. The City continues to implement sound financial practices to maintain and improve services while minimizing the cost burden to residents and businesses.*

Policy CSI-5.1: Cost-Benefit Analysis

Incorporate cost-benefit analysis to better understand the costs and impacts of City projects and programs relative to the revenues they may generate and benefits they may provide.

Program CSI-5.1A: Cost-Benefit Methodology. *Develop guidelines and procedures to more formally incorporate cost-benefit and fiscal impact analysis in the evaluation of new projects and programs.*

See also Policy M-2.3 on cost-benefit analysis for transportation improvements

Policy CSI-5.2: Transparent Budgeting

Maintain an open dialogue with the public during the budget process to evaluate and prioritize City services.

Program CSI-5.2A: Public Involvement.

Continue to involve residents and businesses in the budget process to the extent feasible, through community meetings, focus groups, social media, and other outreach methods. Issues associated with rising pension costs also should be reported in a transparent manner.

Policy CSI-5.3: Program Assessments

Evaluate the performance of City programs and services in achieving their stated goals as part of the City's budget process. Retain, adjust or eliminate programs or services as appropriate.

Program CSI-5.3A: Program Assessment. *Continue to provide budget and finance progress reports to the City Council. Continue to use benchmarks and quantifiable metrics, as well as qualitative evaluations, to monitor performance and determine progress in achieving program goals and objectives.*

Program CSI-5.3B: Surveys. *Regularly survey residents on their satisfaction with specific City services and programs (see also Program EDI-1.3B).*

Policy CSI-5.4: Diversifying Funding Sources

As an alternative to increased taxation, pursue methods to diversify funding sources for public services, including grants, public-private partnerships, user fees for specific services, and development fees. As appropriate, the City should also consider streamlined services that cost less to deliver.

Program CSI-5.4A: Revenue Monitoring. *Continue to maintain a revenue monitoring system to assist in trend analysis and revenue forecasting.*

Program CSI-5.4B: Grants. *Actively seek grants and encourage interdepartmental cooperation in preparing grant applications.*

Program CSI-5.4C: Cost of Services. *Periodically evaluate the cost of providing services and adjust revenue sources accordingly.*

Program CSI-5.4D: New Revenue Sources. *Consider establishing new revenue sources to adequately fund services and respond to changing conditions, including sources that require voter approval.*

Policy CSI-5.5: Local Government Partnerships

Partner with other local governments and organizations to provide community services and resolve shared problems cost-effectively.

Program CSI-5.5A: Funding Strategies for Infrastructure and Services. *In cooperation with other jurisdictions, develop funding strategies and joint powers agreements for infrastructure and services that create economies of scale for the contributing parties.*

Policy CSI-5.6: Public-Private Partnerships

Explore public-private partnerships as a way to develop community facilities or achieve other community benefits (for example, public parking, affordable housing, and child care in new development projects).

ARTS AND CULTURE ELEMENT

Goal AC-1: Arts and Culture that Enrich Community Life

Recognize the potential for the arts to enrich and inspire residents, build a sense of community, bridge differences and forge unity, attract visitors, revitalize the city, and provide economic benefit. *Arts and culture are integral parts of San Rafael's quality of life and civic identity. Art connects us, expands our awareness of the world, and makes us stronger as a community. San Rafael has a thriving arts, cultural, and literary scene, with programs, performances, events and venues that serve a diverse and engaged population.*

Policy AC-1.1: Cultural Center of Marin

Continue to promote San Rafael as the hub of arts and culture in Marin County.

> ***Program AC-1.1B: Arts Facilities.*** *Support and encourage efforts to improve and sustain local arts facilities, including those operated by government, non-profits, and other organizations, and recognize their role in making San Rafael a regional arts hub.*
>
> ***Program AC-1.2A: Falkirk Cultural Center.*** *Promote the Falkirk Cultural Center as a venue to support and foster the arts and celebrate local culture. Seek funding to rehabilitate and improve the mansion and sustain programs through income-producing activities.*
>
> ***Program AC-1.1C: Arts and Culture Master Plan.*** *Build on the work done by the County of Marin and San Rafael-based arts organizations to create a San Rafael Arts and Culture Master Plan. All segments of the community, including residents and workers, should be encouraged to participate in this process. The Plan should promote participation of the arts community in civic life, enhance arts programming, promote cultural inclusion, and maximize opportunities for arts events. Potential funding sources for a Master Plan and its implementation should be explored. As part of this process, options for ongoing leadership and arts advocacy should be considered, potentially including an Arts Council or similar organization.*

Policy AC-1.2: Arts Programming

Encourage and support an array of cultural arts programs and activities addressing the needs and interests of the whole community.

> ***Program AC-1.2A: City Activities.*** *Continue to provide City-sponsored arts classes and cultural activities, including arts programs at San Rafael's community centers. Programs should be equitably distributed around the City so that they can be accessed by all residents.*
>
> ***Program AC-1.2B: Programs for Diverse Populations.*** *Encourage additional inclusive arts programming for the general public, including persons of all socio-economic means, ages, ethnicities, genders, and abilities. Special emphasis should be placed on programs for youth, children, and older adults.*
>
> ***Program AC-1.2C: Advocacy for Arts Programming****. Advocate for continued arts programming in public schools and other venues.*
>
> ***Program AC-1.2D: Public Information.*** *Work with local arts organizations to improve public awareness of local venues, galleries, exhibits, events, performances, and opportunities to participate in arts and cultural events in the city. Provide links to such information on the City's website and strengthen the website as a resource for the arts community.*

Policy AC-1.3: Partnerships

Promote and strengthen partnerships and collaborative arts programming with local artists, schools and institutions of higher learning, community-based organizations, the County of Marin, the private sector, and non-profit arts organizations.

> ***Program AC-1.3A: Venues.*** *Encourage arts groups, schools, and businesses to conduct programs in City venues. Seek opportunities for the City to use County, institutional, and private space for its arts activities.*

Policy AC-1.4: Inclusive Activities

Encourage activities, entertainment and events that reflect San Rafael's diverse cultural heritage and population. Programming should be inclusive of all ages, ethnicities, genders, abilities, and socio-economic groups. Participation in the arts should be supported as a way to promote intercultural understanding, and to bridge differences and forge unity. All residents should have access to arts and cultural activities.

> ***Program AC-1.4A: Equitable Programming.*** *Improve cultural equity and access to arts programming among lower income and non-English speaking residents (for example, through new partnerships, training, outreach strategies, multi-lingual initiatives, and reduced fees for qualifying residents).*

Policy AC-1.5: Public Art

Promote a stimulating and engaging environment through the greater display of public art, including both temporary and permanent works. Locations throughout the city should be considered.

> ***Program AC-1.5A: Art in Public Places.*** *Evaluate the feasibility of an Art in Public Places Ordinance (or "percent for art" program) that would establish a funding source and/or mechanism for increasing public art. Strive for solutions that maximize flexibility in the way funds are collected and used.*

> ***Program AC-1.5B: Community-Based Outdoor Art Installations****. Support participatory public art projects that engage the community, such as murals, 3D art, and street painting. Such projects should foster a greater understanding of local cultures, arts, and history and provide an opportunity to express neighborhood identity.*

Policy AC-1.6: Space for the Arts

Encourage and promote the creation of public and private arts and cultural space in the city, such as galleries, theaters, indoor and outdoor performance spaces, music venues, and cultural centers.

> ***Program AC-1.6A: Art as a Community Benefit.*** *Recognize space for the arts as a community benefit in municipal code and density bonus programs. Expand incentives for incorporating arts space and arts features in new projects and in vacant and underutilized space.*

> ***Program AC-1.6B: Reducing Barriers.*** *Amend municipal codes or adopt new policies as needed to facilitate the temporary or interim use of vacant commercial or lobby space for art exhibits, display space, and "pop up" arts and cultural activities.*

> ***Program AC-1.6C: Central Performance Spaces.*** *Prioritize creation of central outdoor spaces suitable for community-wide events and performances in Downtown San Rafael and in the North San Rafael Town Center (for example, at Northgate Mall).*

Policy AC-1.7: Event Participation

Encourage public and private participation in support of arts and cultural events, including neighborhood fairs and gatherings.

Program AC-1.7A: Sponsorship of Events. *Support special events that provide quality arts, cultural, and enrichment activities in locations throughout the community. .*

Program AC-1.7B: Art and Technology. *Support an expanded and more vibrant arts and cultural presence through technology, including the potential for "virtual" events and media that reach larger, more diverse audiences.*

See also Policy LU-3.11 and Program EV-2.5C on special events

Policy AC-1.8: Arts and the Local Economy

Recognize the value of the arts to the economy of the city, and the role of the arts in community revitalization.

Program AC-1.8A: Arts District. *Leverage the Downtown San Rafael Arts District designation to encourage, promote, and support arts activities, attract visitors and business patrons, promote equity and inclusivity, and create a more welcoming and exciting Downtown environment. Encourage multi-disciplinary art activities and events that showcase local talent and provide opportunities for all residents to experience the arts. Regularly renew the Arts District designation to sustain arts and cultural opportunities.*

Program AC-1.8B: Cultural Tourism. *Promote cultural tourism (for example, visits to the Frank Lloyd Wright-designed Civic Center or the Mission San Rafael Arcangel) as a way to support and sustain the local arts community and hospitality industry. Partnerships with the Marin Convention and Visitors Bureau should be encouraged.*

Policy AC-1.9: Arts-Supportive Environment

Create an environment that is supportive to arts professionals.

Program AC-1.9A: Communication. *Support ongoing communication with and among local arts organizations to address and resolve issues of concern, including pandemic recovery.*

Program AC-1.9B. Engagement in Community Actions. *Recognize the arts community as important stakeholders in local community actions and economic development strategies. Support artist engagement in planning and governance.*

Program AC-1.9C: Showcasing Local Artists. *Consider artist in residence programs, poet laureates, City-sponsored lunch concerts and similar events showcasing the work of local artists and performers.*

Program AC-1.9D: Reducing Costs. *Explore opportunities to create more affordable space for artistic production, including live-work and studio spaces, public cultural facilities, and affordable performance space. Remove barriers to reusing vacant or underutilized commercial space for this purpose.*

Program AC-1.9E: Volunteers. *Provide opportunities for volunteers in art, cultural, and literary events.*

Policy AC-1.10: Funding

Establish a broad range of public and private funding sources to support arts and cultural programs and activities.

Program AC-1.10A: Non-Profit, Private and Community Efforts. *Support the efforts of non-profit, private, and community organizations to apply for grants, raise funds, develop arts endowments, and promote community and business investment in art, cultural, and literary activities. This support could include funding, volunteers, staffing, coordination, providing space and materials, and similar collaborative efforts.*

Program AC-1.10B: New Funding Sources. *Explore potential new funding sources or funding relief mechanisms such as set-asides from transient occupancy taxes, sales taxes, or parking revenues; tax credits and property tax abatements; and corporate and foundation support.*

ECONOMIC VITALITY ELEMENT

Goal EV-1: A Healthy and Resilient Economy

Maintain a healthy and resilient local economy that attracts investment, creates jobs, and provides services for residents and visitors. *San Rafael will strive for an economy that adapts to changes in the business environment and remains productive over time. A diverse range of local businesses should provide the tax base and revenue needed to sustain City services and infrastructure. City policies will help local employers provide jobs and services to the community, meet new challenges as they arise, and ensure long-term business success.*

Policy EV-1.1: Quality of Life

Recognize the importance of a healthy economy to the quality of life, especially the ability to provide excellent schools, public safety services, public works, recreation, and other government services.

> ***Program EV-1.1A: Education About the Local Economy.*** *Continue to promote a business-friendly climate by educating decision-makers and the public about the inter-relationship of community life and economic vitality. This should include data on the local economy, including indicators of San Rafael's economic health, disseminated through the City newsletter, City website, social media, staff reports, and other means.*
>
> ***Program EV-1.1B: Economic and Fiscal Impacts.*** *Continue to evaluate economic and fiscal impacts in reports to the Planning Commission and City Council.*
>
> ***Program EV-1.1C: 2020 Pandemic Recovery.*** *Develop and implement an Economic Recovery Strategic Plan to address business and fiscal impacts created by the 2020 COVID-19 pandemic and develop measures to recover losses in City revenue.*

Policy EV-1.2: Relationship Building

Strengthen positive working relationships between the business community, neighborhoods, surrounding communities, and City government. Local businesses should be directly engaged in the design and evaluation of City economic development programs, recognizing their first-hand knowledge of economic conditions and trends.

> ***Program EV-1.2A: Chamber of Commerce and Business Improvement District.*** *Sustain partnerships with the Chamber of Commerce, the Downtown Business Improvement District, and other business organizations to improve the business climate and support local businesses.*
>
> ***Program EV-1.2B: Relationships with the Real Estate Community.*** *Engage the local commercial and residential real estate brokerage and development community in identifying and resolving barriers to doing business in San Rafael and keeping City staff informed of business trends and changes. This engagement should occur on a sustained basis, through regular communication and events.*
>
> ***Program EV-1.2C: Marin County Economic Forum.*** *Work with the Marin County Economic Forum to analyze business trends, improve the economic health of the region, and encourage businesses success in San Rafael.*
>
> ***Program EV-1.2D: Communications with Residents.*** *Regularly communicate with residents on economic issues. Maintain consistent and accessible contact through, for example, meetings with neighborhood associations, the City website, and the Citizens Advisory Committee.*

Program EV-1.2E: Minority Business Outreach. *Work with local minority-owned businesses, business organizations, and non-profits to encourage business success and support job training and career advancement opportunities.*

Program EV-1.2F: Housing Production Partnerships
Continue to foster strong working relationships with Marin Builders Association, the Marin Association of Realtors, and local non-profit housing developers to reinforce the development of workforce housing and housing for lower-income residents (see also Policies EV-1.7 and EV-1.8)

See Goal EDI-5 for additional policies and programs on increasing economic opportunities for lower income residents

Policy EV-1.3: Business Retention and Support

Create a favorable environment for business in San Rafael. Maintain ongoing communication with the business community and respond to needs and concerns as they arise.

Program EV-1.3A: Economic Development Strategy. *Develop and periodically update an Economic Development Strategy that provides guidance for maintaining economic health, fostering business success, responding to economic trends, and measuring the effectiveness of local programs*.

Program EV-1.3B: Development Opportunities. *Provide site location assistance to the real estate community and prospective businesses by maintaining an inventory of vacant and underutilized sites in the City, including vacant buildings. Inventory data should include allowable uses and intensity, site availability, and potential issues.*

Program EV-1.3C: Permit and Technical Assistance. *Provide advocacy services to assist local businesses in the permitting and development processes. Seek opportunities to innovate with technology to help improve service delivery. Simplify and streamline the permit process wherever feasible.*

Program EV-1.3D: Small Business Support. *Partner with the Marin Small Business Development Center and other organizations to provide small business advisory and training opportunities including business plan development, marketing and social media, human resources strategies, and access to capital/investment.*

Program EV-1.3E: Business Incubation*. Encourage business mentoring, education, and incubation programs that could be undertaken in cooperation with public, institutional and/or private sector partners (for example, Marin Builder's Exchange, College of Marin Career Education, etc.).*

Program EV-1.3F: Business Recognition. *Support recognition programs for exemplary businesses, such as annual awards programs.*

Policy EV-1.4: Business Attraction

Build on San Rafael's strengths, including its location, housing diversity, transportation system, weather, scenery, history, culture, and people, to attract business and private investment. The City will work with local partners to enhance and diversify the City's economy.

Program EV-1.4A: Industry Clusters and Supply Chains. *Identify desired industries and develop economic development programs to attract these types of businesses. Encourage supply chains for such industries and encourage business-to-business relationships.*

Policy EV-1.5: Monitoring

Regularly monitor the success and effectiveness of local economic development programs. This should include evaluating the impacts of City regulations and standards on businesses and considering changes that help businesses succeed. Local programs should be adjusted as needed based on measurable outcomes and feedback from the business community.

Policy EV-1.6: Marketing and Branding

Encourage and support marketing and branding efforts to promote San Rafael.

> ***Program EV-1.6A: Media Relations.*** *Generate media coverage that communicates a positive image of San Rafael and increases recognition of the city as a great place to do business. Implement social media strategies that reinforce this message.*
>
> ***Program EV-1.6B: Competitive Edge.*** *Market San Rafael's competitive edge relative to other Marin cities and mid-sized Bay Area cities. San Rafael's branding should highlight the City's reputation as the business, civic, cultural, dining, and entertainment hub of Marin County.*

See also Policy CDP 5-10 on historic preservation as an economic development strategy

Policy EV-1.7: Workforce Housing

Aggressively encourage creation and retention of housing that is affordable to low and moderate-income workers, especially those providing necessary local services, such as public safety, health care, elder care, and education.

> ***Program EV-1.7A: Benefits of Workforce Housing.*** *Work with local partners to educate residents on the benefits of workforce housing to the community.*
>
> ***Program EV-1.7B: Public Agency Partnerships****. Work with local school districts and other agencies to explore opportunities to build housing for teachers, public safety employees, and other essential service employees on public land.*

Policy EV-1.8: Workforce Development

Support workforce development programs that provide skilled labor for San Rafael businesses as well as jobs and career advancement opportunities for San Rafael residents.

> ***Program EV-1.8A. Workforce Development Programs.*** *Support the efforts of businesses, labor organizations, non-profits, schools, and the public sector to provide job training and placement services. Consider opportunities for these initiatives to support other City goals, such as reducing homelessness (e.g., Downtown Streets Team.), building housing (e.g., Education to Career Construction Program) and improving wildlife habitat (e.g., California Conservation Corps, etc.).*
>
> ***Program EV-1.8B. Mentoring Programs.*** *Continue to participate in mentoring, apprenticeship, and internship programs, including participation in programs run by other agencies and organizations.*
>
> ***Program EV-1.8C: English as a Second Language****. Continue to support community wide efforts to provide English as a Second Language (ESL) training, citizenship, and other educational programs for the San Rafael workforce.*
>
> *See Goal EDI-5 for additional policies and actions on workforce development*

Policy EV-1.9: Sustainable Business Practices

Promote sustainable business practices that reduce the consumption of non-renewable resources and support the City's climate action goals.

> ***Program EV-1.9A: Green Economy.*** *Support the creation of environmentally beneficial jobs and businesses.*
>
> ***Program EV-1.9B: Green Business Practices****. Coordinate with Marin County, environmental organizations and the Chamber of Commerce to promote greener business practices and participation in the County's Green Business Program.*
>
> ***Program EV-1.9C: CCAP Implementation.*** *Work with local business to help achieve the goals of the 2030 Climate Change Action Plan (CCAP), including a shift toward renewable energy, reduced waste, increased composting, and low-carbon transportation. The potential costs, as well as the potential savings or other benefits, of CCAP measures on businesses should be important considerations as programs are implemented.*

Policy EV-1.10: Economic Resilience

Encourage economic resilience and improved ability to function during and after disasters and other emergencies. The City should also support resilience in the face of disruptive economic events and longer-term economic change.

> ***Program EV-1.10A: Business Engagement.*** *Actively engage the business community in disaster preparedness planning and recovery.*
>
> ***Program EV-1.10B: Education on State Regulations.*** *Provide information and outreach to businesses on new (and potential) State mandates and regulations, particularly those related to climate change. Explore ways to mitigate cost impacts based on consultation with local businesses and organizations.*
>
> *See the Community Services Element for policies and programs on microgrids and electrical reliability, and the Safety Element for policies on resilience to climate change and sea level rise.*

Policy EV-1.11: Innovation

Ensure that City policies, regulations, and programs are responsive to business trends and best practices in economic development and support innovation.

> ***Program EV-1.11A: Innovation Working Group.*** *Convene an economic development and innovation working group to identify new business opportunities and prospects for innovation and diversification.*

Goal EV-2: A Diverse and Balanced Business Mix

Sustain a diverse and balanced local economy that provides a wide range of goods, services, and opportunities. *San Rafael is widely recognized as Marin's "go to" city for shopping, dining, entertainment, and an array of day-to-day and specialized services. The city is home to major education, health care, cultural, and government facilities. It provides a full spectrum of commercial and industrial districts that meet the needs of many types of businesses. Economic diversity is part of San Rafael's heritage and should be part of its future. This will require foresight and action, particularly to recover from the devastating impacts of the 2020 pandemic and respond to declining demand for "brick and mortar" retail space.*

Policy EV-2.1: Retail Sector

Respond to changes in the retail sector so that San Rafael's commercial areas can adapt and remain an integral part of the City's economy. The City should support owners of vacant retail space in efforts to transition to new uses where retail is no longer viable, and work proactively to avoid potential net losses in tax revenues.

> ***Program EV-2.1A: Retail Evaluations.*** *Periodically evaluate the performance of the City's retailers. Use the data to help improve retail performance or assist centers with attracting other compatible uses.*
>
> *See the Land Use Element for additional policies and programs on neighborhood shopping centers and retailing.*

Policy EV-2.2: Promoting Local Purchasing

Encourage purchasing of San Rafael goods and services by residents, workers, businesses and City government in order to cycle dollars back into the San Rafael economy, support local businesses, and generate revenue for the City.

> ***Program EV-2.2A: Local Shopping Campaigns.*** *Support campaigns to "Shop Locally" and raise awareness about the benefits of supporting local businesses rather than purchasing on-line.*
>
> ***Program EV-2.2B: Event Promotion.*** *Continue to promote events that bring people to Downtown, Northgate and other community commercial centers to support local businesses.*
>
> ***Program EV-2.2C: Local Preference.*** *Where other factors (such as price) are equal, the City should give preference to purchasing goods and services from both local vendors and minority-owned businesses.*
>
> ***Program EV-2.2D: Day and Evening Visitors.*** *In the Downtown and North San Rafael Town Center areas, attract a variety of retail businesses to encourage patronage during both day and evening hours.*

Policy EV-2.3: Industrial Land Supply

Preserve the City's supply of industrial land.

> ***Program EV-2.3A: Industrial Zoning****. Maintain zoning for industrial areas to prevent a loss of industrial businesses (see also Program LU-2.4A on industrial zoning).*

Policy EV-2.4: Office and Technology Market

Maintain San Rafael's position as a regional office center, providing space for a diverse range of businesses as well as a source of revenue and local job opportunities. Encourage opportunities for new office development in transit-served locations such as the Downtown Transit Center area.

> ***Program EV-2.4A: Responding to Workplace Trends.*** *Work with local office building owners, managers and tenants to respond to changing workplace design requirements (including those related to public health) and to adapt to trends such as increased telecommuting and co-working,*

Policy EV-2.5: Tourism and Hospitality

Recognize and support tourism and hospitality as a significant contributor to San Rafael's economy.

> ***Program EV-2.5A: Tourism Strategies.*** *Explore strategies to enhance local tourism, improve hotel and conference facilities, attract destination restaurants and stores, and support tourism*

programs of the Chamber, Downtown Business Improvement District, and Marin County Visitors Bureau.

Program EV-2.5B: Downtown Arts District. *Support the Downtown Cultural Arts District through marketing, programs, and partnerships (see also Program AC-1.8A).*

Program EV-2.5C: Special Events. *Encourage special events and festivals that draw visitors to San Rafael, showcase its vibrant arts and cultural scene, and have net positive effects on local businesses and City revenues. Work with local retailers to ensure they can remain open and easily accessible when these events take place (see also Policies AC-1.7 and LU-3.11).*

Program EV-2.5D: Transient Occupancy Taxes (TOT). *Explore ways to increase economic development program funding through TOT revenues.*

See the Land Use Element for policies on home occupations. See the Mobility Element for policies on telecommuting, flextime, and other strategies to reduce peak hour commuting. See the Arts and Culture Element for additional discussion of the arts and entertainment sector.

Policy EV-2.6: Health Care

Expand the health care sector to meet the growing needs of an aging population, ensure access to health services for all residents, and improve readiness in the event of future public health emergencies.

See Goal EDI-2 for additional policies and programs on access to health care and medical facilities.

Policy EV-2.7: Government and Education

Sustain San Rafael's role as a countywide government and education center.

Program EV-2.7A: Civic Center Modernization. *Support County efforts to update the Marin County Civic Center and expand its capacity to host conferences and special events.*

Program EV-2.7B: Higher Education Partnerships*. Cultivate relationships with Dominican University and other Bay Area institutions of higher learning to facilitate local economic development. Consider opportunities for Dominican to increase its visibility in the community, including occupying underutilized space in Downtown or Northgate Town Center buildings.*

Goal EV-3: Distinctive Business Areas

Sustain vital, attractive business areas, each with a distinctive character and emphasis. *Downtown, Northgate, West Francisco, East San Rafael, and the Miracle Mile each play a unique role in the City's economy and maintain the community's position as a full-service city. These districts are complemented by attractive, convenient neighborhood centers that provide local services and gathering places.*

Policy EV-3.1: Business Areas

Strengthen the positive qualities of each business area in San Rafael to create a stronger sense of place and brand identity.

Program EV-3.1A: Zoning Regulations. *Ensure that zoning and development regulations for each business area support their success and contribution to the City's economy.*

Program EV-3.1B: Quality of Life Programs. *Implement and support programs to improve the safety, security, cleanliness, and convenience of San Rafael's business districts so that they are places where customers want to shop, dine, and visit. Providing a comfortable, enjoyable experience for residents, workers, and visitors is an important part of remaining competitive.*

Policy EV-3.2: Revitalization

Support and encourage redevelopment and upgrading of commercial and industrial properties while retaining economic and business diversity. The City should work with property owners, businesses, and business organizations to address issues such as parking, beautification and landscaping, streetscape improvements, and circulation and access.

Program EV-3.2A: Business Improvement Districts. *Support the use of BIDs to improve services to business districts and provide a funding source for localized improvements.*

Program EV-3.2B: Public Private Partnerships*. Encourage public/private partnerships as one means of revitalizing deteriorated and underdeveloped area (see also Policy CSI-5.6).*

Program EV-3.2C: Business Assistance Programs. *Explore the feasibility of programs to assist local businesses with property improvements, such as landscaping, signage, façade improvements, and design assistance.*

Policy EV-3.3: Economically Productive Use of Land

Encourage the use of the City's commercial and industrial land supply in a way that creates positive fiscal impacts, economic opportunities for local businesses and property owners, employment growth, and services for San Rafael residents.

Policy EV-3.4: Water-Dependent Businesses

Ensure that commercial properties along San Rafael's shoreline, including the San Rafael Creek/ Canal, leverage their waterfront locations, The City supports the continued of these sites for water-dependent activities such as boat sales, boat repair, marinas, and water-oriented restaurants.

See the Mobility Element for policies on water transportation, including water taxis. See the Conservation and Climate Change Element for policies on boating and water quality. See also Policy CSI-4.11 on canal dredging.

Policy EV-3.5: Business Infrastructure

Support investment in telecommunications infrastructure so that San Rafael's business districts remain economically competitive and can meet changing business needs and technology requirements.

See the Infrastructure Element for policies on fiber optics communication and similar services

Policy EV-3.6: Mutual Support Between Business Areas and Adjacent Neighborhoods

Promote productive relationships between residential neighborhoods and adjoining business areas.

Program EV-3.6A: Business/Neighbor Collaboration*. Seek innovative ways for businesses and their residential neighbors to collaboratively solve mutual concerns. Encourage conflict resolution between business and neighbors.*

Policy EV-3.7: Business Access

Improve access to and from the East San Rafael business district, including freeway and ramp improvements, local thoroughfare improvements, improved transit service and access to Downtown, and safer bicycle and pedestrian routes.

See the Neighborhoods Element for additional policies and programs on East San Rafael.

Policy EV-3.8: Creative Infill

Encourage creative infill development and redevelopment that maximizes existing resources and makes the best use of limited available space. Expedite the development review process by establishing clear expectations for design, and effectively involving the community.

> ***Program EV-3.8C: Pre-Submittal Process****. Improve the efficiency and speed of the development review process by revisiting neighborhood notification and meeting procedures and updating the pre-submittal process to identify initial concerns and encourage higher quality applications.*

EQUITY, DIVERSITY, AND INCLUSION ELEMENT

Goal EDI-1: Authentic and Inclusive Public Participation

Provide for the meaningful involvement of all residents in local governance and policy making, regardless of their income, language, ethnicity, age, or family status. *Active, authentic, and inclusive public participation is essential to becoming a more just and equitable city. The City of San Rafael strives for clarity and transparency in city planning processes and promotes opportunities for effective public participation. It partners with residents and community-based organizations to develop, implement, and evaluate engagement strategies that meet the needs of each community. It promotes shared leadership and decision-making to empower communities that have historically been under-represented in public processes. All residents are invited and enabled to participate in government in a meaningful way.*

Policy EDI-1.1: Leadership in Equity and Inclusion

Provide countywide and regional leadership in the incorporation of equity and inclusion into local decision-making.

> ***Program EDI-1.1A: Training and Education.*** *Provide training and education on issues of equity and inclusion for City staff, Boards and Commissions, and advisory groups. This should include information about best practices in inclusive civic leadership.*
>
> ***Program EDI-1.1B: Equity Plan.*** *Prepare a citywide Equity Strategic Plan or similar document that provides guidance on ways to incorporate equity into City practices and procedures. Metrics to measure progress, including goals for public participation, should be developed and monitored after Plan adoption.*

Policy EDI-1.2: Broad-Based Involvement

Partner with community-based organizations to engage populations whose voices have been under-represented in public processes because of language, mobility, age, citizenship, economic, and other barriers. Engagement should support self-determination and empowerment, as well as input on projects and plans.

> ***Program EDI-1.2A: Community Stakeholders.*** *Actively provide engagement opportunities for all residents through outreach programs specifically aimed at those who are under-represented in public processes, such as immigrant communities, people of color, youth, and younger families. Use creative and community-driven methods for reaching under-represented groups, such as markets, churches, home visits, school events, cultural activities, and informal social networks.*
>
> ***Program EDI-1.2B: San Rafael Website.*** *Use the City's website and social media presence to improve participation in City government and increase access to City information and documents.*
>
> ***Program EDI-1.2C: Scheduling of Meetings.*** *Schedule public meetings and workshops at times and locations convenient to community members. Where feasible, provide child care, food, and other services to make meeting attendance easier.*
>
> ***Program EDI-1.2D: District Elections.*** *Optimize the opportunity for district-based elections to increase resident participation in local government, particularly among Latino residents (for example, by considering Commission appointments by District).*
>
> ***Program EDI-1.2E: CEAP Update.*** *Update the 2015 San Rafael Community Engagement Action Plan (CEAP) to implement General Plan 2040 EDI policies and programs.*

Policy EDI-1.3: Effective and Equitable Communication

Emphasize effective two-way communication between City Hall and the community at large, including multilingual and culturally appropriate messaging, and engagement formats that reach all segments of the community.

Program EDI-1.3A: Removing Language Barriers. *Ensure that Latino and other non-English-speaking populations may actively participate in local decision-making through such methods as bilingual notices, translation of meeting materials, the use of accessible (non-jargon) and culturally competent language, Spanish language meetings, new platforms for commenting (such as Facebook and Zoom), and having interpreters at public meetings.*

Program EDI-1.3B: Surveys. *Regularly use multilingual, culturally appropriate surveys, focus groups, and other outreach methods to solicit input from under-represented communities. When funding is available, outsource survey work to community organizations with engagement grants or stipends for participation (see also Program CSI-5.3B and PROS-2.2B on surveys).*

Program EDI-1.3C: Regularly Scheduled Community Meetings. *Convene regularly scheduled meetings with businesses and residents in lower income areas to address local priorities, report out on program implementation, and support shared leadership and decision-making.*

Policy EDI-1.4: Supporting Community-Based Organizations

Support community-based organizations and advocacy groups in their efforts to communicate effectively with the City and other public agencies. At the same time, enhance the City's capacity to improve listening, accountability, and reporting back to these organizations, and to the community at large.

Program EDI-1.4A: Advocacy Programs. *Support training, education, and advocacy programs by local institutions and social service providers to address the issues facing San Rafael's lower income, immigrant, and older adult populations.*

Program EDI-1.4B: Collaborations. *Collaborate with local community-based organizations to develop and implement strategies to engage under-represented groups, reduce community disparities, and address critical issues.*

Policy EDI-1.5: Advisory Committees

Use boards, commissions, task forces, and committees to assist City staff and the City Council in decision-making processes. Such groups should reflect San Rafael's demographics and be representative of all segments of the community.

Program EDI-1.5A: Board and Commission Diversity. *Monitor the composition of City Boards and Commissions, making efforts to provide representation that mirrors the City. When filling vacancies, focus recruitment and outreach efforts on under-represented populations.*

Program EDI-1.5B: Public Input. *Encourage public input at Board, Commission, and Committee meetings. Clearly identify issues, actions, and ways to comment, and provide information early enough to allow meaningful participation.*

Policy EDI-1.6: Youth in Government

Encourage and support the engagement of youth and young adults in government, particularly on issues that directly affect them such as youth services, education, mobility, and climate change.

Program EDI-1.6A: Youth-Focused Outreach. *Work with local school districts, schools, youth and student groups, colleges, universities, and community-based organizations to increase youth involvement in local government and public processes. This could include school "clubs" organized around topics of interest. Youth engagement should be inclusive and reflective of San Rafael's demographics (see also Program EDI-5.2A on "Buddy" programs).*

Goal EDI-2: Healthy Communities and Environmental Justice

Support public health and wellness through community design in all parts of the city. *San Rafael's development pattern and transportation system should support the fitness of its residents. Physical activity such as walking and cycling can reduce rates of obesity, heart disease, diabetes, and other chronic ailments. Land use decisions should avoid further compounding health risks in disadvantaged communities, and should reduce exposure to unhealthy air, high levels of noise, contaminated soil, smoke, and odors. San Rafael will promote a safe environment for all residents and ensure that people in every part of the city can lead healthy, active lives.*

Policy EDI-2.1: Neighborhood Design for Active Living

Improve the design of San Rafael's neighborhoods to promote physical activity for all residents, including opportunities for safe walking and cycling, and walkable access to goods and services.

Program EDI-2.1A: Pedestrian and Bicycle Improvements. *Implement pedestrian and bicycle improvements, as described in the General Plan Land Use and Mobility Elements and the San Rafael Bicycle and Pedestrian Master Plan. This should include improved safety features, streetscape and landscape improvements, and other improvements that make it safer, easier, and more comfortable to be physically active in San Rafael, particularly in neighborhoods with less access to these features today.*

Program EDI-2.1B: Public Health as an Evaluation Metric. *Consider public health data such as rates of asthma, heart disease, and obesity when prioritizing capital improvements such as bike lanes, new parks, and sidewalk improvements.*

See also Goals M-5 and M-6 on connected, pedestrian-friendly streets

Policy EDI-2.2: Safe Space for Physical Activity

Provide safe physical spaces for children and families to play and be physically active in all neighborhoods, particularly in the Canal area and other neighborhoods where many homes lack outdoor living space.

Program EDI-2.2A: Increasing Usable Public Space. *Pursue opportunities for additional programmed public outdoor space, with a priority on higher density neighborhoods. Consider the use of City-owned vacant lots or rights-of-way as improved open space.*

See also policies under Goal PROS-1 on park improvements

Policy EDI-2.3: Community Health

Increase community awareness about best practices for maintaining physical and mental health. Incorporate such practices in City-sponsored activities and programs (see also Policy PROS-2.5).

Program EDI-2.3A: HEAL Campaign. *Participate in the Marin Countywide Healthy Eating Active Living (HEAL) campaign, supporting actions that transform the physical environment to improve health, well-being, and physical activity. (text box on HEAL?)*

Program EDI-2.3B: Health Fairs. *Encourage multilingual community health fairs and other events that raise awareness of public health among all residents. Demonstrate best practices for public health and wellness at City-sponsored activities, such as serving healthy foods and encouraging walking and bicycling to the event.*

Program EDI-2.3C: Municipal Code Review*. Periodically evaluate City codes and ordinances for their impact on health, including provisions for tobacco, vaping, and smoke-free multi-family housing; standards for indoor air quality; and HVAC systems able to sustain safe living conditions during wildfires, power outages, and extreme weather events.*

Policy EDI-2.4: Access to Health Care

Promote access to health care for all residents to safeguard individual and community well-being.

Program EDI-2.4A: Local Health Care Facilities. *Support the development of easily accessed health care and medical facilities in the City.*

Policy EDI-2.5: Environmental Justice

Ensure that land use and transportation decisions do not create disparate environmental health conditions, such as air pollution and exposure to hazardous materials, for lower income residents and other vulnerable populations. Work to reduce or eliminate such hazards where they currently exist.

Program EDI-2.5A: Reducing Exposure to Hazards. *As appropriate, utilize conditional use permit requirements for businesses adjacent to residential neighborhoods to reduce resident exposure to noise, odor, smoke, vibration, and other potentially harmful impacts. Work with business owners to encourage responsiveness when these issues arise.*

Program EDI-2.5B: Reducing Indoor Air Pollution. *Support the distribution of bilingual information on indoor air pollution hazards to vulnerable populations, including lower income renters. Respond to complaints about smoke and odors in multi-family projects and facilitate remediation.*

Program EDI-2.5C: Environmental Hazard Data. *Maintain data on environmental hazards, such as soil and groundwater contamination and the vulnerability of the population to such hazards, using sources such as Cal Enviroscreen.*

See the Safety Element for policies and programs to (a) require health risk assessments for new development near freeways and (b) reduce exposure to hazardous materials, including contaminated sites and new uses handling hazardous substances. See the Conservation and Climate Change Element for policies to improve air quality, and the Mobility Element for policies to encourage cleaner fuel vehicles.

Policy EDI-2.6: Neighborhood Greening

Encourage the greening of San Rafael's multi-family districts, including tree planting, landscaping, and other improvements that enhance aesthetics, reduce pollutants, and improve climate resilience.

Program EDI-2.6A: Greening Priorities. *Prioritize City-sponsored urban greening and tree planting projects in residential areas that currently have lower rates of tree cover, higher residential densities, and limited access to open space (for example, the Canal area and Montecito).*

Policy EDI-2.7: Responsible Retailing

Encourage responsible retailing of products with the potential to have adverse health impacts, such as tobacco, vaping, and alcohol. Enforce laws that prohibit the sale or provision of such products to minors. Avoid their overconcentration in areas with large numbers of K-12 students.

See the Economic Vitality Element for policies and programs on neighborhood business attraction and retention

Policy EDI-2.8: Food Access

Expand access to healthy food and nutritional choices in San Rafael through conveniently located grocery stores, small markets, farmers markets, and community gardens, particularly in lower income areas where existing fresh food options are limited.

> ***Program EDI-.8A: Incentives.*** *Explore incentives for small local markets to offer healthier food options for nearby residents. [text box on Canal Community Garden]*

Policy EDI-2.9: Urban Agriculture

Promote and support small-scale, neighborhood-based, food production, urban agriculture, and reliable food supply lines from regional growers.

> ***Program EDI-2.9A: Obstacles to Food Production.*** *Review, and revise as needed, San Rafael's zoning regulations and codes to identify and remove barriers to urban gardening and small-scale food production in residential neighborhoods.*

Policy EDI-2.10: Resiliency Planning

Improve resiliency planning for climate change, public health emergencies, and other community stressors among non-English speaking and lower-income populations. Increase awareness of sea level rise and flooding risks in the Canal area and in other vulnerable areas, as well as the importance of adaptation measures.

Goal EDI-3: Housing Stability

Improve housing stability for all San Rafael residents, particularly those with low or very low incomes. *Residents should live without fear of being displaced by high rents and a shortage of affordable housing options. The City will work to reduce overcrowded and substandard living conditions and provide additional housing choices for people of all incomes. It will also work with landlords and rental property owners to develop fair, workable solutions.*

Policy EDI-3.1: Preventing Displacement

Prevent the displacement of lower income residents from their homes due to rising costs, evictions without cause, and other economic factors that make it difficult for people to stay in San Rafael.

> ***Program EDI-3.1A: Anti-Displacement Strategies.*** *Evaluate anti-displacement strategies in future plans or programs that could result in the direct removal of affordable housing units, the displacement of tenants, or economic hardships due to rapid rent increases.*

> ***Program EDI-3.1B: Renter Protection Measures.*** *Continue to explore and promote measures to protect San Rafael renters and facilitate positive communication between landlords and tenants.*

Program EDI-3.1C: Climate-Related Displacement. *Consider measures to address the potential for loss or displacement of affordable or lower cost housing in the city's climate change adaptation planning.*

Policy EDI-3.2: Affordable Housing Development

Encourage the development of affordable rental housing to meet the needs of all San Rafael households.

See also Housing Element H-6, H-14, H-15, H-17, and H-18 for additional policies and programs supporting affordable housing development, including Program H-17c on fee reductions and H-17d on streamlined review.

Policy EDI-3.3: Acquisition and Rehabilitation

Support efforts by local community-based organizations and other housing organizations to acquire private market rate apartment complexes and convert them to affordable housing using state and federal tax credit programs or create community land trusts to purchase existing housing in order to maintain it as affordable .

See the San Rafael Housing Element for program recommendations to facilitate implementation of Policies 3.2 and 3.3.

Policy EDI-3.4: Healthy Homes

Promote and ensure safe and sanitary housing and healthy living conditions for all residents, particularly lower income renters.

Program EDI-3.4A: Healthy Homes. *Support programs and regulations that support healthier homes, including the abatement of toxic hazards such as lead and mold, the use of non-toxic materials and finishes, and design features that improve ventilation and indoor air quality.*

Policy EDI-3.5: Property Maintenance

Improve property maintenance and housing conditions in all parts of the city and encourage corrective rehabilitation of housing that is substandard or poses a hazard to its occupants.

Program EDI-3.5A: Code Enforcement. *Provide effective code enforcement efforts in all neighborhoods to abate unsafe or unsanitary conditions. Ensure that the abatement of violations does not increase housing cost burdens or result in displacement of lower-income households.*

Program EDI-3.5B: Rental Inspections. *Continue the Periodic Housing Inspection Program and Residential Building Record (RBR) inspections to ensure the safety and habitability of all housing units.*

Policy EDI-3.6: Reducing Overcrowding

Work with local advocacy groups to evaluate the housing circumstances of immigrant and refugee populations in San Rafael, including overcrowding. Determine appropriate implementation measures to reduce overcrowding without displacement.

Program EDI-3.6A: Incentives for Family Housing. *Consider density bonuses and other incentives for three-bedroom affordable rental units in new construction to meet the need for housing suitable for larger families and extended households.*

Policy EDI-3.7: Emergency Housing Services

Support agencies and organizations that provide emergency shelter, housing, and other services related to the needs of vulnerable communities, including temporary housing for displaced persons and persons experiencing homelessness.

> ***Program EDI-3.7A: Temporary Housing for At Risk Groups.*** *Work with community-based organizations to develop and support temporary housing solutions for lower-income immigrants, older adults, and other at-risk groups during and after an emergency.*

Goal EDI-4: Equitable Service Delivery

Improve self-sufficiency and empowerment among lower income and immigrant communities through equitable access to education, health care, public safety, transportation, and social services. *The City supports the equitable distribution of City facilities and delivery of City services and prioritizes improvements in communities with the greatest needs.*

Policy EDI-4.1: Prioritizing Public Investment in Disadvantaged Communities

Prioritize public investment in capital projects and public facilities that meet the needs of disadvantaged communities.

> ***Program EDI-4.1A: Equity Metrics.*** *Use benchmarks and indicators such as household income, the presence of children and older adults, and past investment patterns, to inform decisions about the location of future public investments.*

Policy EDI-4.2: Equitable Maintenance of Streets and Public Space

Ensure that street cleaning, litter removal, abatement of illegal dumping, and the repair of roads, sidewalks, streetlights and public facilities, is performed equitably across the city. Responses to reports of nuisances and violations should be performed without regard to income or tenure.

> ***Program EDI-4.2A: Nuisance Reporting Systems.*** *Support programs that allow residents and businesses to easily report incidences of illegal dumping, roadside garbage and litter, vandalism, graffiti, noise, smoke and fumes, and other nuisances. Maintain data on calls, responses, and follow-up activities.*

> ***Program EDI-4.2B: Security and Safety Improvements.*** *Pursue public safety improvements, including street lighting, security cameras, better wayfinding signage, and improved sidewalk conditions, with a focus on neighborhoods with higher levels of need and fewer available resources.*

Policy EDI-4.3: Public Safety in Disadvantaged Communities

Build positive relationships between law enforcement, residents, and businesses in the Canal and other disadvantaged communities to create a stronger sense of trust and confidence. Ensure that the safety concerns of disadvantaged communities and persons experiencing homelessness are heard and recognized by law enforcement, with a focus on serious crimes rather than minor infractions.

> ***Program EDI-4.3A: Neighborhood Safety Partnerships.*** *Encourage partnerships between lower-income residents and local police to address law enforcement concerns, including organized events such as neighborhood walks and police "walking the beat" to create personal relationships and learn about community issues.*

Policy EDI-4.4: Public Health Equity

Promote community health services, programs, and partnerships that improve outcomes for economically disadvantaged residents, including better access to medical, mental health, and social services.

> ***Program EDI-4.4A: Mobile Health Care.*** *Facilitate the use of public buildings such as libraries and community centersfor "pop up" health services and other activities that promote wellness.*

Policy EDI-4.5: Food Security

Improve food security and nutrition, particularly among lower income and frail elderly residents.

> ***Program EDI-4.5A: Food Assistance Programs.*** *Support resident access to food assistance programs, including local food banks and food stamp programs. Encourage the acceptance of food subsidy vouchers at retail food outlets throughout San Rafael.*

> ***Program EDI-4.5B: Reduced Cost Meals.*** *Encourage free and reduced cost meal programs for those with the greatest needs, including low income children, seniors, and persons experiencing homelessness.*

Policy EDI-4.6: A Compassionate City

Support organizations and service providers that help those in need in San Rafael. Non-profit and public entities providing housing, transportation, health care, and other social services to lower income clients and older adults are valued community partners and should remain an essential part of San Rafael's "safety net."

> ***Program EDI-4.6A: Connecting Social Service Providers.*** *Increase awareness of social service programs by improving communication between residents and service providers, facilitating communication among the service providers themselves, and providing more opportunity for interaction between residents and City leaders.*

> ***Program EDI-4.6B: Collaborative Service Model.*** *Encourage and support collaborative efforts to address local health care and social service needs, including partnerships with community-based organizations and service providers, partnerships with the County of Marin and other Marin cities, and interdepartmental efforts within the City of San Rafael.*

Policy EDI-4.7: Transportation Improvements

Integrate equity into San Rafael's transportation planning and operations. Work with Caltrans, TAM, and local transit agencies to ensure that their services and improvements recognize the needs of households with more limited travel options and focus on increasing mobility for all residents.

> ***Program EDI-4.7A: Transit Improvements.*** *Work with Marin Transit, SMART, and GGBHTD to collect and analyze data on the workplace location of San Rafael's transit-dependent population so that transit routes and schedules are responsive to needs, and optimally serve those without cars.*

> ***Program EDI-4.7B: Bicycle and Pedestrian Improvements.*** *Prioritize pedestrian and bicycle improvements in areas where the concentration of pedestrians and bicycles is highest, and where residents have fewer resources and options to travel. Improve access to bicycles, helmets, and related equipment for lower income families.*

See the Mobility Element for additional guidance on this topic. See Program NH-3.15A on parking management in the Canal.

Policy EDI-4.8: Community Benefits

Support community benefit programs in which new projects receive development bonuses in exchange for providing facilities and amenities that benefit underserved communities, such as affordable housing, childcare, and recreation facilities *(see also Policy LU-1.14 and LI-1.18 on bonuses for projects incorporating community benefits).*

Goal EDI-5: Access to Education and Economic Opportunity

Reduce barriers to education and economic mobility for all San Rafael residents. *The City collaborates with private, non-profit, and other public partners to support quality education, affordable childcare and after school programming, vocational training and career advancement, and programs to help residents overcome barriers to employment and economic stability. Every San Rafael resident should have the chance to learn, grow, prosper, and succeed.*

Policy EDI-5.1: Child Care and Early Childhood Development

Support expanded capacity for affordable childcare and early childhood development centers in San Rafael, including City-sponsored programs (see also Policy PROS 2-4).

> ***Program EDI-5.1A: Business Partnerships.*** *Support partnerships with local employers to make child care more affordable and accessible for low-wage workers. Quantify the potential benefits to employers to help make these services available.*

Policy EDI-5.2: After School Activities

Provide safe, affordable after-school opportunities for children and teens, along with information on programs for members of the community who may be unaware of these opportunities. Work with the community to identify gaps and unmet needs, such as extended hours and weekend activities, and to increase access to services.

> ***Program EDI-5.2A: Buddy Programs.*** *Collaborate with the school districts to develop "buddy" or "host" programs enabling San Rafael families to provide social, cultural, and academic support to English learners and new students from other countries.*

> ***Program EDI-5.2B: Cultural Competency.*** *Ensure that the City uses culturally appropriate strategies and messaging when providing information to students and parents regarding extra-curricular activities.*

Policy EDI-5.3: Reducing Academic Achievement Gaps

Support local schools in their commitment to equity among students from different socio-economic groups. Encourage programs and initiatives to assist students with special educational needs or household circumstances that create barriers to learning.

> ***Program EDI-5.3A: Financial Aid.*** *Raise student and family awareness of opportunities for grants, scholarships, internships, and programs that provide financial assistance for education and career development.*

Policy EDI-5.4: Employment Readiness

Create strong partnerships between schools, community-based organizations, and the business community so that San Rafael students and adults are prepared for jobs in the local and regional economy and can access career resources in a variety of fields. (text box on MCOE School to career partnership; potentially add Downtown Streets Team employment program)

Program EDI-5.4A: Youth Employment. *Encourage youth training and employment programs, partnerships with the private sector and community-based organizations, and similar measures to improve career opportunities for younger San Rafael residents.*

See also Policy EV-1.8 on workforce development

Policy EDI-5.5: Career Ladders

Support investment in programs and services that create career ladders for lower income workers and support advancement to better paying jobs and greater financial stability. Encourage local employers to coach and mentor students and young professionals seeking career advancement.

See the Economic Vitality Element for relevant programs

Policy EDI-5.6: Local Workforce Retention

Recognize the economic contribution of San Rafael's low- and moderate-income workforce to the local and regional economies, and to providing essential services in times of crisis. Preserve existing jobs and ensure that the City continues to provide pathways to employment for persons with a variety of skill and education levels.

Program 5.6A: Measuring Workforce Contributions*. Develop data to quantify the contribution of San Rafael's low- and moderate-income workforce to the local and regional economies. Use this data to develop responsive economic development policies and programs and increase the safety net for critical low-income workers.*

See the Economic Vitality Element for Workforce Development and Workforce Housing policies and programs

Policy EDI-5.7: Small Business Support

Create a supportive environment for small businesses in San Rafael. Effectively respond to small business concerns related to crime, infrastructure, litter, parking, loitering, and similar issues.

Program EDI-5.7A: Business Assistance. *Explore opportunities to assist San Rafael's small businesses and entrepreneurs, including minority-owned businesses. This should include partnerships with the Hispanic Chamber of Commerce and similar organizations.*

Program EDI-5.7B: Hiring Incentives. *Support incentives for contractors and builders to hire local workers, with a focus on increasing business opportunities for lower-income tradespersons.*

See also Program EV-2.2A on "shop local" campaigns and EV-2.2C on local purchasing preferences

Policy EDI-5.8: State and Federal Programs

Identify areas in San Rafael that are eligible for state and federal funding or other financial benefits due to demographic and economic conditions. Pursue grants and participate in programs that address these conditions and improve economic opportunity for local residents and businesses.

Program EDI-5.8A: Opportunity Zone. *Continue to evaluate the potential benefits of the designation of the Core Canal Census Tract as an "opportunity zone" by the State of California, including possible funding for transit, affordable housing, and capital improvements. Activities related to the Opportunity Zone designation should include specific provisions to minimize the displacement of residents and businesses.*

Policy EDI-5.9: Affordable Commercial Space

Encourage below market rent space for community-based organizations , supportive service providers, and organizations that assist disadvantaged populations. Avoid the displacement of these businesses due to rising rents.

> ***Program EDI-5.9A: Cooperatives.*** *Encourage cooperate ownership of assets such as housing, vacant land, local energy systems, and incubator business space as a way to reduce business operating costs.*
>
> ***Program EDI-5.9B: Community Benefit.*** *Recognize below market space for community-based organizations as a community benefit that triggers eligibility for density or height bonuses in new development,*

Policy EDI-5.10: Bridging the Digital Divide

Encourage future advances in technology and new technology infrastructure to be equitably distributed so that households of all incomes may benefit. Implement strategies to make technology resources more affordable and accessible to lower income households.

See also Policy CSI-4.16 on technology infrastructure

> ***Program EDI-5.10A: Access to On-Line Learning and Work.*** *Support efforts to provide all students with access to on-line learning and the capacity to work remotely. Work with local service providers to improve access for lower income households, especially households with children. [text box on digital divide in Canal]*

Goal EDI-6: An Age-Friendly Community

Enhance the quality of life for older adults in San Rafael. *As an inclusive community, San Rafael is a city that works for everyone, regardless of age or ability. The City provides access to services and resources that make it easier for older adults to stay active and connected. It plans and provides appropriately for older adults who need assistance.*

Policy EDI-6.1: Planning for an Aging Population

Proactively address the needs of San Rafael's aging population through collaboration, planning, and programs. Monitor trends and data so that services are responsive to needs.

> ***Program EDI-6.1A: Age Friendly Plan***. *Prepare an Age-Friendly Strategic Plan for San Rafael that identifies specific and culturally responsive actions to ensure that older adults may thrive in the community. Periodically monitor progress on Plan implementation, consistent with WHO Age-Friendly Global Network guidelines.*

Policy EDI-6.2: Aging in Community

Improve opportunities for older adults to age in place and continue living independently in their San Rafael homes. This should include recognition of the importance of in-home support services and caregivers, At the same time, provide more options for those seeking to "age in community" and relocate to suitable housing in the city that includes supportive services, smaller units, and access for persons with mobility limitations. This includes support services and facilities for those suffering from dementia-related illnesses and those who have become homeless due to medical or mental health conditions,

> ***Program EDI-6.2A: Aging in Place.*** *Continue to support programs and services that assist older adults with home modifications that facilitate aging in place. Support home sharing programs that pair empty nesters with rental seekers.*

Program EDI-6.2B: Affordable Housing Options for Older Adults. *Encourage the construction of affordable senior housing, and accessory dwelling units that provide more affordable alternatives for older adults. Also, support programs that provide direct and indirect assistance for older renters.*

Policy EDI-6.3: Mobility for Older Adults

Maintain mobility options for San Rafael's older adults by providing safe streets and flexible, responsive public and private transportation services, including services specifically designed for those with mobility limitations.

Program EDI-6.3A: On-Demand Transportation Services. *Improve on-demand transportation options for older adults, including volunteer driver programs and programs pairing new student drivers with seniors.*

Program EDI-6.3B: Universal Access. *Incorporate principles of universal access in the design of public facilities, sidewalks, and outdoor spaces and buildings. Reduce risks associated with falling and improve lighting and sidewalk conditions in areas where hazards may exist.*

Policy EDI-6.4: Accessible Community Services

Provide a range of convenient and accessible services for San Rafael's older adults, including health and wellness, caregiving, recreation and fitness activities, age-friendly technology, and social services.

Program EDI-6.4A: Access to Resources. *Improve access to community programs and resources for older adults, including increased on-line services and technology training and partnerships with Marin County In-Home Supportive Services.*

Policy EDI-6.5: Disaster Preparedness

Ensure that the needs of older San Rafael residents are specifically considered in disaster preparedness planning, and that barriers and challenges are effectively addressed.

Program EDI-6.5A: Outreach and Education. *Engage older adults in focused disaster preparedness outreach and education, emergency and shelter-in-place drills, wildfire prevention programs, and evacuation plans. Focus on older adults with the greatest needs, including in-home support.*

See also Goal S-6 on emergency preparedness

Policy EDI-6.6: Social Connections

Strengthen social connections for older adults living alone by providing accessible community activities, programs that avoid loneliness and social isolation, and demonstrating respect and value for each individual.

Program EDI-6.6A: Inclusion and Participation Initiatives. *Provide opportunities for social connections, including discounted or free community events, intergenerational programs (for example, pairings of students and older adults), mental health services, multicultural programs, and working with organizations such as Marin Villages to engage and empower older adults.*

APPENDIX C:
STAFF RECOMMENDED LAND USE MAP CHANGES

PROPOSED GENERAL PLAN 2040 LAND USE MAP AMENDMENTS RECOMMENDED BY STAFF

Location	2020 General Plan	2040 General Plan	Discussion
Correcting Scrivener's Errors			
999 Las Pavadas (APN 175-171-01)	Park	Low Density Residential	Hillview Park was digitized on wrong parcel
40 Elena Circle (APN 175-311-24)	Park	Low Density Residential	Arbor Park was digitized on wrong parcel
Vacant lot end of Meadow Drive in unincorporated Santa Venetia (APN 180-131-10)	High Density Residential	Park, Recreation, and Open Space	Unimproved lot at the entrance to Santa Margarita Island preserve. Publicly owned open space and part of the park.
15 Harbor Street (APN 014-182-10)	2nd/3rd Mixed Use	Marine-Related Mixed Use	This is a waterfront restaurant and bar (Pier 15) in the Canal Area that was incorrectly digitized with one of the downtown land use designations.
635 Adrian Way (APN 180-053-23)	Park	Public/Quasi-Public	The parcel contains the Korean Presbyterian Church and is incorrectly shown as "Park" (the site is between two mini-parks in Santa Venetia)
Cresta Drive (Deer Valley) APN 155-280-09	Undesignated	High Density Residential	This is a small parcel in the Deer Valley area developed with multi-family housing that has no designation.
Expanding Mapping of Public/Quasi-Public Land Uses			
All San Rafael City Schools All Miller Creek Schools	Mostly Low Density Residential	Public/Quasi Public	Properties owned by San Rafael City Schools and the Miller Creek School District are being mapped as Public/Quasi-Public to reflect their ownership and use.
Marin County Sheriff's Office 1600 Los Gamos (APN 165-220-11 and -10)	Office	Public/Quasi Public	The 1600 Los Gamos building is owned and operated by the County of Marin for law enforcement, fire protection, and public safety services.
San Rafael Public Works Center 111 Morphew (APN 009-430-01)	Light Industrial/Office	Public/Quasi Public	Property is owned and operated by the City of San Rafael as the Public Works Center.
Fire Station 53 30 Joseph Ct (APN 151-081-088)	Light Industrial/Office	Public/Quasi Public	Other fire stations are similarly designated Public/Quasi-Public.
Marin Academy 1618 Fifth Avenue (APN 011-154-01)	Medium Density Residential	Public/Quasi Public	Other Marin Academy parcels are designated Public/Quasi-Public. This parcel was acquired and developed with academic facilities.
Marin Tennis Club 925 Belle Avenue (APN 015-101-10)	Low Density Residential	Public/Quasi Public	Similar facilities (such as the San Rafael Raquet Club and Peacock Gap Golf Course) have a Public/Quasi-Public designation.
Smith Ranch Rd Park and Ride Lot (APN 155-121-01)	Undesignated	Public/Quasi Public	Large surface park and ride lot, separate and distinct from the Highway corridor properties
15 Caltrans-owned parcels; east side of Brookdale Avenue (APNs 011-075-05 to -08 and 011-094-01 to -11)	Medium Density Residential	Public/Quasi Public	This strip of formerly residentially-designated lots facing Brookdale Avenue is now owned by Caltrans. It is separated from US 101 by the SMART right-of-way.
Northwest corner of Lucas Valley Road and US 101 (APN 164-270-04)	Hillside Residential	Public/Quasi Public	9.36 acre parcel created when the Daphne property was subdivided. This portion was deeded to Caltrans.

PROPOSED GENERAL PLAN 2040 LAND USE MAP AMENDMENTS RECOMMENDED BY STAFF

Location	2020 General Plan	2040 General Plan	Discussion
Water tank and adjacent public open space at Ridgewood Drive and Oakwood Drive (Sun Valley) (APNs 010-011-02, 010-081-07, 010-081-25, 010-081-26)	Hillside Residential	Public/Quasi Public	Four parcels owned by Marin Municipal Water District, including a large water storage tank.
Expanding Mapping of Park and Open Space Land Uses			
Lagoon Park (APN 179-270-12) – Civic Center area	Public/Quasi-Public	Park, Recreation, and Open Space	This 10-acre area at the Civic Center, including the lake, island, lawns, paths, playground, fishing pier, and picnic areas, is classified as a park by Marin County Parks.
Upper elevations of the Falkirk Mansion tract (APN 011-131-05) – Fairhills area	Public/Quasi-Public	Park, Recreation, and Open Space	The Mansion and grounds retain their Public/Quasi Public designation, However, the undeveloped upper portion of the site is re-designated as Parks and Open Space, similar to Boyd Park.
End of Limestone Grade (Marinwood) (APN 164-211-04)	Hillside Resource Residential	Park, Recreation, and Open Space	12.85 acre parcel in the northern part of Marinwood; now owned by Marinwood Community Services District and managed as open space.
Former Daphne Property (APN 164-270-04) (Marinwood)	Hillside Residential	Park, Recreation, and Open Space	69.9 acre parcel, formerly part of the Daphne property northwest of the 101/Lucas Valley interchange in unincorporated Marinwood. Now dedicated as open space.
Heron Hill (APN 180-231-05, -06, -07, -09, and 180-291-04) – east of Santa Venetia	Hillside Residential	Park, Recreation, and Open Space	This 16-acre area on North San Pedro Road was recently acquired by Marin County Parks.
Bucks Landing (APN 180-171011, 186-010-20) – east of Santa Venetia	Hillside Resource Residential	Parks and Open Space	This 32.1-acre area at the gateway to China Camp State Park was recently acquired by Marin County Parks.
Sterling Way (155-050-53) – end of Professional Center Parkway	Public/Quasi-Public	Park, Recreation, and Open Space	When Professional Center Parkway was extended (as Sterling Way), this parcel had a Public/Quasi Public designation. The portion of the parcel not occupied by the street is now permanent open space.
Loch Lomond Highlands Open Space (APN 186-520-19)	Hillside Resource Residential	Park, Recreation, and Open Space	This is a 45.73-acre open space preserve owned and managed by the Loch Lomond Highlands Homeowners Association.
Loch Lomond "Marina Green" (fragment of APNs 016-070-09 and 016-070-018)	Marine Related Commercial	Park, Recreation, and Open Space	This designation applies only to the portions of the Loch Lomond Marina development that have been developed as parkland, including the Marina Green and playground areas.
Oakwood Unit 2 (APN 012-320-09 and -10) – end of Greenwood Ave (Gerstle Park)	Hillside Residential	Park, Recreation, and Open Space	Reflects recent dedication of two parcels as open space
Mt Olivet Cemetery (APN 175-250-15)	Public/Quasi-Public	Park, Recreation, and Open Space	Cemeteries function as an extension of the open space network
Mt Tam Cemetery (APN 177-240-03)	Public/Quasi-Public	Park, Recreation, and Open Space	Cemeteries function as an extension of the open space network
Westside Las Gallinas just north of Montevideo (APN 165-010-66)	Hillside Residential	Park, Recreation, and Open Space	2.94 acres acquired by Marin County Open Space District in Terra Linda Open Space Preserve

PROPOSED GENERAL PLAN 2040 LAND USE MAP AMENDMENTS RECOMMENDED BY STAFF

Location	2020 General Plan	2040 General Plan	Discussion
Parcel 180-281-09 (behind Jehovah Witnesses parcel on North San Pedro)	Low Density Residential	Park, Recreation, and Open Space	0.97 acres acquired by Marin County Open Space District in San Pedro Mountain Open Space Preserve
Parcel 180-341-34 (end of Bayhills Drive)	Hillside Residential	Park, Recreation, and Open Space	3.17 acres acquired by State of California (part of China Camp State Park)
Adjusting to Reflect Actual Uses and Densities			
"33 North" (APN 179-511-01) apartments at 33 San Pablo Av (Civic Center area)	Office	High Density Residential	This is a multi-family apartment building on a former office building site. Although the use is permitted under the Office designation, High Density Residential is a better fit.
Anise Turina House Apartments (APN 180-1467-31) – 28 apartments on a 0.85 acre site on N. San Pedro Road at LaBrea in unincorporated Santa Venetia	Low Density Residential	High Density Residential	Although the County Plan showed this as a multi-family site, the City's plan shows it as a low density site. It has been developed with apartments and is being corrected here.
Adrian Terrace (APNs 180-530-01 through -22, and 180-530-24 through -33) – 32 small lot single family homes	High Density Residential	Medium Density Residential	The actual use of the site is a small lot single family home development at 11 units per acre. This is located in unincorporated Santa Venetia on North San Pedro Road.
Maria B Freitas Senior Housing (APN 175-181-28) at 455 Freitas Parkway	Low Density Residential	High Density Residential	Change reflects existing use, which is a high-density apartment complex serving lower income seniors
Partridge Drive/Partridge Court subdivision in the Peacock Gap area (APNs 186-540-01 to -51)	Hillside Residential	Low Density Residential	Change reflects existing density, which is 6 units per net acre. The current designation allows a maximum density of 2 units per acre. The common area is designated as Open Space.
Vista Marin Drive (APN 180-540-01 to -21 and 180-550-01 to -28) - single family homes	Hillside Residential	Medium Density Residential	Change reflects existing density, which is 8.4 units per net acre. The current designation allows a maximum density of 2 units per acre. The common area is designated as Open Space.
The Oaks (APN 164-270-05) - Approved 126 unit assisted living facility in unincorporated Marinwood	Hillside Residential	High Density Residential	Site approved for assisted living by the County of Marin. The designation only applies to the parcel where the facility will be built—the adjacent land is re-designated open space (see #20).
Homeward Bound/190 Mill Street (APN 014-192-12 and -13) in the Canal area	Light Industrial-Office	High Density Residential	Change accommodates the proposed development of 32 units of supportive housing and counseling/admin services
Adjusting to Reflect Zoning and Parcel Patterns			
257 Glen Park (APN 015-021-34) in Dominican Area Zoned duplex residential.	Low Density Residential	Medium Density Residential	Fine tunes the boundary between Low and Medium Density Residential to acknowledge existing multi-unit RD zoned bldg.
235 Union (APN 014-024-15) in Montecito – rear portion of lot only	Medium Density Residential	Medium Density Residential	Splits the GP designation on a through-lot between Union and Ridge so that the Ridge frontage stays Low Density, consistent with the other lots on Ridge Avenue. Matches existing zoning.
Toyota of Marin; 445 Francisco Boulevard East (APN 014-133-12 and 014-152-18)	Marine-Related Commercial	General Commercial	Change reflects existing use and longer-term opportunity for a broader range of uses of this site

PROPOSED GENERAL PLAN 2040 LAND USE MAP AMENDMENTS RECOMMENDED BY STAFF

Location	2020 General Plan	2040 General Plan	Discussion
#20, 30, 34, 44 Roberts Avenue; #10 Glen Av, #211 Picnic in the Picnic Valley area (APNs 013-101-09, 013-122-07 to -10, and -02)	Medium Density Residential	Low Density Residential	Splits the GP designation on the block to match existing zoning and land uses and retain the Roberts Av frontage as Low Density Residential. Multi-family uses on Picnic Avenue are not impacted.
Changing Density to Reflect Site Constraints			
54 Elda Drive (APN 175-082-21) in Terra Linda	Low Density Residential	Hillside Residential	Constrained 5.05-acre hillside parcel developed with a single family home, currently zoned R-20, with average slope of 40%. Better suited as Hillside Residential.
28 Sirard Lane (APN 010-052-01) in Sun Valley	Low Density Residential	Hillside Residential	Constrained 1.41-acre hillside parcel with a single family home, zoned PD, with average slope of 30%. Suited as Hillside Residential.
Changing for Consistency with 2013 Civic Center Station Area Plan			
380 Merrydale and 401 Merrydale, near Civic Center SMART Station (APNs 179-041-05, -22, and -26)	Light Industrial-Office	Office Mixed Use	Public Storage (1.95 net acres) and Northgate Security Storage (0.9 net acres) self-storage facilities; identified as office/potential residential sites in the *Civic Center Station Area Plan* (amended in September 2013; Resolution 13618).
Formalizing Prior Council Resolutions.			
Resolution 11682 (2004) changed 1540 Fifth Avenue (APN 011-195-03) to reflect Marin Academy ownership	Fifth/Mission Residential Office	Public/Quasi Public	Parcel no longer exists and is now part of APN 011-195-06. This change already appears on the City's official Map.
Resolution 12331 (2007) shows the approved General Plan designations for the Loch Lomond Marina development	Neighborhood Com, Marine Com, Conservation	Neighborhood Commercial, Marine Commercial, Conservation	No change. This merely formalizes the previously approved designations.
Resolution 12557 (2008) – 226 Magnolia Avenue (Dominican Admissions Office)	Large Lot Residential	Public/Quasi Public	No change. This formalizes the previously approved designation.
Resolution 14242 (2016) –Portions of SMART Right of Way and several City/County owned properties	Miscellaneous	Public/Quasi Public and Park, Recreation, and Open Space	This 2016 Resolution acknowledged SMART's ownership of several properties along the rail line, and noted several City and County owned properties as PQP or Open Space.
Resolution 14242 (2016) – 1820 Point San Pedro Road	Open Space	Low Density Residential	Change approved by Council in 2016 to acknowledge that a privately held parcel that had been designated open space.

Notes: Assessor Parcel Number = APN
Source: City of San Rafael, 2020.

APPENDIX D:
AIR QUALITY AND GREENHOUSE GAS EMISSIONS DATA

EXISTING STATE GHG REGULATIONS

State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05), Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), Executive Order B-30-15, and Senate Bill 375 (SB 375. These are summarized as follows:

EXECUTIVE ORDER S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010.
- 1990 levels by 2020.
- 80 percent below 1990 levels by 2050.

ASSEMBLY BILL 32

Also known as the Global Warming Solutions Act (2006), AB 32 was signed August 31, 2006, in order to reduce California's contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05. Under AB 32, California Air Resources Board (CARB) prepared the 2008 Climate Change Scoping Plan, the 2014 Climate Change Scoping Plan, and the 2017 Climate Change Scoping Plan, which is discussed below.

CARB 2008 Scoping Plan

The 2008 Scoping Plan, adopted by CARB on December 11, 2008, identified that GHG emissions in California are anticipated to be approximately 596 MMTCO2e in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 MMTCO2e (471 million tons) for the state. In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MTCO2e per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted at the May 22, 2014, board hearing, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 MMTCO2e

1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 MMTCO2e.1

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the State's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high-level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the State to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.2 CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.3

EXECUTIVE ORDER B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the State to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires State agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in State planning and investment decisions.

SENATE BILL 32 AND ASSEMBLY BILL 197

In September 2016, SB 32 and AB 197 were signed into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) to address the 2030 target for the State. The 2017 Scoping Plan establishes a new emissions limit of 260 MMTCO2e for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.4

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission vehicle technologies; continued investment in renewables, such as

[1] California Air Resources Board, 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006.
[2] California Air Resources Board, 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006.
[3] California Air Resources Board, 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006.
[4] California Air Resources Board, 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on March 18, 2019.

solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (i.e., methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants (TACs) emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero emission vehicle buses and trucks.
- Low Carbon Fuel Standards, with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of zero emission vehicle trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 MTCO2e or less per capita by 2030 and 2 MTCO2e or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have the discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the State's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles travelled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what the GHG emissions would look like if the State did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 1. It includes the existing renewables requirements, advanced clean cars, the "10 percent" Low Carbon Fuel Standard, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new

policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 MMTCO2e above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

TABLE 1 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS REDUCTIONS GAP TO ACHIEVE THE 2030 GHG TARGET

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target with Known Commitments	**60**

Source: California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on March 18, 2019.

Table 2 provides estimated GHG emissions by sector, compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

TABLE 2 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS BY SECTOR TO ACHIEVE THE 2030 GHG TARGET

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[a]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	34-79	NA
Total	431	260	-40%

Notes: TCU = Transportation, Communications, and Utilities; TBD = To Be Determined.
a. Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.
Source: California Air Resources Board. 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on March 18, 2019.

SENATE BILL 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018.5 The updated targets become effective on October 1, 2018. The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing.

The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the SB 375 targets. For next SCS update, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent). CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies. 6

OTHER STATE REGULATIONS THAT AFFECT GHGS

Transportation Sector

Assembly Bill 1493

Also known as Pavley I, AB 1493 is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. It reduced GHG emissions from new passenger vehicles by 30 percent by 2016. California implemented the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under the heading for Federal Regulations, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known

[5] California Air Resources Board, 2018, Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

[6] California Air Resources Board, 2018, Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

as Pavley II) for model years 2017 through 2025. This program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.[7]

Executive Order S-01-07

On January 18, 2007, the State set a new Low Carbon Fuel Standard for transportation fuels sold in California. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The Low Carbon Fuel Standard required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The Low Carbon Fuel Standard applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle," using the most economically feasible methods.

Executive Order B-16-2012

Signed on March 23, 2012, the State directed that CARB, the California Energy Commission, the Public Utilities Commission, and other relevant agencies work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. Finally, the executive order sets a target of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

Energy and Renewable Energy

Senate Bills 1078, 107, and X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard established under Senate Bill 1078 and 107. Executive Order S-14-08 was signed in November 2008, which expanded the State's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Signed in September 2015, SB 350 establishes tiered increases to the renewable portfolio standard of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 seeks to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-55-18 and SB 100

SB 100 and Executive Order B-55-18 were signed into law on September 10, 2018. Under the existing RPS, 25 percent of retail sales are required to be from renewable sources by December 31, 2016, 33 percent by December 31, 2020, 40 percent by December 31, 2024, 45 percent by December 31, 2027, and 50 percent

[7] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

by December 31, 2030. SB 100 raises California's RPS requirement to 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030.

In addition to targets under AB 32 and SB32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural Resources Agency, CalEPA, the Department of Food and Agriculture, and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect January 1, 2020.[8] The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. Four key areas the 2019 standards focus on are 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; and 4) nonresidential lighting requirements.[9] Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy efficient. When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy than homes built to the 2016 standards.[10]

California Building Code: CALGreen

On July 17, 2008, California Green Building Standards Code (24 California Code of Regulations, Part 11, known as "CALGreen") were adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.11 The mandatory provisions of the 2016 CalGreen building standards became effective on January 1, 2017. The CEC adopted the 2019 CALGreen on May 9, 2018, and it becomes effective January 1, 2020.

[8] California Energy Commission, 2015, 2016 Building Energy and Efficiency Standards Frequently Asked Questions, http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf, accessed on March 18, 2019.

[9] California Energy Commission, 2018, Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. News Release.

[10] California Energy Commission, 2018, 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf, accessed on March 18, 2019.

[11] The green building standards became mandatory in the 2010 edition of the code.

2006 Appliance Efficiency Regulations

Adopted by the California Energy Commission on October 11, 2006, the 2006 Appliance Efficiency Regulations (Title 20, California Code of Regulations, Sections 1601 through 1608) were approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

AB 939

Management of solid waste processing would contribute to reducing GHG emissions. Through operations such as source reduction, recycling, and composting, less waste would be produced and less energy would be consumed to process waste materials, thereby reducing GHG emissions. California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code Sections 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own. Section 5.408 of the CALGreen also requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1826

AB 1826, signed on October of 2014, requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

SBX7-7

Water conservation would indirectly contribute to reducing greenhouse gases. As less water is used, fewer resources will be used to source, distribute, and treat the water. The 20x2020 Water Conservation Plan

was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009 to 2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutants

Senate Bill 1383

On September 19, 2016, SB 1383 was signed into law to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the State board, to approve and begin implementing the comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Final Proposed Short-Lived Climate Pollutant Strategy, which identifies the State's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.12 In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

[12] California Air Resources Board, 2017, Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed on March 18, 2019.

San Rafael Activity Data

San Rafael GHG Emissions Inventory 2016 Project Activity Data

Source:

Data provided by O'Rourke & Associate. Acticvity data used for the Marin Climate & Energy Partnership. 2018, February. City of San Rafael Community Greenhouse Gas Emissions Inventory for Year 2015. As noted in the inventory,
1 transmission and distribution losses are included in reported emissions from electricity (4.23% in 2016).

2 Marin Climate & Energy Partnership. 2019, April 23. City of San Rafael Climate Change Action Plan 2030.

Sector	Subsector	Activity Data Units	2016 Activity Data	Emissions Factor	Emissions Factor Unit	2016 Emissions $MTCO_2e$	Growth Factor
Energy							
Electricity[1, 2]		$MTCO_2e$					
	Electricity - PG&E + MCE	kWh	332,512,237	0.0002008	MTCO2e/Kwh	66,784	
	Residential	kWh	118,031,218				Housing Units
	NonResidential	kWh	214,481,019				Employment
	PG&E			0.0001341	MTCO2e/Kwh		
	MCE Light Green			0.0001302	MTCO2e/Kwh		
	MCE Deep Green			0.0000000	MTCO2e/Kwh		
	Other Direct Access			0.0002404	MTCO2e/Kwh		
Natural Gas[1, 2]							
	PG&E Gas	therms	15,155,231	0.00416	MT/therm	63,067	
	Residential Natural Gas	therms	9,467,604				Housing Units
	Non-ResidentialNatural Gas	therms	5,687,627				Employment
Transportation							
	Vehicle Miles Traveled	VMT				238,943	VMT Growth
Offroad Vehicles and Equipment							
OFFROAD	Construction, Lawn & Garden, Light Commercial	$MTCO_2e$				3,613	See Offroad
Solid Waste/Landfills							
	Total Solid Waste Disposal	Tons	57,000			14,933	Service Population
Water and Wastewater							
Water Consumption		$MTCO_2e$					
	Annual Water Use	million gallons	6,915	0.09154	MTCO2e/MG	633	Service Population
		Gallons Per Capita	114				
Wastewater Treatment		$MTCO_2e$					
	Wastewater Treatment	million gallons			Kwh/mgallons	978	Service Population
TOTAL COMMUNITY		MTCO2e				388,951	

Land Use Statistics - San Rafael + SOI

	GHG Inventory[1]	CEQA Baseline	GP Horizon	Change	
	2016	2019	2040	2040-2019	2040 Growth Factor from Baseline
Population	60,661	75,751	84,661	8,910	0.12
City	60,661	61,230	69,240	8,010	0.13
SOI		14,521	15,421	900	0.06
Downtown Precise Plan		2,315	5,885	3,570	1.54
Downtown as a % of City		4%	8%	45%	11.79
Household	23,051	28,132	32,382	4,250	0.15
City	23,051	22,961	26,821	3,860	0.17
SOI		5,171	5,561	390	0.08
Downtown Precise Plan		1,496	3,596	2,100	1.40
Downtown as a % of City		7%	13%	54%	8.35
Dwelling Units[2]	23,885	29,529	33,989	4,460	0.15
City	23,885	24,109	28,159	4,050	0.17
SOI		5,420	5,830	410	0.08
Downtown Precise Plan		1,571	3,771	2,200	1.40
Downtown as a % of City		7%	13%	54%	8.34
Employment	41,918	44,200	48,315	4,115	0.09
City[3]	41,918	42,050	46,100	4,050	0.10
SOI		2,150	2,215	65	0.03
Downtown Precise Plan		6,700	8,720	2,020	0.30
Downtown as a % of City		16%	19%	50%	3.13
Service Population	102,579	119,951	132,976	13,025	0.11
City	102,579	103,280	115,340	12,060	0.12
SOI	0	16,671	17,636	965	0.06
Downtown Precise Plan		9,015	14,605	5,590	0.62
Downtown as a % of City		9%	13%	46%	5.31

Notes

1 Marin Climate & Energy Partnership. 2018, February. City of San Rafael Community Greenhouse Gas Emissions Inventory for Year 2015.

2 Dwelling units for year 2016 backcalculated based on population/unit ratio in 2019.

3 Employment in 2016 estimated based on the increase in employment between 2015 and 2020 estimated by ABAG. Association of Bay Area Governments (ABAG). 2019, May 1. Projections 2040 by Jurisdiction https://data.bayareametro.gov/Demography/Projections-2040-by-Jurisdiction/grqz-amra

San Rafael City + SOI Emissions

San Rafael Community GHG Emissions Inventory and Forecast

Category	GHG Emissions ($MtCO_2e$/Year)											
	Existing (2019)				General Plan 2040				Net Change			
	City	SOI	TOTAL		City	SOI	TOTAL		City	SOI	TOTAL	
Building Electricity	67,142	7,589	74,731	12%	49,167	5,263	54,430	11%	-17,975	-2,326	-20,301	-27%
Building Natural Gas	63,511	10,154	73,666	12%	72,479	10,867	83,346	17%	8,967	713	9,680	13%
On-Road Transportation	375,518	46,644	422,162	71%	277,721	31,938	309,659	65%	-97,797	-14,706	-112,503	-27%
Off-Road Vehicles and Equipment	2,582	161	2,742	0.5%	2,807	172	2,979	1%	225	12	237	9%
Solid Waste/Landfills	19,632	3,169	22,801	4%	21,924	3,352	25,277	5%	2,292	183	2,476	11%
Water Use	1,170	277	1,447	0.2%	1,323	295	1,617	0.3%	153	17	170	12%
Wastewater Treatment	792	188	980	0.2%	896	200	1,095	0.2%	104	12	115	12%
Total Community Emissions	**530,347**	**68,182**	**598,529**	100%	**426,317**	**52,086**	**478,403**	100%	**-104,030**	**-16,095**	**-120,126**	**-20%**
Service Population (SP)	103,280	16,671	119,951		115,340	17,636	132,976		12,060	965	13,025	11%
$MTCO_2e$/SP	5.1	4.1	5.0		3.7	3.0	3.6		-1.4	-1.1	-1.4	-28%
Trajectory to EO S-03-05			**359,117**				**478,403**		**0**	**0**	**119,286**	**33%**

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).

The emissions inventory and forecast is based on activity data for the City. This emissions inventory methodology identifies GHG emissions produced within a jurisdiction and captures direct and indirect emissions generated by land uses in a community. The activity data methodology allows a direct comparison between a community's GHG emissions and that identified by CARB in the AB 32 and SB 32 inventory and forecast prepared for the scoping plan. Unlike a "consumption-based" GHG emissions inventory, an activity-based emissions inventory does not capture lifecycle emissions associated with consumptions of goods. While a consumption-based emissions inventory approach may document GHG emissions associated with the final demand (regardless of where the were generated), a consumption-based emissions inventory excludes emissions associated with products produced within the juridiction but consumed elsewhere. For these reasons, an activity-based emissions inventory was determined to be most applicable for determining significant impacts under CEQA.

San Rafael Community Criteria Air Pollutant Emissions Inventory and Forec

Sources

[1] Source: Fehr & Peers; EMFAC2017 PL Web database

[2] Source: Data provided by O'Rourke & Associate. Acticvity data used for the Marin Climate & Energy Partnership. 2018, February. City of San Rafael Community Greenhouse Gas Emissions Inventory for Year 2015.; CalEEMod User's Guide

[3] Source: OFFROAD 2017

[4] Source: CalEEMod User's Guide

EXISTING

Phase	Existing (2019) Criteria Air Pollutant Emissions (pounds/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$
City				
Transportation[1]	125	781	354	148
Energy[2]	45	385	31	31
Offroad Equipment[3]	78	104	16	13
Consumer Products[4]	932			
Subtotal	1,180	1,270	401	192
SOI				
Transportation[1]	15	97	44	18
Energy[2]	7	66	5	5
Offroad Equipment[3]	4	7	1	1
Consumer Products[4]	210			
Subtotal	237	169	50	24
Total				
Transportation[1]	**140**	**878**	**398**	**166**
Energy[2]	**52**	**451**	**36**	**36**
Offroad Equipment[3]	**82**	**110**	**17**	**13**
Consumer Products[4]	**1,142**			
Total	**1,416**	**1,439**	**451**	**216**
Total Tons Per Year				
Transportation[1]	**24**	**152**	**69**	**29**
Energy[2]	**10**	**82**	**7**	**7**
Offroad Equipment[3]	**15**	**20**	**3**	**2**
Consumer Products[4]	**208**			
Total	**257**	**255**	**79**	**38**

San Rafael Community Criteria Air Pollutant Emissions Inventory and Forec

EXISTING WITH 2040 EMISSION RATES

Phase	Existing Criteria Air Pollutant Emissions (pounds/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$
City				
Transportation[1]	92	304	357	145
Energy[2]	45	385	31	31
Offroad Equipment[3]	78	104	16	13
Consumer Products[4]	932			
Subtotal	1,147	793	405	189
SOI				
Transportation[1]	11	38	44	18
Energy[2]	7	66	5	5
Offroad Equipment[3]	4	7	1	1
Consumer Products[4]	210			
Subtotal	233	110	50	24
TOTAL				
Transportation[1]	**104**	**341**	**402**	**163**
Energy[2]	**52**	**451**	**36**	**36**
Area[3]	**82**	**110**	**17**	**13**
Consumer Products[4]	**1,142**			
Total	**1,380**	**902**	**455**	**213**
Total Tons Per Year				
Transportation[1]	**18**	**59**	**70**	**28**
Energy[2]	**10**	**82**	**7**	**7**
Offroad Equipment[3]	**15**	**20**	**3**	**2**
Consumer Products[4]	**208**			
Total	**251**	**162**	**79**	**37**

San Rafael Community Criteria Air Pollutant Emissions Inventory and Forec

2040 Project

Phase	Project (2040) Criteria Air Pollutant Emissions (pounds/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$
City				
Transportation[1]	96	317	372	151
Energy[2]	51	440	36	36
Offroad Equipment[3]	85	113	18	14
Consumer Products[4]	1,159			
Subtotal	1,391	869	426	201
SOI				
Transportation[1]	11	36	43	17
Energy[2]	8	70	5	5
Offroad Equipment[3]	5	7	1	1
Consumer Products[4]	233			
Subtotal	256	114	49	24
TOTAL				
Transportation[1]	107	353	415	169
Energy[2]	59	510	41	41
Offroad Equipment[3]	89	120	19	15
Consumer Products[4]	1,391	0	0	0
Total	**1,647**	**983**	**475**	**224**
Total Tons Per Year				
Transportation[1]	**19**	**61**	**72**	**29**
Energy[2]	**11**	**93**	**7**	**7**
Offroad Equipment[3]	**16**	**22**	**3**	**3**
Consumer Products[4]	**254**			
Total	**300**	**176**	**83**	**39**

San Rafael Community Criteria Air Pollutant Emissions Inventory and Forec

NET CHANGE (2040 Emission Rates)

Phase	Net Change Criteria Air Pollutant Emissions (pounds/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$
City				
Transportation[1]	4	13	15	6
Energy[2]	6	54	4	4
Offroad Equipment[3]	7	9	1	1
Consumer Products[4]	227	0	0	0
Subtotal	244	76	21	12
SOI				
Transportation[1]	0	-1	-2	-1
Energy[2]	1	5	0	0
Offroad Equipment[3]	0	0	0	0
Consumer Products[4]	23	0	0	0
Subtotal	23	4	-1	0
TOTAL				
Transportation[1]	**4**	**12**	**14**	**6**
Energy[2]	**7**	**59**	**5**	**5**
Offroad Equipment[3]	**7**	**9**	**1**	**1**
Consumer Products[4]	**250**	**0**	**0**	**0**
Total	**268**	**80**	**20**	**11**
BAAQMD Threshold	**54**	**54**	**82**	**54**
Exceeds Threshold	**Yes**	**Yes**	**No**	**No**
Total Tons Per Year				
Transportation[1]	1	2	2	1
Energy[2]	1	11	1	1
Offroad Equipment[3]	1	2	0	0
Consumer Products[4]	46	0	0	0
Total	**49**	**15**	**4**	**2**
BAAQMD Threshold	**10**	**10**	**15**	**10**
Exceeds Threshold	**Yes**	**Yes**	**No**	**No**

San Rafael Community Criteria Air Pollutant Emissions Inventory and Forec

NET CHANGE (from Existing)

Phase	Net Change (2040-2016) Criteria Air Pollutant Emissions (pounds/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$
CITY				
Transportation[1]	-28	-464	19	3
Energy[2]	6	54	4	4
Offroad Equipment[3]	7	9	1	1
Consumer Products[4]	227	0	0	0
Subtotal	212	-401	25	9
SOI				
Transportation[1]	-4	-61	-1	-1
Energy[2]	1	5	0	0
Offroad Equipment[3]	0	0	0	0
Consumer Products[4]	23	0	0	0
Subtotal	19	-56	-1	-1
TOTAL				
Transportation[1]	-33	-525	18	2
Energy[2]	7	59	5	5
Offroad Equipment[3]	7	9	1	1
Consumer Products[4]	250	0	0	0
Total	**231**	**-456**	**24**	**8**
BAAQMD Threshold	**54**	**54**	**82**	**54**
Exceeds Threshold	**Yes**	**No**	**No**	**No**
Total Tons Per Year				
Transportation[1]	-6	-91	3	0
Energy[2]	1	11	1	1
Offroad Equipment[3]	1	2	0	0
Consumer Products[4]	46	0	0	0
Total	**42**	**-79**	**4**	**1**
BAAQMD Threshold	**10**	**10**	**15**	**10**
Exceeds Threshold	**Yes**	**No**	**No**	**No**

Table 4.3-9 Comparison of the Change in Population and VMT in the City of San Rafael

Category	Baseline	2040 Without Project	2040 With Project	Net Change from Baseline	Percent Increase from Baseline	Net Change Between With and Without Project	Percent Change Between With and Without Project
City							
Population[a]	61,230	NA	69,240	8,010	13%	NA	NA
Employment	42,050	NA	46,100	4,050	10%	NA	NA
Service Population (SP)	103,280	111,825	115,340	12,060	12%	3,515	3%
VMT per Day[c]	3,214,988	3,391,163	3,352,369	137,381	4%	-38,794	-1%
VMT/person	52.5	NA	48.4	-4.1	-8%	NA	NA
VMT/SP	31.1	30.3	29.1	-2.1	-7%	-1.3	-4%
SOI							
Population[a]	14,521	NA	15,421	900	6%	NA	NA
Employment	2,150	NA	2,215	65	3%	NA	NA
Service Population (SP)	16,671	17,286	17,636	965	6%	350	2%
VMT per Day[c]	399,338	420,975	385,521	-13,817	-3%	-35,454	-8%
VMT/person	27.5	NA	25.0	-2.5	-9%	NA	NA
VMT/SP	24.0	24.4	21.9	-2.1	-9%	-2.5	-10%

ZXXX

d. Based on VMT data provided by Kittelson & Associates, Inc.

Source: PlaceWorks 2018.

Solid Waste Disposal

Solid Waste Disposal

Source: CalRecycle Disposal By Facility - Marin County Hazardous and Solid Waste Management (Disposal Reporting System)

T**he Marin County Hazardous and Solid Waste Management Joint Powers Authority** is an agency consisting of all 11 incorporated cities within Marin (Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, and Tiburon) and the County. Because of this, Calrecycle does not report solid waste disposal for San Rafael separte from the County. Solid Waste Disposal is estimated based on Service Population for the County of Marin v. San Rafael

Service Population of Marin County	
Employment[1]	112,468
Population[2]	258,826
Service Population	371,294

Service Population of San Rafael	City	SOI	TOTAL	% of Total
2019 Service Population	103,280	16,671	119,951	32%
As a % of Total	86%	14%		% Increase in SP
2040 Service Population	115,340	17,636	132,976	11%
As a % of Total	87%	13%		

Sources:

1 U.S. Census Bureau. Longitudinal Employer-Household Dynamics - Marin County. http://lehd.ces.census.gov/

2 U.S. Census Bureau. Quick Facts - Marin County. https://www.census.gov/quickfacts/marincountycalifornia

Waste Generated Within Marin County

San Rafael is a member of a regional waste agency. As a result, waste disposal is not reported separately for the City: https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/RegionalAgencies

Year	Interstate Tons + Transform Tons	ADC+AIC	Sludge
2016	223,074	21,214	5,317
2017	231,665	21,274	6,195
2018	250,470	35,354	5,705
erage 2018-2016	235,070	25,947	5,739
Redwood LF	134,862	54%	
Potrero Hills LF	97,201	41%	

Waste Generated Within San Rafael

Year	Interstate Tons + Transform Tons	ADC+AIC	Sludge
2016	72,067	6,853	1,718
2017	74,842	6,873	2,002
2018	80,917	11,421	1,843
Average 2018-2016	75,942	8,382	1,854

Notes:

Average 3-year disposal used to forecast waste disposal in 2040

Source: CalRecycle, 2020, Disposal Reporting System, Jurisdiction Reporting by Facility, https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility

Landfill Emission Tool (version 1.3) CH_4 Model Results.

Based on the Redwood Landfill K-Factor (Worst Case)

	EXISTING				**GENERAL PLAN**			
	CH_4 Tons	$MTCO_2e$ w/LFG Capture 2019 TOTAL	$MTCO_2e$ w/LFG Capture 2019 City	$MTCO_2e$ w/LFG Capture 2019 SOI	CH_4 Tons	$MTCO_2e$ w/LFG Capture 2040 TOTAL	$MTCO_2e$ w/LFG Capture 2040 City	$MTCO_2e$ w/LFG Capture 2040 SOI
Year 1	1,841	11,692	10,067	1,625	2,041	12,962	11,243	1,719
Year 2 (PEAK)	**3,591**	**22,801**	**19,632**	**3,169**	**3,980**	**25,277**	**21,924**	**3,352**
Year 3	3,457	21,951	18,900	3,051	3,832	24,334	21,107	3,227
Year 4	3,328	21,132	18,195	2,937	3,689	23,427	20,320	3,107
Year 5	3,204	20,344	17,517	2,827	3,552	22,553	19,562	2,991
Year 6	3,084	19,586	16,864	2,722	3,419	21,712	18,833	2,880
Year 7	2,969	18,855	16,235	2,621	3,292	20,903	18,131	2,772
Year 8	2,858	18,152	15,629	2,523	3,169	20,123	17,454	2,669
Year 9	2,752	17,475	15,047	2,429	3,051	19,373	16,804	2,569
Year 10	2,649	16,824	14,486	2,338	2,937	18,651	16,177	2,474
Year 11	2,551	16,197	13,946	2,251	2,827	17,955	15,574	2,381
Year 12	2,455	15,593	13,426	2,167	2,722	17,286	14,993	2,293
Year 13	2,364	15,011	12,925	2,086	2,621	16,641	14,434	2,207
Year 14	2,276	14,451	12,443	2,008	2,523	16,021	13,896	2,125
Year 15	2,191	13,913	11,979	1,934	2,429	15,423	13,378	2,046
Year 16	2,109	13,394	11,532	1,862	2,338	14,848	12,879	1,969
Year 17	2,031	12,894	11,102	1,792	2,251	14,295	12,399	1,896
Year 18	1,955	12,414	10,688	1,725	2,167	13,762	11,936	1,825
Year 19	1,882	11,951	10,290	1,661	2,086	13,248	11,491	1,757
Year 20	1,812	11,505	9,906	1,599	2,008	12,754	11,063	1,692
Year 21	1,744	11,076	9,537	1,539	1,934	12,279	10,650	1,628
Year 22	1,679	10,663	9,181	1,482	1,861	11,821	10,253	1,568
Year 23	1,617	10,266	8,839	1,427	1,792	11,380	9,871	1,509
Year 24	1,556	9,883	8,509	1,374	1,725	10,956	9,503	1,453
Year 25	1,498	9,514	8,192	1,322	1,661	10,547	9,149	1,399

Year 26	1,442	9,160	7,887	1,273	1,599	10,154	8,807	1,347
Year 27	1,389	8,818	7,592	1,226	1,539	9,776	8,479	1,296
Year 28	1,337	8,489	7,309	1,180	1,482	9,411	8,163	1,248
Year 29	1,287	8,173	7,037	1,136	1,427	9,060	7,859	1,202
Year 30	1,239	7,868	6,774	1,094	1,374	8,722	7,565	1,157
Year 31	1,193	7,575	6,522	1,053	1,322	8,397	7,283	1,114
Year 32	1,148	7,292	6,279	1,013	1,273	8,084	7,012	1,072
Year 33	1,105	7,020	6,045	976	1,226	7,783	6,750	1,032
Year 34	1,064	6,758	5,819	939	1,180	7,492	6,499	994
Year 35	1,025	6,506	5,602	904	1,136	7,213	6,256	957
Year 36	986	6,264	5,393	871	1,093	6,944	6,023	921
Year 37	950	6,030	5,192	838	1,053	6,685	5,798	887
Year 38	914	5,805	4,999	807	1,013	6,436	5,582	854
Year 39	880	5,589	4,812	777	976	6,196	5,374	822
Year 40	847	5,381	4,633	748	939	5,965	5,174	791
Year 41	816	5,180	4,460	720	904	5,742	4,981	762
Year 42	785	4,987	4,294	693	871	5,528	4,795	733
Year 43	756	4,801	4,134	667	838	5,322	4,616	706
Year 44	728	4,622	3,980	642	807	5,124	4,444	680
Year 45	701	4,450	3,831	618	777	4,933	4,278	654
Year 46	675	4,284	3,688	595	748	4,749	4,119	630
Year 47	649	4,124	3,551	573	720	4,572	3,965	606
Year 48	625	3,970	3,418	552	693	4,401	3,818	584
Year 49	602	3,822	3,291	531	667	4,237	3,675	562
Year 50	579	3,680	3,168	511	642	4,079	3,538	541
Year 51	558	3,542	3,050	492	618	3,927	3,406	521
Year 52	537	3,410	2,936	474	595	3,781	3,279	501
Year 53	517	3,283	2,827	456	573	3,640	3,157	483
Year 54	498	3,161	2,721	439	552	3,504	3,039	465
Year 55	479	3,043	2,620	423	531	3,373	2,926	447
Year 56	461	2,929	2,522	407	511	3,247	2,817	431
Year 57	444	2,820	2,428	392	492	3,126	2,712	415
Year 58	428	2,715	2,338	377	474	3,010	2,611	399
Year 59	412	2,614	2,251	363	456	2,898	2,513	384
Year 60	396	2,516	2,167	350	439	2,790	2,420	370
60 YR Avg		9,304	8,011	1,293		10,314	8,946	1,368

Waste. Landfill Emissions Tool Version 1.3 and CalRecycle. Biogenic CO_2 emissions are not included.

Notes

LFG capture Efficiency	0.75	AR5 CH_4 GWP	28	Tons to metric Tons	0.9071847

Waste generation based on three year average waste commitment for the County of Marin obtained from CalRecycle.

Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Consequently, the highest CH_4 emissions from waste disposal in a given year are reported.

Decomposition based on an average annual rainfall of 25 inches per year average (anaerobic decomposition factor (k) of 0.038) for the Redwood Landfill [WORST CASE] and an average annual rainfall of 17 inches per year average (anaerobic decomposition factor (k) of 0.02) for the Potrero Hills Landfill (WRCC 2020).

The Landfill Gas Estimator only includes the landfill gas (LFG) capture in the landfill gas heat output and therefore the reduction and emissions from landfill gas capture are calculated separately. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.3.

Biogenic CO_2 emissions are not included.

Water and Wastewater

Water and Wastewater

Water Demand Calculations Derived from the Urban Water Management Plan

	Table 5-12, 5-13, and 5-14: SBx7-7 Targets, Gallons Per Person Per Day (GPCD)[1]		
	2015 Actual	2015	2020
Method 3	110	137	124
Source:	Includes water from both residential and nonresidential uses. This value is used to forecast the CEQA Baseline and Proposed Project Water Use		

[1] Marin Municipal Water District. 2016, June 11. 2015 Urban Water Management Plan. http://marinwater.org/DocumentCenter/View/3828/MMWD-2015-UWMP-Final---Report-Only?bidId=

	2016 GPCD
San Rafael Gallons Per Capita Per Day (gpcd)[2]	114
Source:	

[2] Data provided by O'Rourke & Associate. Acticvity data used for the Marin Climate & Energy Partnership. 2018, February. City of San Rafael Community Greenhouse Gas Emissions Inventory for Year 2015.

Water Use

Gallons Per Day	**2016**	**CEQA Baseline**	**Proposed Project**	**Increase**
City	6,915,354	6,735,300	7,616,400	881,100
SOI	0	1,597,310	1,696,310	99,000
Total	6,915,354	8,332,610	9,312,710	980,100
AFY	7,746	9,334	10,432	1,098
Million Gallons Per Year	**2016**	**CEQA Baseline**	**Proposed Project**	**Increase**
MGY City	2,524	2,458	2,780	322
MGY SOI	0	583	619	36
MGY TOTAL	2,524	3,041	3,399	358

WASTEWATER PERCENTAGE	70%

[1] Modeling conservatively assumes that 70 percent of water use is indoor water use (30% outdoor) and would require wastewater treatment. Source: Marin Municipal Water District, 2016. Urban Water Management Plan, 2015 Update. Prepared by RMC Water and Environment

Water and Wastewater

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification

CH_4 - Microorganisms can biodegrade soluble organic material in wastewater under aerobic (presence of oxygen) or anaerobic (absence of oxygen) conditions. Anaerobic conditions result in the production of CH_4.

N_2O - Treatment of domestic wastewater during both nitrification and denitrification of the nitrogen present leads to the formation of N_2O, usually in the form of urea, ammonia, and proteins. These compounds are converted to nitrate through the aerobic process of nitrification. Denitrification occurs under anoxic conditions (without free oxygen), and involves the biological conversion of nitrate into dinitrogen. N_2O can be an intermediate product of both processes, but more often is associated with denitrification.

Notes: Waste discharge facilities in compliance with the United States Environmental Protection Agency's Clean Water Standards do not typically result in CH_4 emissions. However, poorly-operated aerobic wastewater treatment systems can result in the generation of CH_4. Because wastewater treatment systems are assumed to operate in compliance with state and federal laws pertaining to water quality, CH_4 emissions from centralized aerobic treatments are not included in the inventory.

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification

LGOP Version 1.1. Equation 10.9.

N_2O = Wastewater x 10^-6 x Nload x EF effluent x 10^3

	2016	CEQA Baseline	Proposed Project	Increase
City wastewater (Liters)=	6,687,614,104	6,513,489,733	7,365,572,907	852,083,174
SOI wastewater (Liters)=	0	1,544,706,588	1,640,446,271	95,739,683
TOTAL wastewater (Liters)=	6,687,614,104	8,058,196,321	9,006,019,178	947,822,857

10^-6 =	1.00E-06	conversion factor; kg/mg	
N Load	40.00	mg/L of wastewater	USEPA 2008
EF effluent	0.01	kg/N_2O/kg N	
10^-3 =	1.00E-03	conversion factor: MTons/kg	

	2016	CEQA Baseline	Proposed Project	Increase
	MTons	2019	2040	2040-2019
N_2O City	1.34	1.30	1.47	0.17
N_2O SOI	0.00	0.31	0.33	0.02
N_2O TOTAL	1.34	1.61	1.80	0.19
CO_2e City=	354	345	390	45
CO_2e SOI=	0	82	87	5
CO_2e TOTAL=	354	427	477	50

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the Nitrogen Load, which is assumed to be 40 mg of N per Liter of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2011. California Emissions Estimator Model (CalEEMod), Version 2011.1.1. User's Manual. USEPA. 2008. Page 8-12. USEPA cites Metcalf & Eddy, Inc., 1991, "Wastewater Engineering: Treatment Disposal, and Reuse," 3rd Ed. McGraw Hill Publishing.

Water and Wastewater

Energy for Water Conveyance, Treatment, Distribution, and Wastewater Treatment (Northern California)

Water Supply and Conveyance	Water Treatment	Water Distribution	Total Water	Wastewater Treatment
	kWhr/million gallons			
2,117	111	1,272	3,500	1,911

Source: California Energy Commission (CEC). 2006, December. Refining Estimates of Water-Related Energy Use in California. CEC-500-2006-118. Prepared by Navigant Consulting, Inc. Based on the electricity use for Northern California.

PG&E

	Intensity factor			CO_2e
	CO_2 MTons/MWH[1]	CH_4 MTons/MWH[2]	N_2O MTons/MWH[2]	MTons/MWh
2016	0.134	0.000013	0.000005	0.136
Source 1: California Public Utilities Commission. 2010, September 13. WCI Final Default Emission Factor Calculator 2008 Data, Version 2. WECC Region. Source 2: CH_4 and N_2O intensity based on California E-Grid data (CH_4 = 0.029 lbs/MWH; N_2O = 0.011 lbs/MWH) identified in the LGOP				

GHG Emissions from Energy Associated with Water/Wastewater

Energy Associated with Water Use	2016 MwH/Year	CEQA Baseline 2019	Proposed Project 2040	Increase 2040-2019
City Water Use	8,834	8,604	9,730	1,126
SOI Water Use	0	2,041	2,167	126
TOTAL Water Use	8,834	10,645	11,897	1,252
City Wastewater Generation	3,376	3,289	3,719	430
SOI Wastewater Generation	0	780	828	48
TOTAL Wastewater Generation	3,376	4,068	4,547	479
Total Water/Wastewater	12,211	14,713	16,444	1,731

GHG Emissions from Energy Associated with Water Use/Wastewater Generation	2016 $MTCO_2e$/Year	CEQA Baseline 2019	Proposed Project 2040	Increase 2040-2019
City Water Use	1,201	1,170	1,323	153
SOI Water Use	0	277	295	17
TOTAL Water Use	1,201	1,447	1,617	170
City Wastewater Generation	459	447	505	58
SOI Wastewater Generation	0	106	113	7
TOTAL Wastewater Generation	459	553	618	65
Total Water/Wastewater	1,660	2,000	2,235	235

Total GHGs

GHG Emissions from Water/Wastewater Use	2016 $MTCO_2e$/Year	CEQA Baseline 2019	Proposed Project 2040	Increase 2040-2019
City Water Use	1,201	1,170	1,323	153
SOI Water Use	0	277	295	17
TOTAL Water Use	1,201	1,447	1,617	170
City Wastewater Generation	813	792	896	104
SOI Wastewater Generation	0	188	200	12
TOTAL Wastewater Generation	813	980	1,095	115
Total Water/Wastewater	2,014	2,427	2,712	285

Energy - Electricity and Natural Gas

Energy

Emission Factors

Natural Gas	CO_2e
	MT/Therm
All Years[1]	0.00416

Electricity	Carbon Intensity			CO_2e	
Source	Current Percent Renewable[4]	CO_2 MTons/MWH[1]	CH_4 MTons/MWH[2]	N_2O MTons/MWH[2]	MTons/MWh
PG&E	38.9%	0.134	0.000015	0.000002	0.135
MCE Light Green	61%	0.130	0.000015	0.000002	0.131
MCE Deep Green	100%	0.000	0.000015	0.000002	0.001
Other Direct Access	NA	0.240	0.000015	0.000002	0.241
2016-2019 Average Carbon Intensity[1]					**0.201**
2040 Average Carbon Intensity[3]		0.130	0.000015	0.000002	**0.131**

Sources

1 Data provided by O'Rourke & Associate. Acticvity data used for the Marin Climate & Energy Partnership. 2018, February. City of San Rafael Community Greenhouse Gas Emissions Inventory for Year 2015. As noted in the inventory, transmission and distribution losses are included in reported emissions from electricity (4.23% in 2016).

[2] United State Environmental Protection Agency. 2017, February 27. eGRID2014v2 Annual Output Emission Rates, WECC California Region. https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_ghgoutputrates_v2.pdf (CH_4 = 33.1 lbs/GWH & N_2O = 4.0 lbs/GWH)

[3] In 2018, SB 100 (de León, 2018) was signed into law, which again increases the RPS to 60% by 2030 and encourages the state's electricity to come from carbon-free resources by 2045.

4 PG&E 2019 Sustainability Report. Key Sustainability Indicators. http://www.pgecorp.com/corp_responsibility/reports/2019/su04_key.html

4 Marin Clean Energy. Energy Choiceshttps://www.mcecleanenergy.org/residential/#choices

GHG Emissions from Energy Use

Forecast Methodlogy	2016	CEQA Baseline	Proposed Project	Increase
Residential - Dwelling Units	23,885	29,529	33,989	4,460
City	23,885	24,109	28,159	4,050
SOI	0	5,420	5,830	410
Nonresidential - Employment	41,918	44,200	48,315	4,115
City	41,918	42,050	46,100	4,050
SOI	0	2,150	2,215	65

Kwh per Unit per year	4942	Therms per Unit per year	396
Kwh per Employee per year	5117	Therms per Employee per year	136

Electricity	2016 Kwh	CEQA Baseline 2019	Proposed Project 2040	Increase 2019-2040
City - Residential	118,031,218	119,138,350	139,152,052	20,013,701
City - Nonresidential	214,481,019	215,158,769	235,881,552	20,722,783
City - TOTAL	332,512,237	334,297,120	375,033,603	40,736,484
SOI - Residential	0	26,783,768	28,809,846	2,026,078
SOI - Nonresidential	0	11,000,983	11,333,571	332,588
SOI- TOTAL	0	37,784,751	40,143,418	2,358,666
Total	332,512,237	409,866,622	455,320,439	45,453,816

Electricity	2016 $MTCO_2e$/Year	CEQA Baseline 2019	Proposed Project 2040	Increase 2019-2040
City	66,784	67,142	49,167	-17,975
SOI	0	7,589	5,263	-2,326
Total	66,784	74,731	54,430	-20,301

Natural Gas	2016 Therms	CEQA Baseline 2019	Proposed Project 2040	Increase 2019-2040
City - Residential	9,467,604	9,556,410	11,161,763	1,605,353
City - Nonresidential	5,687,627	5,705,600	6,255,128	549,529
City - TOTAL	15,155,231	15,262,010	17,416,892	2,154,882
SOI - Residential	0	2,148,399	2,310,916	162,517
SOI - Nonresidential	0	291,725	300,545	8,820
SOI- TOTAL	0	2,440,124	2,611,461	171,337
Total	15,155,231	17,702,133	20,028,352	2,326,219

Natural Gas	2016 $MTCO_2e$/Year	CEQA Baseline 2019	Proposed Project 2040	Increase 2019-2040
City	63,067	63,511	72,479	8,967
SOI	0	10,154	10,867	713
Total	63,067	73,666	83,346	9,680

Criteria Air Pollutants from Natural Gas

Rate	lbs/MBTU					
Natural Gas	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	0.01078431	0.09215686	0.03921569	0.00058824	0.00745098	0.00745098
Non-Residential	0.01078431	0.09803922	0.08235294	0.00058824	0.00745098	0.00745098
Source: CalEEMod Version 2016.2.2 (October 2017)						

	2016	CEQA Baseline	Proposed Project	Increase
City - Residential	9,467,604	9,556,410	11,161,763	1,605,353
City - Nonresidential	5,687,627	5,705,600	6,255,128	549,529
City - TOTAL	15,155,231	15,262,010	17,416,892	2,154,882
SOI - Residential	0	2,148,399	2,310,916	162,517
SOI - Nonresidential	0	291,725	300,545	8,820
SOI- TOTAL	0	2,440,124	2,611,461	171,337
Total	15,155,231	17,702,133	20,028,352	2,326,219

Natural Gas	2019 lbs/day					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
City	45	385	164	2	31	31
SOI	7	66	55	0	5	5
TOTAL	52	451	219	3	36	36

Natural Gas	Project 2040 lbs/day					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
City	51	440	187	3	36	36
SOI	8	70	59	0	5	5
TOTAL	59	510	246	3	41	41
Increase from Baseline	7	59	27	0	5	5

General Conversion Factors	
Mmbtu to Therm	0.1
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

Area Sources - Residential Consumer Product Use

Area Sources - Consumer Products

Source: CalEEMod Users Guide. Version 2016.3.2

Residential Consumer Product Use[a]

Emissions = EF x Building Area

EF = 2.14E-05 lbs/sqft/day

Sources/Notes:

a. California Emissions Estimator Model, Version 2016.3.2, Users Guide. Appendix A.

AVERAGE HOUSING SQFT ASSUMPTIONS

Year Structure was Built	Percent of Housing Stock [a]	Average Square Feet of New Single Family Homes[b]	Average Square Feet (Weighted)
2014 or Later	0.5%	2,617	13
2010 to 2013	1.0%	2,467	25
2000 to 2009	5.1%	2,404	123
1990 to 1999	8.7%	2,116	184
1980 to 1989	11.9%	1,819	216
1970 to 1979	17.7%	1,699	301
1960 to 1969	21.1%	1,715	362
1950 to 1959	17.2%	1,715	295
1940 to 1949	5.1%	1,715	87
1939 or earlier	11.7%	1,715	201
	100%		1,807

Sources/Notes:

a. United States Cenus Bureau, Selected Housing Characteristics, Marin Councy, 2018. Table DP04. American Community Survey 1-Year Estimates, Year structure built. https://data.census.gov/cedsci/table?q=Physical%20Housing%20Characteristics%20for%20Occupied%20Housing%20Units&hidePreview=false&tid=ACSDP1Y2018.DP04&t=Housing%20Units%3AHousing%3AYear%20Structure%20Built&vintage=2018&layer=VT_2018_050_00_PY_D1&cid=DP04_0016E&g=1600000US0668378_0500000US06041&moe=false

b. United States Census Bureau, Characteristics of New Housing, Characteristics of New Single-Family Houses Completed, Median and Average Square Feet by Location. https://www.census.gov/construction/chars/pdf/c25ann2016.pdf

	2019	2019	2019	2040	2040	2040
	CEQA Baseline	CEQA Baseline	CEQA Baseline	Proposed Project	Proposed Project	Proposed Project
	City	SOI	TOTAL	CITY	SOI	TOTAL
Housing Units	24,109	5,420	29,529	28,159	5,830	33,989
Residential SQFT	43,557,092	9,792,170	53,349,262	54,154,592	10,865,004	65,019,595
lbs VOC per day	932	210	1,142	1,159	233	1,391

Source

1 New housing units constructed post-2014 assumed to be 2,617 square feet (based on Source 2).

Area Sources - OFFROAD2017

Area Sources

Source: OFFROAD2017. https://www.arb.ca.gov/orion/ Marin County Year 2019

OFFROAD2017 Estimate based on:

Construction Equipment — Based on the percentage of housing permits in the City compared to the County of Marin (HUD 2020)

Light Commercial and Portable Equipment — Based on the percentage of employment in San Rafael compared to the County of Marin (US Census 2018)

Sources

Housing Permits

Source: Housing and Urban Development (HUD). 2020, Accessed May 19. SOCDS Building Permits Database. https://socds.huduser.gov/permits/

Employment

Source. U.S. Census Bureau. Longitudinal Employer-Household Dynamics. http://lehd.ces.census.gov/

2016	ROG Exhaust	NO_x Exhaust	CO Exhaust	SO_2 Exhaust	PM_{10} Exhaust	$PM_{2.5}$ Exhaust*	CO2
	lbs/day						MT/yr
Construction Equipment	3	9	118	0	1	1	201
Light Commercial Equipment	79	101	3,737	0	16	12	2,541
TOTAL	82	110	3,854	0	17	13	2,742
City	78	104	3,651	0	16	13	2,582
SOI	4	7	203	0	1	1	161

2040	Forecast Adjusted for:	ROG Exhaust	NO_x Exhaust	CO Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust*	CO2
		lbs/day						MT/yr
Construction Equipment	Similar to historic	3	9	118	0	1	1	201
Light Commercial Equipment	Proportional to employment growth	86	111	4,085	0	18	14	2,777
TOTAL		89	120	4,202	0	19	15	2,979
City		85	113	3,982	0	18	14	2,807
SOI		5	7	220	0	1	1	172

Marin County OFFROAD2017- 2016

Source: OFFROAD 2017 (ORION Web database)

Construction includes: Over 25 horsepower, self-propelled, diesel equipment only subjected to In-Use Regulation; AND Under 25 horsepower equipment not subject to the In-Use Regulation

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
Marin	2019	Construction and Mining	Aggregated	Aggregated	Diesel	0.00	0.04	0.03	0.00	0.00	0.00	5.88	1,948
Marin	2019	OFFROAD - Construction and Mining	Aggregated	Aggregated	Gasoline	0.02	0.02	0.81	0.00	0.01	0.01	1.94	641
Marin	2019	OFFROAD - Construction and Mining	Aggregated	Aggregated	Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.85	281
TOTAL CONSTRUCTION OFFROAD						0.02	0.06	0.84	0.00	0.01	0.01	8.67	2,870
ESTIMATED SAN RAFAEL						0.00	0.00	0.06	0.00	0.00	0.00	0.61	201
ESTIMATED SAN RAFAEL (lbs/day)						3	9	118	0	1	1	1217	
Marin	2019	OFFROAD - Light Commercial	Aggregated	Aggregated	Gasoline	0.09	0.08	4.61	0.00	0.02	0.01	11.61	3,844
Marin	2019	OFFROAD - Light Commercial	Aggregated	Aggregated	Diesel	0.01	0.04	0.04	0.00	0.00	0.00	4.99	1,651
Marin	2019	OFFROAD - Light Commercial	Aggregated	Aggregated	Nat Gas	0.00	0.01	0.11	0.00	0.00	0.00	2.93	970
TOTAL LIGHT COMMERCIAL + PORTABLE OFFROAD						0.10	0.13	4.75	0.00	0.02	0.02	19.53	6,465
ESTIMATED SAN RAFAEL						0.04	0.05	1.87	0.00	0.01	0.01	7.67	2,541
ESTIMATED SAN RAFAEL (lbs/day)						79	101	3737	0	16	12	15347	
TOTAL OFFROAD in the City						0	0	2	0	0	0	8	2,742

TOTAL UNITS: https://socds.huduser.gov/perr			**2017**	**2018**	**2019**	**Average**
Housing Permits in Marin County			94	160	240	
Housing Permits in San Rafael			3	11	10	
Percent in the City			11%	6%	4%	**7%**

	City	SOI	
	82%	18%	total units

		2019	City	SOI
Employment in the Marin County		112,468		
Employment in San Rafael + SOI		44,200	42,050	2,150
Percent in the City		39%	95%	5%

Transportation

San Rafael — TRANSPORTATION SECTOR

Source: EMFAC2017, Web Database - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Based on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) Global Warming Potentials (GWPs)

Note: MTons = metric tons; CO_2e = carbon dioxide-equivalent. Includes Pavley + California Advanced Clean Car Standards, the Low Carbon Fuel Standard (LCFS), on-road diesel fleet rules, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation.

Criteria Air Pollutant Emissions

	lbs/day					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Year 2019						
City	125	781	1,260	4	354	148
SOI	15	97	156	0	44	18
TOTAL	140	878	1,416	4	398	166
Year 2040						
City	96	317	3,978	16	372	151
SOI	11	36	457	2	43	17
TOTAL	107	353	4,435	18	415	169
CEQA Baseline in 2040						
City	92	304	3,815	15	357	145
SOI	11	38	474	2	44	18
TOTAL	104	341	4,289	17	402	163
Change from Existing Land Uses (2040 rates)						
City	4	13	163	1	15	6
SOI	0	-1	-16	0	-2	-1
TOTAL	4	12	147	1	14	6
Change from Existing (2019) Conditions [Doesn't account for existing regulations]						
City	-32	-477	2,555	11	3	-3
SOI	-4	-59	317	1	0	0
TOTAL	-36	-537	2,872	13	4	-3

Annual Criteria Air Pollutant Emissions

	Tons/year					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Year 2019	24	152	246	1	69	29
Year 2040	19	61	770	3	72	29
CEQA Baseline in 2040	18	59	744	3	70	28

GHG EMISSIONS

	MTons/year			
	N_2O	**CO_2**	**CH_4**	**CO_2e**
Year 2019				
City	8	373,265	9	375,518
SOI	1	46,364	1	46,644
Total	**9**	**419,628**	**10**	**422,162**
Year 2040				
City	2	277,064	4	277,721
SOI	0	31,862	0	31,938
Total	**2**	**308,926**	**4**	**309,659**
Change from Existing				
City	-6	-96,201	-5	-97,797
SOI	-1	-14,501	-1	-14,706
Total	**-6**	**-110,702**	**-5**	**-112,503**

Note: MTons = metric tons; CO_2e = carbon dioxide-equivalent.

San Rafael VMT

Source: F&P May 8, 2020

	Exiting (2019)			2040 General Plan			% Change VMT	Current General Plan		
	Daily VMT	Service Population	VMT/SP	Daily VMT	Service Population	VMT/SP		Daily VMT	Service Population	VMT/SP
City	3,214,988	103,280	31.1	3,352,369	115,340	29.1	4%	3,391,163	111,825	30.3
SOI	399,338	16,671	24.0	385,521	17,636	21.9	-3%	420,975	17,286	24.4
TOTAL	3,614,326	119,951	30.1	3,737,890	132,976	28.1	3%	3,812,138	129,111	29.5
Net				123,564	13,025	-2.0				

Notes: Total may not add to 100% due to rounding.

Year 2019 Existing: Criteria Air Pollutants

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).
Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

	Daily VMT	Emission year							
	3,614,326	Year 2019				lbs/day			
Vehicle Type	**Fuel Type**	**Speed**	**Percent of VMT**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	Dsl	40	0.02%	0.25	4.19	0.95	0.01	0.33	0.22
LDA	Dsl	40	0.95%	1.49	10.42	17.32	0.14	4.29	2.21
LDA	Gas	40	52.16%	0.00	0.00	0.00	0.00	185.98	73.77
LDA	Elec	0	1.38%	1.81	4.89	120.88	0.30	5.06	2.09
LDT1	Dsl	40	0.00%	0.04	0.19	0.21	0.00	0.04	0.03
LDT1	Gas	40	6.00%	0.00	0.00	0.00	0.00	21.39	8.48
LDT1	Elec	0	0.02%	0.06	0.16	3.10	0.01	0.08	0.03
LDT2	Dsl	40	0.24%	0.23	0.72	2.06	0.05	0.95	0.43
LDT2	Gas	40	21.03%	0.00	0.00	0.00	0.00	74.97	29.74
LDT2	Elec	0	0.11%	0.16	0.59	10.76	0.03	0.39	0.16
LHD1	Dsl	40	1.14%	8.32	230.17	42.80	0.40	9.96	5.08
LHD1	Gas	40	1.48%	5.51	24.90	147.40	0.85	10.12	4.24
LHD2	Dsl	40	0.35%	1.94	46.56	9.64	0.14	3.31	1.61
LHD2	Gas	40	0.19%	0.50	3.08	14.54	0.13	1.50	0.63
MCY	Gas	40	0.64%	95.86	38.37	839.90	0.09	0.88	0.39
MDV	Dsl	40	0.48%	0.41	1.91	6.77	0.13	1.90	0.87
MDV	Gas	40	11.66%	0.00	0.00	0.00	0.00	41.56	16.48
MDV	Elec	0	0.01%	0.03	0.11	1.70	0.00	0.05	0.02
MH	Dsl	40	0.02%	0.13	6.51	0.61	0.02	0.46	0.28
MH	Gas	40	0.06%	0.45	1.86	13.47	0.07	0.64	0.27
Motor Coach	Dsl	40	0.02%	0.27	5.20	1.14	0.02	0.29	0.18
OBUS	Gas	40	0.09%	0.41	2.64	13.71	0.11	1.00	0.42
SBUS	Dsl	40	0.05%	0.27	28.98	1.00	0.04	3.24	1.45
SBUS	Gas	40	0.02%	0.15	0.93	5.29	0.01	0.99	0.42
T6 CAIRP Heavy	Dsl	40	0.01%	0.04	1.03	0.15	0.01	0.14	0.07
T6 CAIRP Small	Dsl	40	0.00%	0.01	0.16	0.03	0.00	0.02	0.01
T6 Instate Constru	Dsl	40	0.01%	0.20	3.85	0.73	0.01	0.26	0.17
T6 Instate Constru	Dsl	40	0.06%	0.77	12.24	2.85	0.04	1.07	0.69
T6 Instate Heavy	Dsl	40	0.24%	3.21	58.82	11.82	0.16	4.52	2.88
T6 Instate Small	Dsl	40	0.39%	5.79	90.59	21.38	0.29	7.78	5.02
T6 OOS Heavy	Dsl	40	0.01%	0.02	0.60	0.09	0.00	0.08	0.04
T6 OOS Small	Dsl	40	0.00%	0.01	0.11	0.02	0.00	0.01	0.01
T6 Public	Dsl	40	0.05%	0.12	14.84	0.45	0.04	0.61	0.29
T6 Utility	Dsl	40	0.00%	0.01	0.38	0.02	0.00	0.04	0.02
T6TS	Gas	40	0.20%	2.04	10.00	62.80	0.24	2.24	0.93
T7 CAIRP	Dsl	40	0.13%	0.79	25.63	3.65	0.12	1.33	0.68
T7 CAIRP Constru	Dsl	40	0.01%	0.06	1.82	0.26	0.01	0.10	0.05
T7 NNOOS	Dsl	40	0.16%	1.03	27.55	4.79	0.14	1.72	0.92
T7 NOOS	Dsl	40	0.05%	0.32	10.10	1.45	0.05	0.53	0.27
T7 Other Port	Dsl	40	0.01%	0.13	3.72	0.42	0.01	0.13	0.06
T7 POAK	Dsl	40	0.07%	0.82	22.80	2.57	0.08	0.72	0.37
T7 Public	Dsl	40	0.04%	0.21	23.87	1.02	0.05	0.48	0.25
T7 Single	Dsl	40	0.08%	1.65	33.29	6.95	0.09	1.48	1.06
T7 Single Constru	Dsl	40	0.02%	0.44	9.63	1.89	0.03	0.41	0.29
T7 SWCV	Dsl	40	0.03%	0.02	22.46	0.06	0.08	0.25	0.11
T7 SWCV	NG	40	0.02%	0.16	2.39	9.97	0.00	0.20	0.08
T7 Tractor	Dsl	40	0.23%	3.46	74.99	14.23	0.24	3.19	2.01
T7 Tractor Constru	Dsl	40	0.02%	0.37	7.31	1.48	0.02	0.30	0.20
T7 Utility	Dsl	40	0.00%	0.00	0.28	0.02	0.00	0.01	0.00
T7IS	Gas	40	0.00%	0.10	0.86	10.33	0.01	0.02	0.01
UBUS	Dsl	40	0.03%	0.00	5.62	0.29	0.03	0.33	0.14
UBUS	Gas	40	0.04%	0.03	0.42	0.81	0.05	0.42	0.18
UBUS	NG	40	0.00%	0.00	0.02	2.41	0.00	0.01	0.00
			100%	**140.11**	**877.74**	**1,416.18**	**4.33**	**397.76**	**166.31**
			City	125	781	1,260	4	354	148
			SOI	15	97	156	0	44	18

Year 2019 GHG Emissions

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Francisco Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

N2O emissions were calculated using an off-model adjustment provided by CARB in the 2014 Scoping Plan Update. The off-model adjustment uses a linear regression correlating N2O with NOx. (N2O = 0.0416 x NOx)

VMT Adjustments to adjust Daily to Annual			
	Daily	Annual	Percentage
City	3,214,988	1,115,600,831	89%
SOI	399,338	138,570,291	11%
TOTAL	3,614,326	1,254,171,122	100%

[1.] Based on data provided Fehr & Peers.

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

					N_2O	CO_2 (Pavley)	CH_4	
	Annual VMT	Emission year			AR5 GWP	AR5 GWP	AR5 GWP	
	1,254,171,122	**Year 2019**			265	1	28	
Vehicle Type	**Fuel Type**	**Speed**	**Percent of VMT**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
All Other Buses	Dsl	40	0.02%	0.66	0.03	192	0.00	200
LDA	Dsl	40	0.95%	1.64	0.07	2,341	0.01	2,360
LDA	Elec	0	1.38%	0.00	0.00	0	0.00	0
LDA	Gas	40	52.16%	29.13	1.21	179,507	3.01	179,913
LDT1	Dsl	40	0.00%	0.03	0.00	10	0.00	10
LDT1	Elec	0	0.02%	0.00	0.00	0	0.00	0
LDT1	Gas	40	6.00%	6.97	0.29	23,684	0.64	23,779
LDT2	Dsl	40	0.24%	0.11	0.00	813	0.00	814
LDT2	Elec	0	0.11%	0.00	0.00	0	0.00	0
LDT2	Gas	40	21.03%	18.33	0.76	90,996	1.42	91,237
LHD1	Dsl	40	1.14%	36.23	1.51	6,547	0.06	6,948
LHD1	Gas	40	1.48%	3.92	0.16	13,418	0.19	13,467
LHD2	Dsl	40	0.35%	7.33	0.30	2,242	0.01	2,323
LHD2	Gas	40	0.19%	0.48	0.02	1,984	0.02	1,990
MCY	Gas	40	0.64%	6.04	0.25	1,213	2.31	1,344
MDV	Dsl	40	0.48%	0.30	0.01	2,120	0.00	2,123
MDV	Elec	0	0.01%	0.00	0.00	0	0.00	0
MDV	Gas	40	11.66%	13.70	0.57	60,301	1.08	60,483
MH	Dsl	40	0.02%	1.02	0.04	293	0.00	305
MH	Gas	40	0.06%	0.29	0.01	1,058	0.01	1,062
Motor Coach	Dsl	40	0.02%	0.82	0.03	277	0.00	286
OBUS	Gas	40	0.09%	0.41	0.02	1,678	0.02	1,683
SBUS	Dsl	40	0.05%	4.56	0.19	688	0.00	739
SBUS	Gas	40	0.02%	0.15	0.01	145	0.01	147
T6 CAIRP Heavy	Dsl	40	0.01%	0.16	0.01	109	0.00	111
T6 CAIRP Small	Dsl	40	0.00%	0.03	0.00	11	0.00	12
T6 Instate Construction Heavy	Dsl	40	0.01%	0.61	0.03	157	0.00	164
T6 Instate Construction Small	Dsl	40	0.06%	1.93	0.08	662	0.01	684
T6 Instate Heavy	Dsl	40	0.24%	9.26	0.39	2,693	0.02	2,796
T6 Instate Small	Dsl	40	0.39%	14.26	0.59	4,718	0.04	4,876
T6 OOS Heavy	Dsl	40	0.01%	0.09	0.00	66	0.00	67
T6 OOS Small	Dsl	40	0.00%	0.02	0.00	10	0.00	10
T6 Public	Dsl	40	0.05%	2.34	0.10	582	0.00	608
T6 Utility	Dsl	40	0.00%	0.06	0.00	41	0.00	42
T6TS	Gas	40	0.20%	1.57	0.07	3,707	0.07	3,726
T7 CAIRP	Dsl	40	0.13%	4.03	0.17	2,050	0.01	2,094
T7 CAIRP Construction	Dsl	40	0.01%	0.29	0.01	152	0.00	155
T7 NNOOS	Dsl	40	0.16%	4.34	0.18	2,392	0.01	2,440
T7 NOOS	Dsl	40	0.05%	1.59	0.07	806	0.00	823
T7 Other Port	Dsl	40	0.01%	0.59	0.02	238	0.00	245
T7 POAK	Dsl	40	0.07%	3.59	0.15	1,340	0.01	1,380
T7 Public	Dsl	40	0.04%	3.76	0.16	827	0.00	869

Year 2019 GHG Emissions

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

N2O emissions were calculated using an off-model adjustment provided by CARB in the 2014 Scoping Plan Update. The off-model adjustment uses a linear regression correlating N2O with NOx. (N2O = 0.0416 x NOx)

VMT Adjustments to adjust Daily to Annual			
	Daily	Annual	Percentage
City	3,214,988	1,115,600,831	89%
SOI	399,338	138,570,291	11%
TOTAL	3,614,326	1,254,171,122	100%

[1.] Based on data provided Fehr & Peers.

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

					N_2O	CO_2 (Pavley)	CH_4	
	Annual VMT	Emission year			AR5 GWP	AR5 GWP	AR5 GWP	
	1,254,171,122	**Year 2019**			265	1	28	
Vehicle Type	**Fuel Type**	**Speed**	**Percent of VMT**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
T7 Single	Dsl	40	0.08%	5.24	0.22	1,443	0.01	1,501
T7 Single Construction	Dsl	40	0.02%	1.52	0.06	417	0.00	434
T7 SWCV	Dsl	40	0.03%	3.54	0.15	1,326	0.00	1,365
T7 SWCV	NG	40	0.02%	0.38	0.02	803	0.53	822
T7 Tractor	Dsl	40	0.23%	11.80	0.49	3,893	0.03	4,024
T7 Tractor Construction	Dsl	40	0.02%	1.15	0.05	343	0.00	356
T7 Utility	Dsl	40	0.00%	0.04	0.00	19	0.00	20
T7IS	Gas	40	0.00%	0.13	0.01	90	0.00	91
UBUS	Dsl	40	0.03%	0.89	0.04	499	0.03	510
UBUS	Gas	40	0.04%	0.07	0.00	711	0.00	711
UBUS	NG	40	0.00%	0.00	0.00	16	0.04	17
			100%	**205.37**	**8.54**	**419,628**	**9.62**	**422,162**
			City	183	8	373,265	9	375,518
			SOI	23	1	46,364	1	46,644

Source: EMFAC2017 PL. 2019 Marin County

g/mile

calendar_year	season_month	sub_area	vehicle_class	Fuel	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX	VMT	%VMT Total
2019	Annual	Marin (SF)	All Other Buses	Dsl	40	0.19429114	3.21575928	0.7284625	0.00893753	0.012	0.13034	0.11168135	2.54E-01	0.003	0.05586	0.10685006	1.66E-01	936.8021541	0.00902432		465,795	0.0164%
2019	Annual	Marin (SF)	LDA	Dsl	40	0.01970372	0.13757679	0.22871219	0.00187531	0.008	0.03675	0.01197471	5.67E-02	0.002	0.01575	0.01145669	2.92E-02	196.4927369	0.0009152		27,053,824	0.9501%
2020	Annual	Marin (SF)	LDA	Elec						0.008	0.03675		4.48E-02	0.002	0.01575		1.78E-02				39,219,731	1.3774%
2019	Annual	Marin (SF)	LDA	Gas	40	0.01648107	0.04452854	1.10135185	0.0027564	0.008	0.03675	0.00139526	4.61E-02	0.002	0.01575	0.00128298	1.90E-02	274.4205384	0.00459978		1,485,107,751	52.1565%
2021	Annual	Marin (SF)	LDT1	Dsl	40	0.22788126	1.13678805	1.23624812	0.00346846	0.008	0.03675	0.17696186	2.22E-01	0.002	0.01575	0.16930657	1.87E-01	363.4204582	0.010584649		60,677	0.0021%
2023	Annual	Marin (SF)	LDT1	Elec						0.008	0.03675		4.47E-02	0.002	0.01575		1.77E-02				608,850	0.0214%
2022	Annual	Marin (SF)	LDT1	Gas	40	0.03371167	0.09260693	1.8192284	0.00317136	0.008	0.03675	0.0019586	4.67E-02	0.002	0.01575	0.00180116	1.96E-02	314.8029168	0.008530787		170,806,341	5.9987%
2019	Annual	Marin (SF)	LDT2	Dsl	40	0.01221015	0.03748737	0.10778477	0.00257402	0.008	0.03675	0.00484901	4.96E-02	0.002	0.01575	0.00463924	2.24E-02	269.702965	0.000567138		6,843,975	0.2404%
2020	Annual	Marin (SF)	LDT2	Elec						0.008	0.03675		4.47E-02	0.002	0.01575		1.77E-02				3,044,365	0.1069%
2019	Annual	Marin (SF)	LDT2	Gas	40	0.01921148	0.06950958	1.26339158	0.00346403	0.008	0.03675	0.00129744	4.60E-02	0.002	0.01575	0.00119306	1.89E-02	345.0664019	0.005385513		598,700,953	21.0262%
2019	Annual	Marin (SF)	LHD1	Dsl	40	0.09137911	2.52757453	0.470037	0.0043591	0.012	0.07644	0.02091151	1.09E-01	0.003	0.03276	0.02000689	5.58E-02	456.7412305	0.004244385		32,541,469	1.1428%
2019	Annual	Marin (SF)	LHD1	Gas	40	0.04666848	0.21086411	1.2481096	0.00722471	0.008	0.07644	0.00120872	8.56E-02	0.002	0.03276	0.00111309	3.59E-02	721.8395766	0.010272701		42,202,761	1.4821%
2019	Annual	Marin (SF)	LHD2	Dsl	40	0.06930696	1.6636995	0.34440727	0.004857	0.012	0.08918	0.01699812	1.18E-01	0.003	0.03822	0.01626279	5.75E-02	508.9105716	0.003219176		10,000,478	0.3512%
2019	Annual	Marin (SF)	LHD2	Gas	40	0.03280807	0.20139458	0.95251447	0.00825644	0.008	0.08918	0.00101277	9.82E-02	0.002	0.03822	0.00093121	4.12E-02	825.7492952	0.007993962		5,456,250	0.1916%
2019	Annual	Marin (SF)	MCY	Gas	40	1.89055294	0.7566666	16.5645221	0.00184374	0.004	0.01176	0.00166128	1.74E-02	0.001	0.00504	0.00156188	7.60E-03	151.9552518	0.288950515		18,119,241	0.6363%
2019	Annual	Marin (SF)	MDV	Dsl	40	0.01090742	0.05027778	0.17822807	0.00338387	0.008	0.03675	0.00535739	5.01E-02	0.002	0.01575	0.00512563	2.29E-02	354.5571526	0.000506629		13,574,065	0.4767%
2020	Annual	Marin (SF)	MDV	Elec						0.008	0.03675		4.47E-02	0.002	0.01575		1.77E-02				402,456	0.0141%
2019	Annual	Marin (SF)	MDV	Gas	40	0.02959589	0.09369082	1.50608534	0.00414128	0.008	0.03675	0.00142079	4.62E-02	0.002	0.01575	0.00130788	1.91E-02	412.5143498	0.007402383		331,880,252	11.6555%
2019	Annual	Marin (SF)	MH	Dsl	40	0.06487616	3.36264178	0.31415781	0.00919324	0.016	0.13034	0.09040878	2.37E-01	0.004	0.05586	0.08649773	1.46E-01	963.2559843	0.003013374		691,321	0.0243%
2019	Annual	Marin (SF)	MH	Gas	40	0.10093778	0.42054014	3.03742565	0.01518081	0.012	0.13034	0.00157236	1.44E-01	0.003	0.05586	0.00145102	6.03E-02	1516.102986	0.02054627		1,584,726	0.0557%
2019	Annual	Marin (SF)	Motor Coach	Dsl	40	0.2241614	4.27390891	0.93520325	0.01378003	0.012	0.13034	0.09282463	2.35E-01	0.003	0.05586	0.08880908	1.48E-01	1444.376562	0.010411716		434,717	0.0153%
2019	Annual	Marin (SF)	OBUS	Gas	40	0.05846972	0.37608034	1.95623467	0.01521951	0.012	0.13034	0.00061942	1.43E-01	0.003	0.05586	0.00056953	5.94E-02	1521.838709	0.013924127		2,503,917	0.0879%
2019	Annual	Marin (SF)	SBUS	Dsl	40	0.0662642	7.0972769	0.24497488	0.01021824	0.012	0.7448	0.03563791	7.92E-01	0.003	0.3192	0.03409623	3.56E-01	1071.041887	0.003077801		1,459,015	0.0512%
2019	Annual	Marin (SF)	SBUS	Gas	40	0.11302308	0.70938899	4.04445601	0.00709144	0.008	0.74479999	0.00140055	7.54E-01	0.002	0.3192	0.00128775	3.22E-01	703.8015813	0.025663593		467,280	0.0164%
2019	Annual	Marin (SF)	T6 CAIRP Heavy	Dsl	40	0.04526492	1.25896319	0.18496249	0.00811472	0.012	0.13034	0.02617494	1.69E-01	0.003	0.05586	0.02504263	8.39E-02	850.5579808	0.002102438		291,738	0.0102%
2019	Annual	Marin (SF)	T6 CAIRP Small	Dsl	40	0.12233002	2.13157858	0.44626767	0.00899587	0.012	0.13034	0.07202357	2.14E-01	0.003	0.05586	0.06890786	1.28E-01	942.916989	0.005681912		27,214	0.0010%
2019	Annual	Marin (SF)	T6 Instate Construction Heavy	Dsl	40	0.20003653	3.77310284	0.71792548	0.00933878	0.012	0.13034	0.11259439	2.55E-01	0.003	0.05586	0.10772361	1.67E-01	978.8598565	0.009291179		364,545	0.0128%
2019	Annual	Marin (SF)	T6 Instate Construction Small	Dsl	40	0.17577157	2.77642942	0.64575848	0.00910377	0.012	0.13034	0.1013404	2.44E-01	0.003	0.05586	0.09695646	1.56E-01	954.2269038	0.008164134		1,575,572	0.0553%
2019	Annual	Marin (SF)	T6 Instate Heavy	Dsl	40	0.1709998	3.13677499	0.63012611	0.00870521	0.012	0.13034	0.09892404	2.41E-01	0.003	0.05586	0.09464463	1.54E-01	912.4511	0.007942498		6,701,117	0.2353%
2019	Annual	Marin (SF)	T6 Instate Small	Dsl	40	0.18491506	2.89356595	0.68274759	0.00913388	0.012	0.13034	0.10603464	2.48E-01	0.003	0.05586	0.10144762	1.60E-01	957.3832341	0.008588826		11,187,995	0.3929%
2019	Annual	Marin (SF)	T6 OOS Heavy	Dsl	40	0.04535402	1.21504402	0.18609408	0.0080809	0.012	0.13034	0.02628676	1.69E-01	0.003	0.05586	0.02514961	8.40E-02	847.0130771	0.002106577		176,519	0.0062%
2019	Annual	Marin (SF)	T6 OOS Small	Dsl	40	0.08028151	1.53813878	0.30436632	0.00851224	0.012	0.13034	0.04728808	1.90E-01	0.003	0.05586	0.04524242	1.04E-01	892.224114	0.003728868		25,615	0.0009%
2019	Annual	Marin (SF)	T6 Public	Dsl	40	0.03110953	3.95335559	0.11894216	0.00940505	0.012	0.13034	0.01958305	1.62E-01	0.003	0.05586	0.0187359	7.76E-02	985.8060645	0.001444957		1,341,227	0.0471%
2019	Annual	Marin (SF)	T6 Utility	Dsl	40	0.01786507	1.33766915	0.07474452	0.00880884	0.012	0.13034	0.00738039	1.50E-01	0.003	0.05586	0.00706112	6.59E-02	923.3136923	0.000829786		101,035	0.0035%
2019	Annual	Marin (SF)	T6TS	Gas	40	0.13109333	0.64153884	4.02764121	0.01514179	0.012	0.13034	0.00107783	1.43E-01	0.003	0.05586	0.00099232	5.99E-02	1510.489519	0.027638146		5,571,771	0.1957%
2019	Annual	Marin (SF)	T7 CAIRP	Dsl	40	0.07786456	2.51645483	0.35871035	0.01219936	0.036	0.06174	0.03313078	1.31E-01	0.009	0.02646	0.03169756	6.72E-02	1278.695825	0.003616607		3,639,251	0.1278%
2019	Annual	Marin (SF)	T7 CAIRP Construction	Dsl	40	0.07747383	2.48299482	0.35615623	0.01255302	0.036	0.06174	0.03294264	1.31E-01	0.009	0.02646	0.03151755	6.70E-02	1315.765459	0.003598459		261,856	0.0092%
2019	Annual	Marin (SF)	T7 NNOOS	Dsl	40	0.08283451	2.21760156	0.38525637	0.01166758	0.036	0.06174	0.0406868	1.38E-01	0.009	0.02646	0.0389267	7.44E-02	1222.956519	0.003847449		4,439,714	0.1559%
2019	Annual	Marin (SF)	T7 NOOS	Dsl	40	0.07952739	2.52766827	0.3633257	0.01221726	0.036	0.06174	0.03367975	1.31E-01	0.009	0.02646	0.03222278	6.77E-02	1280.572469	0.003693841		1,428,107	0.0502%
2019	Annual	Marin (SF)	T7 Other Port	Dsl	40	0.12607113	3.69343981	0.4140522	0.01433929	0.036	0.06174	0.02901488	1.27E-01	0.009	0.02646	0.02775971	6.32E-02	1502.996363	0.005855677		359,910	0.0126%
2019	Annual	Marin (SF)	T7 POAK	Dsl	40	0.14822273	4.14520886	0.46711417	0.01477183	0.036	0.06174	0.03279097	1.31E-01	0.009	0.02646	0.03137245	6.68E-02	1548.33376	0.006884562		1,965,418	0.0690%
2019	Annual	Marin (SF)	T7 Public	Dsl	40	0.06133983	6.86432302	0.29374279	0.01442097	0.036	0.06174	0.03956357	1.37E-01	0.009	0.02646	0.03785207	7.33E-02	1511.558427	0.002849076		1,242,394	0.0436%
2019	Annual	Marin (SF)	T7 Single	Dsl	40	0.2701881	5.4497504	1.13817299	0.01431582	0.036	0.06174	0.14502695	2.43E-01	0.009	0.02646	0.13875315	1.74E-01	1500.536221	0.012549537		2,182,663	0.0767%
2019	Annual	Marin (SF)	T7 Single Construction	Dsl	40	0.24308823	5.29982837	1.03852032	0.01390742	0.036	0.06174	0.12813949	2.26E-01	0.009	0.02646	0.12259623	1.58E-01	1457.728954	0.011290819		649,615	0.0228%
2019	Annual	Marin (SF)	T7 SWCV	Dsl	40	0.00753406	10.2151326	0.02621159	0.0365465	0.036	0.06174	0.01373583	1.11E-01	0.009	0.02646	0.01314162	4.86E-02	3830.681899	0.000349938		785,670	0.0276%
2019	Annual	Marin (SF)	T7 SWCV	NG	40	0.08438349	1.25274738	5.22585381		0.036	0.06174	0.00543218	1.03E-01	0.009	0.02646	0.00519719	4.07E-02	2673.320431	1.753652024		681,834	0.0239%
2019	Annual	Marin (SF)	T7 Tractor	Dsl	40	0.19309038	4.18076741	0.79361834	0.01315663	0.036	0.06174	0.07991111	1.78E-01	0.009	0.02646	0.07645419	1.12E-01	1379.033915	0.008968548		6,409,618	0.2251%
2019	Annual	Marin (SF)	T7 Tractor Construction	Dsl	40	0.24352454	4.8735564	0.98483652	0.01387589	0.036	0.06174	0.10227319	2.00E-01	0.009	0.02646	0.0978489	1.33E-01	1454.424317	0.011311084		535,876	0.0188%
2019	Annual	Marin (SF)	T7 Utility	Dsl	40	0.04800747	3.4246991	0.1931391	0.01432743	0.036	0.06174	0.01507137	1.13E-01	0.009	0.02646	0.01441939	4.99E-02	1501.752966	0.002229822		29,090	0.0010%
2019	Annual	Marin (SF)	T7IS	Gas	40	0.35563743	2.93448768	35.3923314	0.02006223	0.02	0.06174	0.00053791	8.23E-02	0.005	0.02646	0.00049459	3.20E-02	1953.319287	0.076229781		104,331	0.0037%
2019	Annual	Marin (SF)	UBUS	Dsl	40	0.00097838	2.02272006	0.10520069	0.01088321	0.02951022	0.08030642	0.00720708	1.17E-01	0.00737756	0.03441704	0.00689531	4.87E-02	1140.328879	0.068475578		993,477	0.0349%
2019	Annual	Marin (SF)	UBUS	Gas	40	0.0090088	0.14110124	0.26863852	0.01501378	0.01183672	0.12866051	0.00049862	1.41E-01	0.00295918	0.05514022	0.00045846	5.86E-02	1504.084976	0.003310328		1,072,478	0.0377%
2019	Annual	Marin (SF)	UBUS	NG	40	0.05021646	0.28538864	29.9768746		0.02203653	0.10166872	0.00102237	1.25E-01	0.00550913	0.04357231	0.00097815	5.01E-02	1259.763914	3.514583382		28,736	0.0010%
																				Annual	2,847,404,594	

Source: EMFAC2017 PL 2019 Marin County | 2.205E-03 | lbs/Mile

calendar_year	season_month	sub_area	vehicle_class	Fuel	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
2019	Annual	Marin (SF)	All Other Buses	Dsl	40	4.283E-04	7.089E-03	1.606E-03	1.970E-05	2.646E-05	2.873E-04	2.462E-04	5.600E-04	6.614E-06	1.231E-04	2.356E-04	3.653E-04	2.065E+00	1.990E-05	0.000E+00
2019	Annual	Marin (SF)	LDA	Dsl	40	4.344E-05	3.033E-04	5.042E-04	4.134E-06	1.764E-05	8.102E-05	2.640E-05	1.251E-04	4.409E-06	3.472E-05	2.526E-05	6.439E-05	4.332E-01	2.018E-06	0.000E+00
2020	Annual	Marin (SF)	LDA	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2019	Annual	Marin (SF)	LDA	Gas	40	3.633E-05	9.817E-05	2.428E-03	6.077E-06	1.764E-05	8.102E-05	3.076E-06	1.017E-04	4.409E-06	3.472E-05	2.828E-06	4.196E-05	6.050E-01	1.014E-05	0.000E+00
2021	Annual	Marin (SF)	LDT1	Dsl	40	5.024E-04	2.506E-03	2.725E-03	7.647E-06	1.764E-05	8.102E-05	3.901E-04	4.888E-04	4.409E-06	3.472E-05	3.733E-04	4.124E-04	8.012E-01	2.333E-05	0.000E+00
2023	Annual	Marin (SF)	LDT1	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2022	Annual	Marin (SF)	LDT1	Gas	40	7.432E-05	2.042E-04	4.011E-03	6.992E-06	1.764E-05	8.102E-05	4.318E-06	1.030E-04	4.409E-06	3.472E-05	3.971E-06	4.310E-05	6.940E-01	1.881E-05	0.000E+00
2019	Annual	Marin (SF)	LDT2	Dsl	40	2.692E-05	8.264E-05	2.376E-04	5.675E-06	1.764E-05	8.102E-05	1.069E-05	1.093E-04	4.409E-06	3.472E-05	1.023E-05	4.936E-05	5.946E-01	1.250E-06	0.000E+00
2020	Annual	Marin (SF)	LDT2	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2019	Annual	Marin (SF)	LDT2	Gas	40	4.235E-05	1.532E-04	2.785E-03	7.637E-06	1.764E-05	8.102E-05	2.860E-06	1.015E-04	4.409E-06	3.472E-05	2.630E-06	4.176E-05	7.607E-01	1.187E-05	0.000E+00
2019	Annual	Marin (SF)	LHD1	Dsl	40	2.015E-04	5.572E-03	1.036E-03	9.610E-06	2.646E-05	1.685E-04	4.610E-05	2.411E-04	6.614E-06	7.222E-05	4.411E-05	1.229E-04	1.007E+00	9.357E-06	0.000E+00
2019	Annual	Marin (SF)	LHD1	Gas	40	1.029E-04	4.649E-04	2.752E-03	1.593E-05	1.764E-05	1.685E-04	2.665E-06	1.888E-04	4.409E-06	7.222E-05	2.454E-06	7.909E-05	1.591E+00	2.265E-05	0.000E+00
2019	Annual	Marin (SF)	LHD2	Dsl	40	1.528E-04	3.668E-03	7.593E-04	1.071E-05	2.646E-05	1.966E-04	3.747E-05	2.605E-04	6.614E-06	8.426E-05	3.585E-05	1.267E-04	1.122E+00	7.097E-06	0.000E+00
2019	Annual	Marin (SF)	LHD2	Gas	40	7.233E-05	4.440E-04	2.100E-03	1.820E-05	1.764E-05	1.966E-04	2.233E-06	2.165E-04	4.409E-06	8.426E-05	2.053E-06	9.072E-05	1.820E+00	1.762E-05	0.000E+00
2019	Annual	Marin (SF)	MCY	Gas	40	4.168E-03	1.668E-03	3.652E-02	4.065E-06	8.818E-06	2.593E-05	3.662E-06	3.841E-05	2.205E-06	1.111E-05	3.443E-06	1.676E-05	3.350E-01	6.370E-04	0.000E+00
2019	Annual	Marin (SF)	MDV	Dsl	40	2.405E-05	1.108E-04	3.929E-04	7.460E-06	1.764E-05	8.102E-05	1.181E-05	1.105E-04	4.409E-06	3.472E-05	1.130E-05	5.043E-05	7.817E-01	1.117E-06	0.000E+00
2020	Annual	Marin (SF)	MDV	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2019	Annual	Marin (SF)	MDV	Gas	40	6.525E-05	2.066E-04	3.320E-03	9.130E-06	1.764E-05	8.102E-05	3.132E-06	1.018E-04	4.409E-06	3.472E-05	2.883E-06	4.202E-05	9.094E-01	1.632E-05	0.000E+00
2019	Annual	Marin (SF)	MH	Dsl	40	1.430E-04	7.413E-03	6.926E-04	2.027E-05	3.527E-05	2.873E-04	1.993E-04	5.219E-04	8.818E-06	1.231E-04	1.907E-04	3.227E-04	2.124E+00	6.643E-06	0.000E+00
2019	Annual	Marin (SF)	MH	Gas	40	2.225E-04	9.271E-04	6.696E-03	3.347E-05	2.646E-05	2.873E-04	3.466E-06	3.173E-04	6.614E-06	1.231E-04	3.199E-06	1.330E-04	3.342E+00	4.530E-05	0.000E+00
2019	Annual	Marin (SF)	Motor Coach	Dsl	40	4.942E-04	9.422E-03	2.062E-03	3.038E-05	2.646E-05	2.873E-04	2.046E-04	5.184E-04	6.614E-06	1.231E-04	1.958E-04	3.256E-04	3.184E+00	2.295E-05	0.000E+00
2019	Annual	Marin (SF)	OBUS	Gas	40	1.289E-04	8.291E-04	4.313E-03	3.355E-05	2.646E-05	2.873E-04	1.366E-06	3.152E-04	6.614E-06	1.231E-04	1.256E-06	1.310E-04	3.355E+00	3.070E-05	0.000E+00
2019	Annual	Marin (SF)	SBUS	Dsl	40	1.461E-04	1.565E-02	5.401E-04	2.253E-05	2.646E-05	1.642E-03	7.857E-05	1.747E-03	6.614E-06	7.037E-04	7.517E-05	7.855E-04	2.361E+00	6.785E-06	0.000E+00
2019	Annual	Marin (SF)	SBUS	Gas	40	2.492E-04	1.564E-03	8.916E-03	1.563E-05	1.764E-05	1.642E-03	3.088E-06	1.663E-03	4.409E-06	7.037E-04	2.839E-06	7.110E-04	1.552E+00	5.658E-05	0.000E+00
2019	Annual	Marin (SF)	T6 CAIRP Heavy	Dsl	40	9.979E-05	2.776E-03	4.078E-04	1.789E-05	2.646E-05	2.873E-04	5.771E-05	3.715E-04	6.614E-06	1.231E-04	5.521E-05	1.850E-04	1.875E+00	4.635E-06	0.000E+00
2019	Annual	Marin (SF)	T6 CAIRP Small	Dsl	40	2.697E-04	4.699E-03	9.838E-04	1.983E-05	2.646E-05	2.873E-04	1.588E-04	4.726E-04	6.614E-06	1.231E-04	1.519E-04	2.817E-04	2.079E+00	1.253E-05	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Construction Heavy	Dsl	40	4.410E-04	8.318E-03	1.583E-03	2.059E-05	2.646E-05	2.873E-04	2.482E-04	5.620E-04	6.614E-06	1.231E-04	2.375E-04	3.673E-04	2.158E+00	2.048E-05	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Construction Small	Dsl	40	3.875E-04	6.121E-03	1.424E-03	2.007E-05	2.646E-05	2.873E-04	2.234E-04	5.372E-04	6.614E-06	1.231E-04	2.138E-04	3.435E-04	2.104E+00	1.800E-05	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Heavy	Dsl	40	3.770E-04	6.915E-03	1.389E-03	1.919E-05	2.646E-05	2.873E-04	2.181E-04	5.319E-04	6.614E-06	1.231E-04	2.087E-04	3.384E-04	2.012E+00	1.751E-05	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Small	Dsl	40	4.077E-04	6.379E-03	1.505E-03	2.014E-05	2.646E-05	2.873E-04	2.338E-04	5.476E-04	6.614E-06	1.231E-04	2.237E-04	3.534E-04	2.111E+00	1.893E-05	0.000E+00
2019	Annual	Marin (SF)	T6 OOS Heavy	Dsl	40	9.999E-05	2.679E-03	4.103E-04	1.782E-05	2.646E-05	2.873E-04	5.795E-05	3.718E-04	6.614E-06	1.231E-04	5.544E-05	1.852E-04	1.867E+00	4.644E-06	0.000E+00
2019	Annual	Marin (SF)	T6 OOS Small	Dsl	40	1.770E-04	3.391E-03	6.710E-04	1.877E-05	2.646E-05	2.873E-04	1.043E-04	4.181E-04	6.614E-06	1.231E-04	9.974E-05	2.295E-04	1.967E+00	8.221E-06	0.000E+00
2019	Annual	Marin (SF)	T6 Public	Dsl	40	6.858E-05	8.716E-03	2.622E-04	2.073E-05	2.646E-05	2.873E-04	4.317E-05	3.570E-04	6.614E-06	1.231E-04	4.131E-05	1.711E-04	2.173E+00	3.186E-06	0.000E+00
2019	Annual	Marin (SF)	T6 Utility	Dsl	40	3.939E-05	2.949E-03	1.648E-04	1.942E-05	2.646E-05	2.873E-04	1.627E-05	3.301E-04	6.614E-06	1.231E-04	1.557E-05	1.453E-04	2.036E+00	1.829E-06	0.000E+00
2019	Annual	Marin (SF)	T6TS	Gas	40	2.890E-04	1.414E-03	8.879E-03	3.338E-05	2.646E-05	2.873E-04	2.376E-06	3.162E-04	6.614E-06	1.231E-04	2.188E-06	1.320E-04	3.330E+00	6.093E-05	0.000E+00
2019	Annual	Marin (SF)	T7 CAIRP	Dsl	40	1.717E-04	5.548E-03	7.908E-04	2.689E-05	7.937E-05	1.361E-04	7.304E-05	2.885E-04	1.984E-05	5.833E-05	6.988E-05	1.481E-04	2.819E+00	7.973E-06	0.000E+00
2019	Annual	Marin (SF)	T7 CAIRP Construction	Dsl	40	1.708E-04	5.474E-03	7.852E-04	2.767E-05	7.937E-05	1.361E-04	7.263E-05	2.881E-04	1.984E-05	5.833E-05	6.948E-05	1.477E-04	2.901E+00	7.933E-06	0.000E+00
2019	Annual	Marin (SF)	T7 NNOOS	Dsl	40	1.826E-04	4.889E-03	8.493E-04	2.572E-05	7.937E-05	1.361E-04	8.970E-05	3.052E-04	1.984E-05	5.833E-05	8.582E-05	1.640E-04	2.696E+00	8.482E-06	0.000E+00
2019	Annual	Marin (SF)	T7 NOOS	Dsl	40	1.753E-04	5.572E-03	8.010E-04	2.693E-05	7.937E-05	1.361E-04	7.425E-05	2.897E-04	1.984E-05	5.833E-05	7.104E-05	1.492E-04	2.823E+00	8.143E-06	0.000E+00
2019	Annual	Marin (SF)	T7 Other Port	Dsl	40	2.779E-04	8.143E-03	9.128E-04	3.161E-05	7.937E-05	1.361E-04	6.397E-05	2.794E-04	1.984E-05	5.833E-05	6.120E-05	1.394E-04	3.314E+00	1.291E-05	0.000E+00
2019	Annual	Marin (SF)	T7 POAK	Dsl	40	3.268E-04	9.139E-03	1.030E-03	3.257E-05	7.937E-05	1.361E-04	7.229E-05	2.878E-04	1.984E-05	5.833E-05	6.916E-05	1.473E-04	3.413E+00	1.518E-05	0.000E+00
2019	Annual	Marin (SF)	T7 Public	Dsl	40	1.352E-04	1.513E-02	6.476E-04	3.179E-05	7.937E-05	1.361E-04	8.722E-05	3.027E-04	1.984E-05	5.833E-05	8.345E-05	1.616E-04	3.332E+00	6.281E-06	0.000E+00
2019	Annual	Marin (SF)	T7 Single	Dsl	40	5.957E-04	1.201E-02	2.509E-03	3.156E-05	7.937E-05	1.361E-04	3.197E-04	5.352E-04	1.984E-05	5.833E-05	3.059E-04	3.841E-04	3.308E+00	2.767E-05	0.000E+00
2019	Annual	Marin (SF)	T7 Single Construction	Dsl	40	5.359E-04	1.168E-02	2.290E-03	3.066E-05	7.937E-05	1.361E-04	2.825E-04	4.980E-04	1.984E-05	5.833E-05	2.703E-04	3.485E-04	3.214E+00	2.489E-05	0.000E+00
2019	Annual	Marin (SF)	T7 SWCV	Dsl	40	1.661E-05	2.252E-02	5.779E-05	8.057E-05	7.937E-05	1.361E-04	3.028E-05	2.458E-04	1.984E-05	5.833E-05	2.897E-05	1.071E-04	8.445E+00	7.715E-07	0.000E+00
2019	Annual	Marin (SF)	T7 SWCV	NG	40	1.860E-04	2.762E-03	1.152E-02	0.000E+00	7.937E-05	1.361E-04	1.198E-05	2.275E-04	1.984E-05	5.833E-05	1.146E-05	8.963E-05	5.894E+00	3.866E-03	0.000E+00
2019	Annual	Marin (SF)	T7 Tractor	Dsl	40	4.257E-04	9.217E-03	1.750E-03	2.901E-05	7.937E-05	1.361E-04	1.762E-04	3.916E-04	1.984E-05	5.833E-05	1.686E-04	2.467E-04	3.040E+00	1.977E-05	0.000E+00
2019	Annual	Marin (SF)	T7 Tractor Construction	Dsl	40	5.369E-04	1.074E-02	2.171E-03	3.059E-05	7.937E-05	1.361E-04	2.255E-04	4.409E-04	1.984E-05	5.833E-05	2.157E-04	2.939E-04	3.206E+00	2.494E-05	0.000E+00
2019	Annual	Marin (SF)	T7 Utility	Dsl	40	1.058E-04	7.550E-03	4.258E-04	3.159E-05	7.937E-05	1.361E-04	3.323E-05	2.487E-04	1.984E-05	5.833E-05	3.179E-05	1.100E-04	3.311E+00	4.916E-06	0.000E+00
2019	Annual	Marin (SF)	T7IS	Gas	40	7.840E-04	6.469E-03	7.803E-02	4.423E-05	4.409E-05	1.361E-04	1.186E-06	1.814E-04	1.102E-05	5.833E-05	1.090E-06	7.045E-05	4.306E+00	1.681E-04	0.000E+00
2019	Annual	Marin (SF)	UBUS	Dsl	40	2.157E-06	4.459E-03	2.319E-04	2.399E-05	6.506E-05	1.770E-04	1.589E-05	2.580E-04	1.626E-05	7.588E-05	1.520E-05	1.073E-04	2.514E+00	1.510E-04	0.000E+00
2019	Annual	Marin (SF)	UBUS	Gas	40	1.986E-05	3.111E-04	5.922E-04	3.310E-05	2.610E-05	2.836E-04	1.099E-06	3.108E-04	6.524E-06	1.216E-04	1.011E-06	1.291E-04	3.316E+00	7.298E-06	0.000E+00
2019	Annual	Marin (SF)	UBUS	NG	40	1.107E-04	6.292E-04	6.609E-02	0.000E+00	4.858E-05	2.241E-04	2.254E-06	2.750E-04	1.215E-05	9.606E-05	2.156E-06	1.104E-04	2.777E+00	7.748E-03	0.000E+00

Source: EMFAC2017 PL. 2019 Marin County | 1.0E-06 | MTons/Mile

calendar_year	season_month	sub_area	vehicle_class	Fuel	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
2019	Annual	Marin (SF)	All Other Buses	Dsl	40	1.943E-07	3.216E-06	7.285E-07	8.938E-09	1.200E-08	1.303E-07	1.117E-07	2.540E-07	3.000E-09	5.586E-08	1.069E-07	1.657E-07	9.368E-04	9.024E-09	0.000E+00
2019	Annual	Marin (SF)	LDA	Dsl	40	1.970E-08	1.376E-07	2.287E-07	1.875E-09	8.000E-09	3.675E-08	1.197E-08	5.672E-08	2.000E-09	1.575E-08	1.146E-08	2.921E-08	1.965E-04	9.152E-10	0.000E+00
2020	Annual	Marin (SF)	LDA	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2019	Annual	Marin (SF)	LDA	Gas	40	1.648E-08	4.453E-08	1.101E-06	2.756E-09	8.000E-09	3.675E-08	1.395E-09	4.615E-08	2.000E-09	1.575E-08	1.283E-09	1.903E-08	2.744E-04	4.600E-09	0.000E+00
2021	Annual	Marin (SF)	LDT1	Dsl	40	2.279E-07	1.137E-06	1.236E-06	3.468E-09	8.000E-09	3.675E-08	1.770E-07	2.217E-07	2.000E-09	1.575E-08	1.693E-07	1.871E-07	3.634E-04	1.058E-08	0.000E+00
2023	Annual	Marin (SF)	LDT1	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2022	Annual	Marin (SF)	LDT1	Gas	40	3.371E-08	9.261E-08	1.819E-06	3.171E-09	8.000E-09	3.675E-08	1.959E-09	4.671E-08	2.000E-09	1.575E-08	1.801E-09	1.955E-08	3.148E-04	8.531E-09	0.000E+00
2019	Annual	Marin (SF)	LDT2	Dsl	40	1.221E-08	3.749E-08	1.078E-07	2.574E-09	8.000E-09	3.675E-08	4.849E-09	4.960E-08	2.000E-09	1.575E-08	4.639E-09	2.239E-08	2.697E-04	5.671E-10	0.000E+00
2020	Annual	Marin (SF)	LDT2	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2019	Annual	Marin (SF)	LDT2	Gas	40	1.921E-08	6.951E-08	1.263E-06	3.464E-09	8.000E-09	3.675E-08	1.297E-09	4.605E-08	2.000E-09	1.575E-08	1.193E-09	1.894E-08	3.451E-04	5.386E-09	0.000E+00
2019	Annual	Marin (SF)	LHD1	Dsl	40	9.138E-08	2.528E-06	4.700E-07	4.359E-09	1.200E-08	7.644E-08	2.091E-08	1.094E-07	3.000E-09	3.276E-08	2.001E-08	5.577E-08	4.567E-04	4.244E-09	0.000E+00
2019	Annual	Marin (SF)	LHD1	Gas	40	4.667E-08	2.109E-07	1.248E-06	7.225E-09	8.000E-09	7.644E-08	1.209E-09	8.565E-08	2.000E-09	3.276E-08	1.113E-09	3.587E-08	7.218E-04	1.027E-08	0.000E+00
2019	Annual	Marin (SF)	LHD2	Dsl	40	6.931E-08	1.664E-06	3.444E-07	4.857E-09	1.200E-08	8.918E-08	1.700E-08	1.182E-07	3.000E-09	3.822E-08	1.626E-08	5.748E-08	5.089E-04	3.219E-09	0.000E+00
2019	Annual	Marin (SF)	LHD2	Gas	40	3.281E-08	2.014E-07	9.525E-07	8.256E-09	8.000E-09	8.918E-08	1.013E-09	9.819E-08	2.000E-09	3.822E-08	9.312E-10	4.115E-08	8.257E-04	7.994E-09	0.000E+00
2019	Annual	Marin (SF)	MCY	Gas	40	1.891E-06	7.567E-07	1.656E-05	1.844E-09	4.000E-09	1.176E-08	1.661E-09	1.742E-08	1.000E-09	5.040E-09	1.562E-09	7.602E-09	1.520E-04	2.890E-07	0.000E+00
2019	Annual	Marin (SF)	MDV	Dsl	40	1.091E-08	5.028E-08	1.782E-07	3.384E-09	8.000E-09	3.675E-08	5.357E-09	5.011E-08	2.000E-09	1.575E-08	5.126E-09	2.288E-08	3.546E-04	5.066E-10	0.000E+00
2020	Annual	Marin (SF)	MDV	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2019	Annual	Marin (SF)	MDV	Gas	40	2.960E-08	9.369E-08	1.506E-06	4.141E-09	8.000E-09	3.675E-08	1.421E-09	4.617E-08	2.000E-09	1.575E-08	1.308E-09	1.906E-08	4.125E-04	7.402E-09	0.000E+00
2019	Annual	Marin (SF)	MH	Dsl	40	6.488E-08	3.363E-06	3.142E-07	9.193E-09	1.600E-08	1.303E-07	9.041E-08	2.367E-07	4.000E-09	5.586E-08	8.650E-08	1.464E-07	9.633E-04	3.013E-09	0.000E+00
2019	Annual	Marin (SF)	MH	Gas	40	1.009E-07	4.205E-07	3.037E-06	1.518E-08	1.200E-08	1.303E-07	1.572E-09	1.439E-07	3.000E-09	5.586E-08	1.451E-09	6.031E-08	1.516E-03	2.055E-08	0.000E+00
2019	Annual	Marin (SF)	Motor Coach	Dsl	40	2.242E-07	4.274E-06	9.352E-07	1.378E-08	1.200E-08	1.303E-07	9.282E-08	2.352E-07	3.000E-09	5.586E-08	8.881E-08	1.477E-07	1.444E-03	1.041E-08	0.000E+00
2019	Annual	Marin (SF)	OBUS	Gas	40	5.847E-08	3.761E-07	1.956E-06	1.522E-08	1.200E-08	1.303E-07	6.194E-10	1.430E-07	3.000E-09	5.586E-08	5.695E-10	5.943E-08	1.522E-03	1.392E-08	0.000E+00
2019	Annual	Marin (SF)	SBUS	Dsl	40	6.626E-08	7.097E-06	2.450E-07	1.022E-08	1.200E-08	7.448E-07	3.564E-08	7.924E-07	3.000E-09	3.192E-07	3.410E-08	3.563E-07	1.071E-03	3.078E-09	0.000E+00
2019	Annual	Marin (SF)	SBUS	Gas	40	1.130E-07	7.094E-07	4.044E-06	7.091E-09	8.000E-09	7.448E-07	1.401E-09	7.542E-07	2.000E-09	3.192E-07	1.288E-09	3.225E-07	7.038E-04	2.566E-08	0.000E+00
2019	Annual	Marin (SF)	T6 CAIRP Heavy	Dsl	40	4.526E-08	1.259E-06	1.850E-07	8.115E-09	1.200E-08	1.303E-07	2.617E-08	1.685E-07	3.000E-09	5.586E-08	2.504E-08	8.390E-08	8.506E-04	2.102E-09	0.000E+00
2019	Annual	Marin (SF)	T6 CAIRP Small	Dsl	40	1.223E-07	2.132E-06	4.463E-07	8.996E-09	1.200E-08	1.303E-07	7.202E-08	2.144E-07	3.000E-09	5.586E-08	6.891E-08	1.278E-07	9.429E-04	5.682E-09	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Construction Heavy	Dsl	40	2.000E-07	3.773E-06	7.179E-07	9.339E-09	1.200E-08	1.303E-07	1.126E-07	2.549E-07	3.000E-09	5.586E-08	1.077E-07	1.666E-07	9.789E-04	9.291E-09	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Construction Small	Dsl	40	1.758E-07	2.776E-06	6.458E-07	9.104E-09	1.200E-08	1.303E-07	1.013E-07	2.437E-07	3.000E-09	5.586E-08	9.696E-08	1.558E-07	9.542E-04	8.164E-09	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Heavy	Dsl	40	1.710E-07	3.137E-06	6.301E-07	8.705E-09	1.200E-08	1.303E-07	9.892E-08	2.413E-07	3.000E-09	5.586E-08	9.464E-08	1.535E-07	9.125E-04	7.942E-09	0.000E+00
2019	Annual	Marin (SF)	T6 Instate Small	Dsl	40	1.849E-07	2.894E-06	6.827E-07	9.134E-09	1.200E-08	1.303E-07	1.060E-07	2.484E-07	3.000E-09	5.586E-08	1.014E-07	1.603E-07	9.574E-04	8.589E-09	0.000E+00
2019	Annual	Marin (SF)	T6 OOS Heavy	Dsl	40	4.535E-08	1.215E-06	1.861E-07	8.081E-09	1.200E-08	1.303E-07	2.629E-08	1.686E-07	3.000E-09	5.586E-08	2.515E-08	8.401E-08	8.470E-04	2.107E-09	0.000E+00
2019	Annual	Marin (SF)	T6 OOS Small	Dsl	40	8.028E-08	1.538E-06	3.044E-07	8.512E-09	1.200E-08	1.303E-07	4.729E-08	1.896E-07	3.000E-09	5.586E-08	4.524E-08	1.041E-07	8.922E-04	3.729E-09	0.000E+00
2019	Annual	Marin (SF)	T6 Public	Dsl	40	3.111E-08	3.953E-06	1.189E-07	9.405E-09	1.200E-08	1.303E-07	1.958E-08	1.619E-07	3.000E-09	5.586E-08	1.874E-08	7.760E-08	9.858E-04	1.445E-09	0.000E+00
2019	Annual	Marin (SF)	T6 Utility	Dsl	40	1.787E-08	1.338E-06	7.474E-08	8.809E-09	1.200E-08	1.303E-07	7.380E-09	1.497E-07	3.000E-09	5.586E-08	7.061E-09	6.592E-08	9.233E-04	8.298E-10	0.000E+00
2019	Annual	Marin (SF)	T6TS	Gas	40	1.311E-07	6.415E-07	4.028E-06	1.514E-08	1.200E-08	1.303E-07	1.078E-09	1.434E-07	3.000E-09	5.586E-08	9.923E-10	5.985E-08	1.510E-03	2.764E-08	0.000E+00
2019	Annual	Marin (SF)	T7 CAIRP	Dsl	40	7.786E-08	2.516E-06	3.587E-07	1.220E-08	3.600E-08	6.174E-08	3.313E-08	1.309E-07	9.000E-09	2.646E-08	3.170E-08	6.716E-08	1.279E-03	3.617E-09	0.000E+00
2019	Annual	Marin (SF)	T7 CAIRP Construction	Dsl	40	7.747E-08	2.483E-06	3.562E-07	1.255E-08	3.600E-08	6.174E-08	3.294E-08	1.307E-07	9.000E-09	2.646E-08	3.152E-08	6.698E-08	1.316E-03	3.598E-09	0.000E+00
2019	Annual	Marin (SF)	T7 NNOOS	Dsl	40	8.283E-08	2.218E-06	3.853E-07	1.167E-08	3.600E-08	6.174E-08	4.069E-08	1.384E-07	9.000E-09	2.646E-08	3.893E-08	7.439E-08	1.223E-03	3.847E-09	0.000E+00
2019	Annual	Marin (SF)	T7 NOOS	Dsl	40	7.953E-08	2.528E-06	3.633E-07	1.222E-08	3.600E-08	6.174E-08	3.368E-08	1.314E-07	9.000E-09	2.646E-08	3.222E-08	6.768E-08	1.281E-03	3.694E-09	0.000E+00
2019	Annual	Marin (SF)	T7 Other Port	Dsl	40	1.261E-07	3.693E-06	4.141E-07	1.434E-08	3.600E-08	6.174E-08	2.901E-08	1.268E-07	9.000E-09	2.646E-08	2.776E-08	6.322E-08	1.503E-03	5.856E-09	0.000E+00
2019	Annual	Marin (SF)	T7 POAK	Dsl	40	1.482E-07	4.145E-06	4.671E-07	1.477E-08	3.600E-08	6.174E-08	3.279E-08	1.305E-07	9.000E-09	2.646E-08	3.137E-08	6.683E-08	1.548E-03	6.885E-09	0.000E+00
2019	Annual	Marin (SF)	T7 Public	Dsl	40	6.134E-08	6.864E-06	2.937E-07	1.442E-08	3.600E-08	6.174E-08	3.956E-08	1.373E-07	9.000E-09	2.646E-08	3.785E-08	7.331E-08	1.512E-03	2.849E-09	0.000E+00
2019	Annual	Marin (SF)	T7 Single	Dsl	40	2.702E-07	5.450E-06	1.138E-06	1.432E-08	3.600E-08	6.174E-08	1.450E-07	2.428E-07	9.000E-09	2.646E-08	1.388E-07	1.742E-07	1.501E-03	1.255E-08	0.000E+00
2019	Annual	Marin (SF)	T7 Single Construction	Dsl	40	2.431E-07	5.300E-06	1.039E-06	1.391E-08	3.600E-08	6.174E-08	1.281E-07	2.259E-07	9.000E-09	2.646E-08	1.226E-07	1.581E-07	1.458E-03	1.129E-08	0.000E+00
2019	Annual	Marin (SF)	T7 SWCV	Dsl	40	7.534E-09	1.022E-05	2.621E-08	3.655E-08	3.600E-08	6.174E-08	1.374E-08	1.115E-07	9.000E-09	2.646E-08	1.314E-08	4.860E-08	3.831E-03	3.499E-10	0.000E+00
2019	Annual	Marin (SF)	T7 SWCV	NG	40	8.438E-08	1.253E-06	5.226E-06	0.000E+00	3.600E-08	6.174E-08	5.432E-09	1.032E-07	9.000E-09	2.646E-08	5.197E-09	4.066E-08	2.673E-03	1.754E-06	0.000E+00
2019	Annual	Marin (SF)	T7 Tractor	Dsl	40	1.931E-07	4.181E-06	7.936E-07	1.316E-08	3.600E-08	6.174E-08	7.991E-08	1.777E-07	9.000E-09	2.646E-08	7.645E-08	1.119E-07	1.379E-03	8.969E-09	0.000E+00
2019	Annual	Marin (SF)	T7 Tractor Construction	Dsl	40	2.435E-07	4.874E-06	9.848E-07	1.388E-08	3.600E-08	6.174E-08	1.023E-07	2.000E-07	9.000E-09	2.646E-08	9.785E-08	1.333E-07	1.454E-03	1.131E-08	0.000E+00
2019	Annual	Marin (SF)	T7 Utility	Dsl	40	4.801E-08	3.425E-06	1.931E-07	1.433E-08	3.600E-08	6.174E-08	1.507E-08	1.128E-07	9.000E-09	2.646E-08	1.442E-08	4.988E-08	1.502E-03	2.230E-09	0.000E+00
2019	Annual	Marin (SF)	T7IS	Gas	40	3.556E-07	2.934E-06	3.539E-05	2.006E-08	2.000E-08	6.174E-08	5.379E-10	8.228E-08	5.000E-09	2.646E-08	4.946E-10	3.195E-08	1.953E-03	7.623E-08	0.000E+00
2019	Annual	Marin (SF)	UBUS	Dsl	40	9.784E-10	2.023E-06	1.052E-07	1.088E-08	2.951E-08	8.031E-08	7.207E-09	1.170E-07	7.378E-09	3.442E-08	6.895E-09	4.869E-08	1.140E-03	6.848E-08	0.000E+00
2019	Annual	Marin (SF)	UBUS	Gas	40	9.009E-09	1.411E-07	2.686E-07	1.501E-08	1.184E-08	1.287E-07	4.986E-10	1.410E-07	2.959E-09	5.514E-08	4.585E-10	5.856E-08	1.504E-03	3.310E-09	0.000E+00
2019	Annual	Marin (SF)	UBUS	NG	40	5.022E-08	2.854E-07	2.998E-05	0.000E+00	2.204E-08	1.017E-07	1.022E-09	1.247E-07	5.509E-09	4.357E-08	9.781E-10	5.006E-08	1.260E-03	3.515E-06	0.000E+00

Existing with Year 2040 Rates: Criteria Air Pollutants

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

		Emission year							
3,614,326		**Year 2040**				**lbs/day**			
Vehicle Type	**Fuel Type**	**Speed**	**Percent of VMT**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	Dsl	40	0.04%	0.02	2.43	0.18	0.02	0.44	0.19
LDA	Dsl	40	0.65%	0.19	0.46	6.24	0.07	2.45	1.00
LDA	Elec	0	3.87%	0.00	0.00	0.00	0.00	14.16	5.62
LDA	Gas	40	52.06%	7.45	48.73	1,969.56	7.78	192.68	77.48
LDT1	Dsl	40	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
LDT1	Elec	0	0.25%	0.00	0.00	0.00	0.00	0.93	0.37
LDT1	Gas	40	5.93%	0.97	6.09	229.05	1.02	21.96	8.84
LDT2	Dsl	40	0.19%	0.17	0.35	1.87	0.03	0.77	0.34
LDT2	Elec	0	0.63%	0.00	0.00	0.00	0.00	2.31	0.91
LDT2	Gas	40	18.13%	3.89	18.50	800.64	3.08	67.15	27.02
LHD1	Dsl	40	1.20%	3.33	14.37	15.86	0.33	9.11	4.03
LHD1	Gas	40	1.21%	0.28	2.86	12.28	0.56	8.22	3.43
LHD2	Dsl	40	0.47%	1.30	5.79	6.20	0.14	4.25	2.00
LHD2	Gas	40	0.18%	0.04	0.36	1.80	0.10	1.42	0.59
MCY	Gas	40	0.59%	81.18	34.56	668.64	0.09	0.83	0.37
MDV	Dsl	40	0.41%	0.14	0.29	4.48	0.07	1.55	0.64
MDV	Elec	0	0.46%	0.00	0.00	0.00	0.00	1.67	0.66
MDV	Gas	40	11.17%	2.58	12.51	499.16	2.28	41.36	16.65
MH	Dsl	40	0.03%	0.07	3.54	0.24	0.02	0.35	0.17
MH	Gas	40	0.06%	0.03	0.30	0.78	0.05	0.64	0.27
Motor Coach	Dsl	40	0.02%	0.02	1.88	0.21	0.01	0.23	0.10
OBUS	Gas	40	0.05%	0.05	0.38	1.53	0.05	0.56	0.23
SBUS	Dsl	40	0.05%	0.04	3.41	0.27	0.03	3.06	1.31
SBUS	Gas	40	0.04%	0.02	0.22	0.54	0.02	2.17	0.93
T6 CAIRP Heavy	Dsl	40	0.01%	0.00	0.62	0.05	0.01	0.14	0.06
T6 CAIRP Small	Dsl	40	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Construction Heavy	Dsl	40	0.02%	0.01	1.56	0.11	0.01	0.25	0.11
T6 Instate Construction Small	Dsl	40	0.09%	0.04	5.43	0.43	0.05	1.09	0.47
T6 Instate Heavy	Dsl	40	0.28%	0.13	17.88	1.35	0.14	3.23	1.40
T6 Instate Small	Dsl	40	0.37%	0.16	21.76	1.72	0.19	4.33	1.86
T6 OOS Heavy	Dsl	40	0.01%	0.00	0.41	0.03	0.00	0.09	0.04
T6 OOS Small	Dsl	40	0.00%	0.00	0.07	0.01	0.00	0.01	0.01
T6 Public	Dsl	40	0.07%	0.03	3.69	0.29	0.03	0.77	0.33
T6 Utility	Dsl	40	0.00%	0.00	0.15	0.01	0.00	0.05	0.02
T6TS	Gas	40	0.23%	0.15	1.08	3.82	0.21	2.63	1.09
T7 CAIRP	Dsl	40	0.16%	0.17	18.17	1.98	0.10	1.38	0.58
T7 CAIRP Construction	Dsl	40	0.02%	0.02	1.77	0.19	0.01	0.13	0.06
T7 NNOOS	Dsl	40	0.20%	0.19	20.18	2.27	0.12	1.67	0.69
T7 NOOS	Dsl	40	0.06%	0.07	7.12	0.78	0.04	0.54	0.23
T7 Other Port	Dsl	40	0.02%	0.02	2.13	0.23	0.01	0.15	0.06
T7 POAK	Dsl	40	0.16%	0.18	20.12	2.13	0.11	1.41	0.60
T7 Public	Dsl	40	0.07%	0.08	7.53	0.71	0.05	0.58	0.23
T7 Single	Dsl	40	0.08%	0.08	8.19	0.93	0.06	0.71	0.29
T7 Single Construction	Dsl	40	0.04%	0.04	3.66	0.42	0.03	0.32	0.13
T7 SWCV	Dsl	40	0.00%	0.00	2.21	0.01	0.01	0.03	0.01
T7 SWCV	NG	40	0.03%	0.06	0.63	11.17	0.00	0.21	0.08
T7 Tractor	Dsl	40	0.30%	0.32	34.50	3.75	0.20	2.61	1.10
T7 Tractor Construction	Dsl	40	0.03%	0.03	3.84	0.41	0.02	0.28	0.12
T7 Utility	Dsl	40	0.00%	0.00	0.08	0.01	0.00	0.01	0.00
T7IS	Gas	40	0.00%	0.05	0.35	5.41	0.00	0.01	0.01
UBUS	Dsl	40	0.02%	0.00	0.40	0.11	0.02	0.23	0.10
UBUS	Gas	40	0.04%	0.03	0.44	0.81	0.03	0.41	0.17
UBUS	NG	40	0.01%	0.05	0.26	29.97	0.00	0.09	0.03
			1.00	**103.70**	**341.23**	**4,288.66**	**17.19**	**401.60**	**163.04**
		City		92	304	3,815	15	357	145
		SOI		11	38	474	2	44	18

Year 2040 Project: Criteria Air Pollutants

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

		Emission year							
3,737,890		**Year 2040**				**lbs/day**			
Vehicle Type	**Fuel Type**	**Speed**	**Percent of VMT**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	Dsl	40	0.04%	0.02	2.51	0.19	0.02	0.45	0.20
LDA	Dsl	40	0.65%	0.20	0.48	6.46	0.07	2.53	1.03
LDA	Elec	0	3.87%	0.00	0.00	0.00	0.00	14.64	5.81
LDA	Gas	40	52.06%	7.70	50.39	2,036.89	8.05	199.26	80.13
LDT1	Dsl	40	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
LDT1	Elec	0	0.25%	0.00	0.00	0.00	0.00	0.96	0.38
LDT1	Gas	40	5.93%	1.00	6.29	236.89	1.05	22.71	9.14
LDT2	Dsl	40	0.19%	0.18	0.37	1.94	0.03	0.79	0.35
LDT2	Elec	0	0.63%	0.00	0.00	0.00	0.00	2.38	0.95
LDT2	Gas	40	18.13%	4.03	19.13	828.01	3.19	69.44	27.95
LHD1	Dsl	40	1.20%	3.44	14.86	16.40	0.34	9.42	4.16
LHD1	Gas	40	1.21%	0.29	2.96	12.70	0.58	8.50	3.55
LHD2	Dsl	40	0.47%	1.35	5.99	6.41	0.15	4.40	2.07
LHD2	Gas	40	0.18%	0.04	0.37	1.86	0.10	1.47	0.61
MCY	Gas	40	0.59%	83.95	35.74	691.50	0.09	0.86	0.38
MDV	Dsl	40	0.41%	0.15	0.30	4.63	0.08	1.61	0.66
MDV	Elec	0	0.46%	0.00	0.00	0.00	0.00	1.72	0.68
MDV	Gas	40	11.17%	2.67	12.94	516.22	2.36	42.77	17.22
MH	Dsl	40	0.03%	0.08	3.66	0.25	0.02	0.36	0.18
MH	Gas	40	0.06%	0.04	0.31	0.81	0.05	0.66	0.27
Motor Coach	Dsl	40	0.02%	0.02	1.94	0.22	0.02	0.24	0.11
OBUS	Gas	40	0.05%	0.05	0.39	1.58	0.05	0.58	0.24
SBUS	Dsl	40	0.05%	0.04	3.53	0.28	0.03	3.16	1.36
SBUS	Gas	40	0.04%	0.02	0.23	0.55	0.02	2.24	0.96
T6 CAIRP Heavy	Dsl	40	0.01%	0.01	0.64	0.05	0.01	0.15	0.06
T6 CAIRP Small	Dsl	40	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Construction Heavy	Dsl	40	0.02%	0.01	1.61	0.12	0.01	0.26	0.11
T6 Instate Construction Small	Dsl	40	0.09%	0.04	5.62	0.45	0.05	1.13	0.48
T6 Instate Heavy	Dsl	40	0.28%	0.13	18.49	1.40	0.14	3.34	1.45
T6 Instate Small	Dsl	40	0.37%	0.17	22.50	1.78	0.19	4.48	1.93
T6 OOS Heavy	Dsl	40	0.01%	0.00	0.42	0.04	0.00	0.10	0.04
T6 OOS Small	Dsl	40	0.00%	0.00	0.07	0.01	0.00	0.02	0.01
T6 Public	Dsl	40	0.07%	0.04	3.82	0.30	0.04	0.80	0.34
T6 Utility	Dsl	40	0.00%	0.00	0.15	0.02	0.00	0.05	0.02
T6TS	Gas	40	0.23%	0.15	1.12	3.95	0.22	2.72	1.13
T7 CAIRP	Dsl	40	0.16%	0.17	18.79	2.05	0.10	1.43	0.60
T7 CAIRP Construction	Dsl	40	0.02%	0.02	1.83	0.20	0.01	0.14	0.06
T7 NNOOS	Dsl	40	0.20%	0.20	20.87	2.35	0.13	1.73	0.72
T7 NOOS	Dsl	40	0.06%	0.07	7.37	0.80	0.04	0.56	0.24
T7 Other Port	Dsl	40	0.02%	0.02	2.20	0.23	0.01	0.16	0.07
T7 POAK	Dsl	40	0.16%	0.19	20.81	2.20	0.11	1.46	0.62
T7 Public	Dsl	40	0.07%	0.09	7.79	0.73	0.06	0.60	0.24
T7 Single	Dsl	40	0.08%	0.08	8.47	0.96	0.07	0.74	0.30
T7 Single Construction	Dsl	40	0.04%	0.04	3.79	0.43	0.03	0.33	0.14
T7 SWCV	Dsl	40	0.00%	0.00	2.28	0.01	0.01	0.03	0.01
T7 SWCV	NG	40	0.03%	0.07	0.65	11.56	0.00	0.21	0.08
T7 Tractor	Dsl	40	0.30%	0.33	35.68	3.87	0.20	2.70	1.14
T7 Tractor Construction	Dsl	40	0.03%	0.04	3.97	0.42	0.02	0.29	0.12
T7 Utility	Dsl	40	0.00%	0.00	0.08	0.01	0.00	0.01	0.00
T7IS	Gas	40	0.00%	0.05	0.37	5.60	0.00	0.01	0.01
UBUS	Dsl	40	0.02%	0.00	0.41	0.12	0.02	0.24	0.10
UBUS	Gas	40	0.04%	0.03	0.45	0.84	0.03	0.42	0.18
UBUS	NG	40	0.01%	0.05	0.27	30.99	0.00	0.09	0.04
			100%	**107.25**	**352.90**	**4,435.28**	**17.78**	**415.33**	**168.61**
			City	96	317	3,978	16	372	151
			SOI	11	36	457	2	43	17

2040 Rates GHG Emissions: Existing

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

N2O emissions were calculated using an off-model adjustment provided by CARB in the 2014 Scoping Plan Update. The off-model adjustment uses a linear regression correlating N2O with NOx. (N2O = 0.0416 x NOx

VMT Adjustments to adjust Daily to Annual			
	Daily	Annual	Percentage
City	3,214,988	1,115,600,831	89%
SOI	399,338	138,570,291	11%
TOTAL	3,614,326	1,254,171,122	100%

[1.] Based on data provided Fehr & Peers.

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

					N_2O	CO_2 (Pavley)	CH_4	
		Emission year			AR5 GWP	AR5 GWP	AR5 GWP	
	1,254,171,122	2040 Rates			265	1	28	
Vehicle Type	**Fuel Type**	**Speed***	**Percent of VMT**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
All Other Buses	Dsl	40	0.04%	0.38	0.02	318.15	0.00	322
LDA	Dsl	40	0.65%	0.07	0.00	1,240.02	0.00	1,241
LDA	Elec	0	3.87%	0.00	0.00	0.00	0.00	0
LDA	Gas	40	52.06%	7.67	0.32	136,554.95	0.51	136,654
LDT1	Dsl	40	0.00%	0.00	0.00	2.86	0.00	3
LDT1	Elec	0	0.25%	0.00	0.00	0.00	0.00	0
LDT1	Gas	40	5.93%	0.96	0.04	17,876.65	0.06	17,889
LDT2	Dsl	40	0.19%	0.06	0.00	487.09	0.00	488
LDT2	Elec	0	0.63%	0.00	0.00	0.00	0.00	0
LDT2	Gas	40	18.13%	2.91	0.12	54,052.47	0.25	54,092
LHD1	Dsl	40	1.20%	2.26	0.09	5,362.12	0.02	5,388
LHD1	Gas	40	1.21%	0.45	0.02	8,793.11	0.02	8,799
LHD2	Dsl	40	0.47%	0.91	0.04	2,344.38	0.01	2,355
LHD2	Gas	40	0.18%	0.06	0.00	1,511.21	0.00	1,512
MCY	Gas	40	0.59%	5.44	0.23	1,161.77	2.03	1,279
MDV	Dsl	40	0.41%	0.05	0.00	1,225.39	0.00	1,226
MDV	Elec	0	0.46%	0.00	0.00	0.00	0.00	0
MDV	Gas	40	11.17%	1.97	0.08	40,031.54	0.16	40,058
MH	Dsl	40	0.03%	0.56	0.02	249.60	0.00	256
MH	Gas	40	0.06%	0.05	0.00	830.10	0.00	831
Motor Coach	Dsl	40	0.02%	0.30	0.01	246.74	0.00	250
OBUS	Gas	40	0.05%	0.06	0.00	731.83	0.00	733
SBUS	Dsl	40	0.05%	0.54	0.02	445.62	0.00	452
SBUS	Gas	40	0.04%	0.03	0.00	267.64	0.00	268
T6 CAIRP Heavy	Dsl	40	0.01%	0.10	0.00	89.88	0.00	91
T6 CAIRP Small	Dsl	40	0.00%	0.00	0.00	0.06	0.00	0
T6 Instate Construction Heavy	Dsl	40	0.02%	0.25	0.01	196.24	0.00	199
T6 Instate Construction Small	Dsl	40	0.09%	0.86	0.04	778.82	0.00	788
T6 Instate Heavy	Dsl	40	0.28%	2.81	0.12	2,235.17	0.00	2,266
T6 Instate Small	Dsl	40	0.37%	3.42	0.14	3,107.33	0.00	3,145
T6 OOS Heavy	Dsl	40	0.01%	0.06	0.00	59.13	0.00	60
T6 OOS Small	Dsl	40	0.00%	0.01	0.00	10.33	0.00	10
T6 Public	Dsl	40	0.07%	0.58	0.02	576.68	0.00	583
T6 Utility	Dsl	40	0.00%	0.02	0.00	31.98	0.00	32
T6TS	Gas	40	0.23%	0.17	0.01	3,386.90	0.01	3,389
T7 CAIRP	Dsl	40	0.16%	2.86	0.12	1,643.12	0.00	1,675
T7 CAIRP Construction	Dsl	40	0.02%	0.28	0.01	175.38	0.00	178
T7 NNOOS	Dsl	40	0.20%	3.18	0.13	2,003.08	0.00	2,038
T7 NOOS	Dsl	40	0.06%	1.12	0.05	643.39	0.00	656
T7 Other Port	Dsl	40	0.02%	0.34	0.01	188.22	0.00	192
T7 POAK	Dsl	40	0.16%	3.17	0.13	1,759.85	0.00	1,795
T7 Public	Dsl	40	0.07%	1.19	0.05	881.21	0.00	894
T7 Single	Dsl	40	0.08%	1.29	0.05	1,065.68	0.00	1,080
T7 Single Construction	Dsl	40	0.04%	0.58	0.02	475.15	0.00	482
T7 SWCV	Dsl	40	0.00%	0.35	0.01	161.07	0.00	165

2040 Rates GHG Emissions: Existing

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

N2O emissions were calculated using an off-model adjustment provided by CARB in the 2014 Scoping Plan Update. The off-model adjustment uses a linear regression correlating N2O with NOx. (N2O = 0.0416 x NOx

VMT Adjustments to adjust Daily to Annual			
	Daily	Annual	Percentage
City	3,214,988	1,115,600,831	89%
SOI	399,338	138,570,291	11%
TOTAL	3,614,326	1,254,171,122	100%

[1.] Based on data provided Fehr & Peers.

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

					N_2O	CO_2 (Pavley)	CH_4	
		Emission year			AR5 GWP	AR5 GWP	AR5 GWP	
	1,254,171,122	**2040 Rates**			265	1	28	
Vehicle Type	**Fuel Type**	**Speed***	**Percent of VMT**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
T7 SWCV	NG	40	0.03%	0.10	0.00	700.11	0.49	715
T7 Tractor	Dsl	40	0.30%	5.43	0.23	3,238.78	0.00	3,299
T7 Tractor Construction	Dsl	40	0.03%	0.60	0.03	383.47	0.00	390
T7 Utility	Dsl	40	0.00%	0.01	0.00	14.00	0.00	14
T7IS	Gas	40	0.00%	0.06	0.00	36.73	0.00	37
UBUS	Dsl	40	0.02%	0.06	0.00	305.55	0.01	307
UBUS	Gas	40	0.04%	0.07	0.00	512.45	0.00	513
UBUS	NG	40	0.01%	0.04	0.00	178.01	0.54	194
			100%	**53.71**	**2.23**	**298,571.02**	**4.16**	**299,280**
			City	48	2	265,583	4	266,213
			SOI	6	0	32,988	0	33,067

Year 2040 GHG Emissions: Project

Based on EMFAC2017, Webdata - Project Level Analysis, https://arb.ca.gov/emfac/project-analysis. Marin County - San Franciso Bay Area Air Basin (SFBAAB).

Uses 40 mph running exhaust emissions rates based on statewide average, as cited in the CalEEMod 2016 User's Guide.

N2O emissions were calculated using an off-model adjustment provided by CARB in the 2014 Scoping Plan Update. The off-model adjustment uses a linear regression correlating N2O with NOx. (N2O = 0.0416 x NC

VMT Adjustments to adjust Daily to Annual			
	Daily	Annual	Percentage
City	3,352,369	1,163,272,201	90%
SOI	385,521	133,775,629	10%
TOTAL	3,737,890	1,297,047,830	100%

[1.] Based on data provided Fehr & Peers.

[2.] Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

					N_2O	CO_2 (Pavley)	CH_4	
	Emission year				AR5 GWP	AR5 GWP	AR5 GWP	
	1,297,047,830	**Year 2040**			265	1	28	
Vehicle Type	**Fuel Type**	**Speed***	**Percent of VMT**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
All Other Buses	Dsl	40	0.04%	0.40	0.02	329.03	0.00	333
LDA	Dsl	40	0.65%	0.08	0.00	1,282.41	0.00	1,283
LDA	Elec	0	3.87%	0.00	0.00	0.00	0.00	0
LDA	Gas	40	52.06%	7.93	0.33	141,223.39	0.53	141,326
LDT1	Dsl	40	0.00%	0.00	0.00	2.95	0.00	3
LDT1	Elec	0	0.25%	0.00	0.00	0.00	0.00	0
LDT1	Gas	40	5.93%	0.99	0.04	18,487.80	0.07	18,501
LDT2	Dsl	40	0.19%	0.06	0.00	503.74	0.00	504
LDT2	Elec	0	0.63%	0.00	0.00	0.00	0.00	0
LDT2	Gas	40	18.13%	3.01	0.13	55,900.38	0.26	55,941
LHD1	Dsl	40	1.20%	2.34	0.10	5,545.44	0.03	5,572
LHD1	Gas	40	1.21%	0.47	0.02	9,093.72	0.02	9,099
LHD2	Dsl	40	0.47%	0.94	0.04	2,424.53	0.01	2,435
LHD2	Gas	40	0.18%	0.06	0.00	1,562.87	0.00	1,564
MCY	Gas	40	0.59%	5.62	0.23	1,201.49	2.10	1,322
MDV	Dsl	40	0.41%	0.05	0.00	1,415.30	0.00	1,416
MDV	Elec	0	0.46%	0.00	0.00	0.00	0.00	0
MDV	Gas	40	11.17%	2.04	0.08	41,400.11	0.17	41,427
MH	Dsl	40	0.03%	0.58	0.02	258.13	0.00	264
MH	Gas	40	0.06%	0.05	0.00	858.48	0.00	859
Motor Coach	Dsl	40	0.02%	0.31	0.01	255.17	0.00	259
OBUS	Gas	40	0.05%	0.06	0.00	756.85	0.00	758
SBUS	Dsl	40	0.05%	0.56	0.02	460.86	0.00	467
SBUS	Gas	40	0.04%	0.04	0.00	276.79	0.00	277
T6 CAIRP Heavy	Dsl	40	0.01%	0.10	0.00	92.95	0.00	94
T6 CAIRP Small	Dsl	40	0.00%	0.00	0.00	0.06	0.00	0
T6 Instate Construction Heavy	Dsl	40	0.02%	0.25	0.01	202.95	0.00	206
T6 Instate Construction Small	Dsl	40	0.09%	0.88	0.04	805.44	0.00	815
T6 Instate Heavy	Dsl	40	0.28%	2.91	0.12	2,311.59	0.00	2,344
T6 Instate Small	Dsl	40	0.37%	3.54	0.15	3,213.57	0.00	3,253
T6 OOS Heavy	Dsl	40	0.01%	0.07	0.00	61.16	0.00	62
T6 OOS Small	Dsl	40	0.00%	0.01	0.00	10.69	0.00	11
T6 Public	Dsl	40	0.07%	0.60	0.03	596.40	0.00	603
T6 Utility	Dsl	40	0.00%	0.02	0.00	33.07	0.00	33
T6TS	Gas	40	0.23%	0.18	0.01	3,502.69	0.01	3,505
T7 CAIRP	Dsl	40	0.16%	2.96	0.12	1,699.30	0.00	1,732
T7 CAIRP Construction	Dsl	40	0.02%	0.29	0.01	181.38	0.00	185
T7 NNOOS	Dsl	40	0.20%	3.29	0.14	2,071.56	0.00	2,108
T7 NOOS	Dsl	40	0.06%	1.16	0.05	665.38	0.00	678
T7 Other Port	Dsl	40	0.02%	0.35	0.01	194.66	0.00	198
T7 POAK	Dsl	40	0.16%	3.28	0.14	1,820.01	0.00	1,856
T7 Public	Dsl	40	0.07%	1.23	0.05	911.33	0.00	925
T7 Single	Dsl	40	0.08%	1.33	0.06	1,102.12	0.00	1,117
T7 Single Construction	Dsl	40	0.04%	0.60	0.02	491.40	0.00	498
T7 SWCV	Dsl	40	0.00%	0.36	0.01	166.58	0.00	171

Year 2040 GHG Emissions: Project

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VMT Adjustments to adjust Daily to Annual			
	Daily	Annual	Percentage
City	3,352,369	1,163,272,201	90%
SOI	385,521	133,775,629	10%
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					N_2O	CO_2 (Pavley)	CH_4	
	Emission year				AR5 GWP	AR5 GWP	AR5 GWP	
	1,297,047,830	**Year 2040**			265	1	28	
Vehicle Type	**Fuel Type**	**Speed***	**Percent of VMT**	**NOx**	**N_2O**	**CO_2 (Pavley)**	**CH_4**	**CO_2e w/ Pavley + LCFS**
T7 SWCV	NG	40	0.03%	0.10	0.00	724.04	0.51	739
T7 Tractor	Dsl	40	0.30%	5.62	0.23	3,349.50	0.00	3,411
T7 Tractor Construction	Dsl	40	0.03%	0.62	0.03	396.58	0.00	403
T7 Utility	Dsl	40	0.00%	0.01	0.00	14.48	0.00	15
T7IS	Gas	40	0.00%	0.06	0.00	37.99	0.00	39
UBUS	Dsl	40	0.02%	0.06	0.00	316.00	0.01	317
UBUS	Gas	40	0.04%	0.07	0.00	529.97	0.00	531
UBUS	NG	40	0.01%	0.04	0.00	184.09	0.56	200
			100%	**55.55**	**2.31**	**308,926**	**4.30**	**309,659**
			City	50	2	277,064	4	277,721
			SOI	6	0	31,862	0	31,938

Source: EMFAC2017. 2040 Marin County

g/mile

calendar_year	season_month	sub_area	vehicle_class	Fuel	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX	N2O_RUNEX	VMT	%VMT Total
2040	Annual	Marin (SF)	All Other Buses	Dsl	40	0.00588809	0.82200226	0.06202462	0.00652442	0.012	0.13034	0.00520917	1.48E-01	0.003	0.05586	0.00498382	6.38E-02	683.9	0.000273486		1,117,186	0.0371%
2040	Annual	Marin (SF)	LDA	Dsl	40	0.00373364	0.00874269	0.11633077	0.00128999	0.008	0.03675	0.00093928	4.57E-02	0.002	0.01575	0.00089865	1.86E-02	135.1633365	0.000173421		19,726,635	0.6550%
2040	Annual	Marin (SF)	LDA	Elec						0.008	0.03675		4.47E-02	0.002	0.01575		1.77E-02				116,456,420	3.8668%
2040	Annual	Marin (SF)	LDA	Gas	40	0.0017956	0.01161891	0.46178329	0.00187594	0.008	0.03675	0.00047325	4.52E-02	0.002	0.01575	0.00043513	1.82E-02	187.2567167	0.000785584		1,568,028,028	52.0640%
2040	Annual	Marin (SF)	LDT1	Dsl	40	0.01126555	0.02257772	0.11798825	0.00242307	0.008	0.03675	0.00418553	4.89E-02	0.002	0.01575	0.00400446	2.18E-02	253.8861975	0.000523263		24,182	0.0008%
2040	Annual	Marin (SF)	LDT1	Elec						0.008	0.03675		4.48E-02	0.002	0.01575		1.78E-02				7,608,861	0.2526%
2040	Annual	Marin (SF)	LDT1	Gas	40	0.00205746	0.0127467	0.4717802	0.00215646	0.008	0.03675	0.00052436	4.53E-02	0.002	0.01575	0.00048213	1.82E-02	215.3513707	0.000874456		178,493,435	5.9266%
2040	Annual	Marin (SF)	LDT2	Dsl	40	0.01131935	0.02294611	0.11959934	0.00173588	0.008	0.03675	0.00423425	4.90E-02	0.002	0.01575	0.00405108	2.18E-02	181.8829649	0.000525762		5,758,367	0.1912%
2040	Annual	Marin (SF)	LDT2	Elec						0.008	0.03675		4.48E-02	0.002	0.01575		1.78E-02				18,964,593	0.6297%
2040	Annual	Marin (SF)	LDT2	Gas	40	0.00269385	0.01266416	0.53898047	0.00213229	0.008	0.03675	0.00050023	4.53E-02	0.002	0.01575	0.00045994	1.82E-02	212.8202481	0.001108796		546,117,849	18.1330%
2040	Annual	Marin (SF)	LHD1	Dsl	40	0.03470061	0.14979358	0.16535297	0.0033894	0.012	0.07644	0.00649482	9.49E-02	0.003	0.03276	0.00621386	4.20E-02	355.13735	0.001611777		36,257,653	1.2039%
2040	Annual	Marin (SF)	LHD1	Gas	40	0.00288685	0.02970247	0.12756708	0.00579341	0.008	0.07644	0.00092453	8.54E-02	0.002	0.03276	0.00085007	3.56E-02	580.3506794	0.001225396		36,384,053	1.2081%
2040	Annual	Marin (SF)	LHD2	Dsl	40	0.03493172	0.15535881	0.16635966	0.00381541	0.012	0.08918	0.01295233	1.14E-01	0.003	0.03822	0.01239202	5.36E-02	399.7733979	0.001622512		14,082,293	0.4676%
2040	Annual	Marin (SF)	LHD2	Gas	40	0.00278142	0.02469443	0.12422596	0.00662496	0.008	0.08918	0.00091576	9.81E-02	0.002	0.03822	0.00084201	4.11E-02	663.6863629	0.0011919		5,467,903	0.1816%
2040	Annual	Marin (SF)	MCY	Gas	40	1.72790565	0.73553246	14.2325315	0.0018547	0.004	0.01176	0.00189925	1.77E-02	1.000E-03	5.040E-03	0.00177076	7.81E-03	157.1128205	0.274525544		17,756,980	0.5896%
2040	Annual	Marin (SF)	MDV	Dsl	40	0.00433537	0.00881048	0.13234588	0.00225786	0.008	0.03675	0.0011724	4.59E-02	0.002	0.01575	0.00112169	1.89E-02	236.5756794	0.00020137		12,438,386	0.4130%
2040	Annual	Marin (SF)	MDV	Elec						0.008	0.03675		4.47E-02	0.002	0.01575		1.77E-02				13,704,582	0.4550%
2040	Annual	Marin (SF)	MDV	Gas	40	0.00290072	0.01391251	0.54572466	0.00256305	0.008	0.03675	0.00051653	4.53E-02	0.002	0.01575	0.00047493	1.82E-02	255.9754914	0.001175302		336,269,711	11.1653%
2040	Annual	Marin (SF)	MH	Dsl	40	0.03652877	1.74513402	0.11950623	0.00747011	0.016	0.13034	0.02568211	1.72E-01	0.004	0.05586	0.02457112	8.44E-02	782.7080853	0.001696692		765,767	0.0254%
2040	Annual	Marin (SF)	MH	Gas	40	0.00769128	0.06676453	0.17611613	0.01182961	0.012	0.13034	0.0009256	1.43E-01	0.003	0.05586	0.00085105	5.97E-02	1185.148052	0.002867069		1,681,962	0.0558%
2040	Annual	Marin (SF)	Motor Coach	Dsl	40	0.01192063	1.23329562	0.14086491	0.00981761	0.012	0.13034	0.00863553	1.51E-01	0.003	0.05586	0.00826196	6.71E-02	1029.049332	0.000553682		575,783	0.0191%
2040	Annual	Marin (SF)	OBUS	Gas	40	0.01366728	0.09672263	0.39349578	0.01193675	0.012	0.13034	0.00091275	1.43E-01	0.003	0.05586	0.00083924	5.97E-02	1195.517196	0.004142851		1,469,994	0.0488%
2040	Annual	Marin (SF)	SBUS	Dsl	40	0.01014623	0.85091552	0.06807491	0.00673424	0.012	0.7448	0.00589579	7.63E-01	0.003	0.3192	0.00564074	3.28E-01	705.8609188	0.000471266		1,516,023	0.0503%
2040	Annual	Marin (SF)	SBUS	Gas	40	0.00706834	0.07597007	0.18625039	0.00590908	0.008	0.74479999	0.00090085	7.54E-01	0.002	0.3192	0.0008283	3.22E-01	591.8324854	0.002684124		1,085,951	0.0361%
2040	Annual	Marin (SF)	T6 CAIRP Heavy	Dsl	40	0.00512342	0.6396301	0.05396968	0.00561057	0.012	0.13034	0.00375937	1.46E-01	0.003	0.05586	0.00359674	6.25E-02	588.0816153	0.00023797		367,013	0.0122%
2040	Annual	Marin (SF)	T6 CAIRP Small	Dsl	40	0.00728139	1.15420549	0.0767015	0.00808994	0.012	0.13034	0.00784299	1.50E-01	0.003	0.05586	0.00750371	6.64E-02	847.9610404	0.000338202		172	0.0000%
2040	Annual	Marin (SF)	T6 Instate Construction Heavy	Dsl	40	0.00641207	0.9073697	0.0658549	0.00693098	0.012	0.13034	0.00588593	1.48E-01	0.003	0.05586	0.00563131	6.45E-02	726.4818866	0.000297824		648,657	0.0215%
2040	Annual	Marin (SF)	T6 Instate Construction Small	Dsl	40	0.00551638	0.73235715	0.05806662	0.00636445	0.012	0.13034	0.00449777	1.47E-01	0.003	0.05586	0.0043032	6.32E-02	667.0999829	0.000256222		2,803,516	0.0931%
2040	Annual	Marin (SF)	T6 Instate Heavy	Dsl	40	0.00586042	0.81546724	0.06173321	0.00617821	0.012	0.13034	0.00515196	1.47E-01	0.003	0.05586	0.00492909	6.38E-02	647.5796867	0.000272202		8,288,520	0.2752%
2040	Annual	Marin (SF)	T6 Instate Small	Dsl	40	0.00553778	0.73850041	0.05833454	0.00639266	0.012	0.13034	0.00454617	1.47E-01	0.003	0.05586	0.00434951	6.32E-02	670.0569708	0.000257216		11,136,162	0.3698%
2040	Annual	Marin (SF)	T6 OOS Heavy	Dsl	40	0.00511643	0.63796277	0.05389606	0.00560563	0.012	0.13034	0.0037461	1.46E-01	0.003	0.05586	0.00358404	6.24E-02	587.563362	0.000237645		241,684	0.0080%
2040	Annual	Marin (SF)	T6 OOS Small	Dsl	40	0.00522582	0.66406808	0.05504831	0.0062264	0.012	0.13034	0.0039541	1.46E-01	0.003	0.05586	0.00378304	6.26E-02	652.6305991	0.000242726		38,017	0.0013%
2040	Annual	Marin (SF)	T6 Public	Dsl	40	0.00652259	0.69867189	0.05398238	0.00661135	0.012	0.13034	0.00378311	1.46E-01	0.003	0.05586	0.00361945	6.25E-02	692.9797359	0.000302957		1,998,376	0.0664%
2040	Annual	Marin (SF)	T6 Utility	Dsl	40	0.00442105	0.47199502	0.04657091	0.00622211	0.012	0.13034	0.00242313	1.45E-01	0.003	0.05586	0.0023183	6.12E-02	652.1811154	0.000205346		117,742	0.0039%
2040	Annual	Marin (SF)	T6TS	Gas	40	0.008006	0.05897466	0.20854127	0.01171867	0.012	0.13034	0.00093117	1.43E-01	0.003	0.05586	0.00085617	5.97E-02	1173.978273	0.002916725		6,927,906	0.2300%
2040	Annual	Marin (SF)	T7 CAIRP	Dsl	40	0.01311768	1.42127196	0.15501031	0.00779045	0.036	0.06174	0.01058169	1.08E-01	0.009	0.02646	0.01012393	4.56E-02	816.5691354	0.000609282		4,832,103	0.1604%
2040	Annual	Marin (SF)	T7 CAIRP Construction	Dsl	40	0.01320209	1.4345346	0.1560078	0.00862346	0.036	0.06174	0.01071891	1.08E-01	0.009	0.02646	0.01025522	4.57E-02	903.8827031	0.000613203		465,936	0.0155%
2040	Annual	Marin (SF)	T7 NNOOS	Dsl	40	0.01230766	1.29326297	0.1454384	0.00777983	0.036	0.06174	0.00926593	1.07E-01	0.009	0.02646	0.00886509	4.43E-02	815.455493	0.000571659		5,898,713	0.1959%
2040	Annual	Marin (SF)	T7 NOOS	Dsl	40	0.01313374	1.42385459	0.15520015	0.00779684	0.036	0.06174	0.01060773	1.08E-01	0.009	0.02646	0.01014884	4.56E-02	817.2392602	0.000610028		1,890,521	0.0628%
2040	Annual	Marin (SF)	T7 Other Port	Dsl	40	0.01394964	1.552097	0.16484152	0.0083058	0.036	0.06174	0.01193401	1.10E-01	0.009	0.02646	0.01141775	4.69E-02	870.5867099	0.000647925		519,175	0.0172%
2040	Annual	Marin (SF)	T7 POAK	Dsl	40	0.01406318	1.570034	0.16618314	0.00832301	0.036	0.06174	0.01211843	1.10E-01	0.009	0.02646	0.01159419	4.71E-02	872.3899991	0.000653198		4,844,214	0.1608%
2040	Annual	Marin (SF)	T7 Public	Dsl	40	0.01491643	1.35269363	0.12694098	0.00959452	0.036	0.06174	0.00678662	1.05E-01	0.009	0.02646	0.00649303	4.20E-02	1005.666034	0.00069283		2,104,181	0.0699%
2040	Annual	Marin (SF)	T7 Single	Dsl	40	0.01171445	1.21499281	0.13842848	0.00958822	0.036	0.06174	0.00828413	1.06E-01	0.009	0.02646	0.00792576	4.34E-02	1005.005617	0.000544106		2,546,355	0.0845%
2040	Annual	Marin (SF)	T7 Single Construction	Dsl	40	0.01175228	1.19729056	0.13707756	0.00941759	0.036	0.06174	0.00810089	1.06E-01	0.009	0.02646	0.00775044	4.32E-02	987.12038	0.000545863		1,155,902	0.0384%
2040	Annual	Marin (SF)	T7 SWCV	Dsl	40	0.01049543	8.08839784	0.02954727	0.03576782	0.036	0.06174	0.01138894	1.09E-01	0.009	0.02646	0.01089626	4.64E-02	3749.063527	0.000487486		103,170	0.0034%
2040	Annual	Marin (SF)	T7 SWCV	NG	40	0.03076153	0.30534343	5.44764997		0.036	0.06174	0.00289432	1.01E-01	0.009	0.02646	0.00276911	3.82E-02	2168.457454	1.527176507		775,305	0.0257%
2040	Annual	Marin (SF)	T7 Tractor	Dsl	40	0.01318173	1.43448624	0.15576721	0.00816194	0.036	0.06174	0.01068151	1.08E-01	0.009	0.02646	0.01021944	4.57E-02	855.5070429	0.000612257		9,091,108	0.3019%
2040	Annual	Marin (SF)	T7 Tractor Construction	Dsl	40	0.01374948	1.52025664	0.16185782	0.0092137	0.036	0.06174	0.01151033	1.09E-01	0.009	0.02646	0.0110124	4.65E-02	965.7495404	0.000638628		953,518	0.0317%
2040	Annual	Marin (SF)	T7 Utility	Dsl	40	0.00955981	0.88338861	0.11296732	0.00954341	0.036	0.06174	0.00478968	1.03E-01	0.009	0.02646	0.00458248	4.00E-02	1000.308587	0.000444028		33,613	0.0011%
2040	Annual	Marin (SF)	T7IS	Gas	40	0.26505677	2.04164028	31.153644	0.01390344	0.02	0.06174	0.00092455	8.27E-02	0.005	0.02646	0.00085009	3.23E-02	1343.188988	0.061349484		65,673	0.0022%
2040	Annual	Marin (SF)	UBUS	Dsl	40	0.00059011	0.20305802	0.05680115	0.00945997	0.02930012	0.08090695	0.00706782	1.17E-01	7.325E-03	3.467E-02	0.00676207	4.88E-02	991.203219	0.041300918		740,256	0.0246%
2040	Annual	Marin (SF)	UBUS	Gas	40	0.00891003	0.15134176	0.28228421	0.01126588	0.01183672	0.12866051	0.00093687	1.41E-01	0.00295918	0.05514022	0.00086142	5.90E-02	1128.483892	0.003274922		1,090,472	0.0362%
2040	Annual	Marin (SF)	UBUS	NG	40	0.06173769	0.33246406	37.8677406		0.02930012	0.08090695	0.00117404	1.11E-01	0.00732503	0.03467441	0.00112325	4.31E-02	1429.126915	4.3209389		299,107	0.0099%
																				Annual	3,011,729,685	

Source: EMFAC2017. 2040 Marin County | 2.205E-03 | lbs/Mile

calendar_year	season_month	sub_area	vehicle_class	Fuel	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
2040	Annual	Marin (SF)	All Other Buses	Dsl	40	1.298E-05	1.812E-03	1.367E-04	1.438E-05	2.646E-05	2.873E-04	1.148E-05	3.253E-04	6.614E-06	1.231E-04	1.099E-05	1.408E-04	1.508E+00	6.029E-07	0.000E+00
2040	Annual	Marin (SF)	LDA	Dsl	40	8.231E-06	1.927E-05	2.565E-04	2.844E-06	1.764E-05	8.102E-05	2.071E-06	1.007E-04	4.409E-06	3.472E-05	1.981E-06	4.111E-05	2.980E-01	3.823E-07	0.000E+00
2040	Annual	Marin (SF)	LDA	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	LDA	Gas	40	3.959E-06	2.562E-05	1.018E-03	4.136E-06	1.764E-05	8.102E-05	1.043E-06	9.970E-05	4.409E-06	3.472E-05	9.593E-07	4.009E-05	4.128E-01	1.732E-06	0.000E+00
2040	Annual	Marin (SF)	LDT1	Dsl	40	2.484E-05	4.977E-05	2.601E-04	5.342E-06	1.764E-05	8.102E-05	9.227E-06	1.079E-04	4.409E-06	3.472E-05	8.828E-06	4.796E-05	5.597E-01	1.154E-06	0.000E+00
2040	Annual	Marin (SF)	LDT1	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	LDT1	Gas	40	4.536E-06	2.810E-05	1.040E-03	4.754E-06	1.764E-05	8.102E-05	1.156E-06	9.981E-05	4.409E-06	3.472E-05	1.063E-06	4.019E-05	4.748E-01	1.928E-06	0.000E+00
2040	Annual	Marin (SF)	LDT2	Dsl	40	2.495E-05	5.059E-05	2.637E-04	3.827E-06	1.764E-05	8.102E-05	9.335E-06	1.080E-04	4.409E-06	3.472E-05	8.931E-06	4.806E-05	4.010E-01	1.159E-06	0.000E+00
2040	Annual	Marin (SF)	LDT2	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	LDT2	Gas	40	5.939E-06	2.792E-05	1.188E-03	4.701E-06	1.764E-05	8.102E-05	1.103E-06	9.976E-05	4.409E-06	3.472E-05	1.014E-06	4.015E-05	4.692E-01	2.444E-06	0.000E+00
2040	Annual	Marin (SF)	LHD1	Dsl	40	7.650E-05	3.302E-04	3.645E-04	7.472E-06	2.646E-05	1.685E-04	1.432E-05	2.093E-04	6.614E-06	7.222E-05	1.370E-05	9.254E-05	7.829E-01	3.553E-06	0.000E+00
2040	Annual	Marin (SF)	LHD1	Gas	40	6.364E-06	6.548E-05	2.812E-04	1.277E-05	1.764E-05	1.685E-04	2.038E-06	1.882E-04	4.409E-06	7.222E-05	1.874E-06	7.851E-05	1.279E+00	2.702E-06	0.000E+00
2040	Annual	Marin (SF)	LHD2	Dsl	40	7.701E-05	3.425E-04	3.668E-04	8.411E-06	2.646E-05	1.966E-04	2.855E-05	2.516E-04	6.614E-06	8.426E-05	2.732E-05	1.182E-04	8.813E-01	3.577E-06	0.000E+00
2040	Annual	Marin (SF)	LHD2	Gas	40	6.132E-06	5.444E-05	2.739E-04	1.461E-05	1.764E-05	1.966E-04	2.019E-06	2.163E-04	4.409E-06	8.426E-05	1.856E-06	9.053E-05	1.463E+00	2.628E-06	0.000E+00
2040	Annual	Marin (SF)	MCY	Gas	40	3.809E-03	1.622E-03	3.138E-02	4.089E-06	8.818E-06	2.593E-05	4.187E-06	3.893E-05	2.205E-06	1.111E-05	3.904E-06	1.722E-05	3.464E-01	6.052E-04	0.000E+00
2040	Annual	Marin (SF)	MDV	Dsl	40	9.558E-06	1.942E-05	2.918E-04	4.978E-06	1.764E-05	8.102E-05	2.585E-06	1.012E-04	4.409E-06	3.472E-05	2.473E-06	4.160E-05	5.216E-01	4.439E-07	0.000E+00
2040	Annual	Marin (SF)	MDV	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.102E-05	0.000E+00	9.866E-05	4.409E-06	3.472E-05	0.000E+00	3.913E-05	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	MDV	Gas	40	6.395E-06	3.067E-05	1.203E-03	5.650E-06	1.764E-05	8.102E-05	1.139E-06	9.979E-05	4.409E-06	3.472E-05	1.047E-06	4.018E-05	5.643E-01	2.591E-06	0.000E+00
2040	Annual	Marin (SF)	MH	Dsl	40	8.053E-05	3.847E-03	2.635E-04	1.647E-05	3.527E-05	2.873E-04	5.662E-05	3.792E-04	8.818E-06	1.231E-04	5.417E-05	1.861E-04	1.726E+00	3.741E-06	0.000E+00
2040	Annual	Marin (SF)	MH	Gas	40	1.696E-05	1.472E-04	3.883E-04	2.608E-05	2.646E-05	2.873E-04	2.041E-06	3.158E-04	6.614E-06	1.231E-04	1.876E-06	1.316E-04	2.613E+00	6.321E-06	0.000E+00
2040	Annual	Marin (SF)	Motor Coach	Dsl	40	2.628E-05	2.719E-03	3.106E-04	2.164E-05	2.646E-05	2.873E-04	1.904E-05	3.328E-04	6.614E-06	1.231E-04	1.821E-05	1.480E-04	2.269E+00	1.221E-06	0.000E+00
2040	Annual	Marin (SF)	OBUS	Gas	40	3.013E-05	2.132E-04	8.675E-04	2.632E-05	2.646E-05	2.873E-04	2.012E-06	3.158E-04	6.614E-06	1.231E-04	1.850E-06	1.316E-04	2.636E+00	9.133E-06	0.000E+00
2040	Annual	Marin (SF)	SBUS	Dsl	40	2.237E-05	1.876E-03	1.501E-04	1.485E-05	2.646E-05	1.642E-03	1.300E-05	1.681E-03	6.614E-06	7.037E-04	1.244E-05	7.228E-04	1.556E+00	1.039E-06	0.000E+00
2040	Annual	Marin (SF)	SBUS	Gas	40	1.558E-05	1.675E-04	4.106E-04	1.303E-05	1.764E-05	1.642E-03	1.986E-06	1.662E-03	4.409E-06	7.037E-04	1.826E-06	7.099E-04	1.305E+00	5.917E-06	0.000E+00
2040	Annual	Marin (SF)	T6 CAIRP Heavy	Dsl	40	1.130E-05	1.410E-03	1.190E-04	1.237E-05	2.646E-05	2.873E-04	8.288E-06	3.221E-04	6.614E-06	1.231E-04	7.929E-06	1.377E-04	1.296E+00	5.246E-07	0.000E+00
2040	Annual	Marin (SF)	T6 CAIRP Small	Dsl	40	1.605E-05	2.545E-03	1.691E-04	1.784E-05	2.646E-05	2.873E-04	1.729E-05	3.311E-04	6.614E-06	1.231E-04	1.654E-05	1.463E-04	1.869E+00	7.456E-07	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Construction Heavy	Dsl	40	1.414E-05	2.000E-03	1.452E-04	1.528E-05	2.646E-05	2.873E-04	1.298E-05	3.268E-04	6.614E-06	1.231E-04	1.241E-05	1.422E-04	1.602E+00	6.566E-07	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Construction Small	Dsl	40	1.216E-05	1.615E-03	1.280E-04	1.403E-05	2.646E-05	2.873E-04	9.916E-06	3.237E-04	6.614E-06	1.231E-04	9.487E-06	1.392E-04	1.471E+00	5.649E-07	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Heavy	Dsl	40	1.292E-05	1.798E-03	1.361E-04	1.362E-05	2.646E-05	2.873E-04	1.136E-05	3.252E-04	6.614E-06	1.231E-04	1.087E-05	1.406E-04	1.428E+00	6.001E-07	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Small	Dsl	40	1.221E-05	1.628E-03	1.286E-04	1.409E-05	2.646E-05	2.873E-04	1.002E-05	3.238E-04	6.614E-06	1.231E-04	9.589E-06	1.394E-04	1.477E+00	5.671E-07	0.000E+00
2040	Annual	Marin (SF)	T6 OOS Heavy	Dsl	40	1.128E-05	1.406E-03	1.188E-04	1.236E-05	2.646E-05	2.873E-04	8.259E-06	3.221E-04	6.614E-06	1.231E-04	7.901E-06	1.377E-04	1.295E+00	5.239E-07	0.000E+00
2040	Annual	Marin (SF)	T6 OOS Small	Dsl	40	1.152E-05	1.464E-03	1.214E-04	1.373E-05	2.646E-05	2.873E-04	8.717E-06	3.225E-04	6.614E-06	1.231E-04	8.340E-06	1.381E-04	1.439E+00	5.351E-07	0.000E+00
2040	Annual	Marin (SF)	T6 Public	Dsl	40	1.438E-05	1.540E-03	1.190E-04	1.458E-05	2.646E-05	2.873E-04	8.340E-06	3.221E-04	6.614E-06	1.231E-04	7.979E-06	1.377E-04	1.528E+00	6.679E-07	0.000E+00
2040	Annual	Marin (SF)	T6 Utility	Dsl	40	9.747E-06	1.041E-03	1.027E-04	1.372E-05	2.646E-05	2.873E-04	5.342E-06	3.191E-04	6.614E-06	1.231E-04	5.111E-06	1.349E-04	1.438E+00	4.527E-07	0.000E+00
2040	Annual	Marin (SF)	T6TS	Gas	40	1.765E-05	1.300E-04	4.598E-04	2.583E-05	2.646E-05	2.873E-04	2.053E-06	3.159E-04	6.614E-06	1.231E-04	1.888E-06	1.317E-04	2.588E+00	6.430E-06	0.000E+00
2040	Annual	Marin (SF)	T7 CAIRP	Dsl	40	2.892E-05	3.133E-03	3.417E-04	1.717E-05	7.937E-05	1.361E-04	2.333E-05	2.388E-04	1.984E-05	5.833E-05	2.232E-05	1.005E-04	1.800E+00	1.343E-06	0.000E+00
2040	Annual	Marin (SF)	T7 CAIRP Construction	Dsl	40	2.911E-05	3.163E-03	3.439E-04	1.901E-05	7.937E-05	1.361E-04	2.363E-05	2.391E-04	1.984E-05	5.833E-05	2.261E-05	1.008E-04	1.993E+00	1.352E-06	0.000E+00
2040	Annual	Marin (SF)	T7 NNOOS	Dsl	40	2.713E-05	2.851E-03	3.206E-04	1.715E-05	7.937E-05	1.361E-04	2.043E-05	2.359E-04	1.984E-05	5.833E-05	1.954E-05	9.772E-05	1.798E+00	1.260E-06	0.000E+00
2040	Annual	Marin (SF)	T7 NOOS	Dsl	40	2.895E-05	3.139E-03	3.422E-04	1.719E-05	7.937E-05	1.361E-04	2.339E-05	2.389E-04	1.984E-05	5.833E-05	2.237E-05	1.005E-04	1.802E+00	1.345E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Other Port	Dsl	40	3.075E-05	3.422E-03	3.634E-04	1.831E-05	7.937E-05	1.361E-04	2.631E-05	2.418E-04	1.984E-05	5.833E-05	2.517E-05	1.033E-04	1.919E+00	1.428E-06	0.000E+00
2040	Annual	Marin (SF)	T7 POAK	Dsl	40	3.100E-05	3.461E-03	3.664E-04	1.835E-05	7.937E-05	1.361E-04	2.672E-05	2.422E-04	1.984E-05	5.833E-05	2.556E-05	1.037E-04	1.923E+00	1.440E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Public	Dsl	40	3.288E-05	2.982E-03	2.799E-04	2.115E-05	7.937E-05	1.361E-04	1.496E-05	2.304E-04	1.984E-05	5.833E-05	1.431E-05	9.249E-05	2.217E+00	1.527E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Single	Dsl	40	2.583E-05	2.679E-03	3.052E-04	2.114E-05	7.937E-05	1.361E-04	1.826E-05	2.337E-04	1.984E-05	5.833E-05	1.747E-05	9.565E-05	2.216E+00	1.200E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Single Construction	Dsl	40	2.591E-05	2.640E-03	3.022E-04	2.076E-05	7.937E-05	1.361E-04	1.786E-05	2.333E-04	1.984E-05	5.833E-05	1.709E-05	9.526E-05	2.176E+00	1.203E-06	0.000E+00
2040	Annual	Marin (SF)	T7 SWCV	Dsl	40	2.314E-05	1.783E-02	6.514E-05	7.885E-05	7.937E-05	1.361E-04	2.511E-05	2.406E-04	1.984E-05	5.833E-05	2.402E-05	1.022E-04	8.265E+00	1.075E-06	0.000E+00
2040	Annual	Marin (SF)	T7 SWCV	NG	40	6.782E-05	6.732E-04	1.201E-02	0.000E+00	7.937E-05	1.361E-04	6.381E-06	2.219E-04	1.984E-05	5.833E-05	6.105E-06	8.428E-05	4.781E+00	3.367E-03	0.000E+00
2040	Annual	Marin (SF)	T7 Tractor	Dsl	40	2.906E-05	3.162E-03	3.434E-04	1.799E-05	7.937E-05	1.361E-04	2.355E-05	2.390E-04	1.984E-05	5.833E-05	2.253E-05	1.007E-04	1.886E+00	1.350E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Tractor Construction	Dsl	40	3.031E-05	3.352E-03	3.568E-04	2.031E-05	7.937E-05	1.361E-04	2.538E-05	2.409E-04	1.984E-05	5.833E-05	2.428E-05	1.025E-04	2.129E+00	1.408E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Utility	Dsl	40	2.108E-05	1.948E-03	2.490E-04	2.104E-05	7.937E-05	1.361E-04	1.056E-05	2.260E-04	1.984E-05	5.833E-05	1.010E-05	8.828E-05	2.205E+00	9.789E-07	0.000E+00
2040	Annual	Marin (SF)	T7IS	Gas	40	5.843E-04	4.501E-03	6.868E-02	3.065E-05	4.409E-05	1.361E-04	2.038E-06	1.822E-04	1.102E-05	5.833E-05	1.874E-06	7.123E-05	2.961E+00	1.353E-04	0.000E+00
2040	Annual	Marin (SF)	UBUS	Dsl	40	1.301E-06	4.477E-04	1.252E-04	2.086E-05	6.460E-05	1.784E-04	1.558E-05	2.585E-04	1.615E-05	7.644E-05	1.491E-05	1.075E-04	2.185E+00	9.105E-05	0.000E+00
2040	Annual	Marin (SF)	UBUS	Gas	40	1.964E-05	3.336E-04	6.223E-04	2.484E-05	2.610E-05	2.836E-04	2.065E-06	3.118E-04	6.524E-06	1.216E-04	1.899E-06	1.300E-04	2.488E+00	7.220E-06	0.000E+00
2040	Annual	Marin (SF)	UBUS	NG	40	1.361E-04	7.330E-04	8.348E-02	0.000E+00	6.460E-05	1.784E-04	2.588E-06	2.456E-04	1.615E-05	7.644E-05	2.476E-06	9.507E-05	3.151E+00	9.526E-03	0.000E+00

Source: EMFAC2017. 2040 Marin County

1.0E-06

MTons/Mile

calendar_year	season_month	sub_area	vehicle_class	Fuel	Speed	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_PMTW	PM10_PMBW	PM10_RUNEX	PM10_Total	PM2_5_PMTW	PM2_5_PMBW	PM2_5_RUNEX	PM2_5_Total	CO2(Pavley+ACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
2040	Annual	Marin (SF)	All Other Buses	Dsl	40	5.888E-09	8.220E-07	6.202E-08	6.524E-09	1.200E-08	1.303E-07	5.209E-09	1.475E-07	3.000E-09	5.586E-08	4.984E-09	6.384E-08	6.839E-04	2.735E-10	0.000E+00
2040	Annual	Marin (SF)	LDA	Dsl	40	3.734E-09	8.743E-09	1.163E-07	1.290E-09	8.000E-09	3.675E-08	9.393E-10	4.569E-08	2.000E-09	1.575E-08	8.986E-10	1.865E-08	1.352E-04	1.734E-10	0.000E+00
2040	Annual	Marin (SF)	LDA	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	LDA	Gas	40	1.796E-09	1.162E-08	4.618E-07	1.876E-09	8.000E-09	3.675E-08	4.732E-10	4.522E-08	2.000E-09	1.575E-08	4.351E-10	1.819E-08	1.873E-04	7.856E-10	0.000E+00
2040	Annual	Marin (SF)	LDT1	Dsl	40	1.127E-08	2.258E-08	1.180E-07	2.423E-09	8.000E-09	3.675E-08	4.186E-09	4.894E-08	2.000E-09	1.575E-08	4.004E-09	2.175E-08	2.539E-04	5.233E-10	0.000E+00
2040	Annual	Marin (SF)	LDT1	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	LDT1	Gas	40	2.057E-09	1.275E-08	4.718E-07	2.156E-09	8.000E-09	3.675E-08	5.244E-10	4.527E-08	2.000E-09	1.575E-08	4.821E-10	1.823E-08	2.154E-04	8.745E-10	0.000E+00
2040	Annual	Marin (SF)	LDT2	Dsl	40	1.132E-08	2.295E-08	1.196E-07	1.736E-09	8.000E-09	3.675E-08	4.234E-09	4.898E-08	2.000E-09	1.575E-08	4.051E-09	2.180E-08	1.819E-04	5.258E-10	0.000E+00
2040	Annual	Marin (SF)	LDT2	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	LDT2	Gas	40	2.694E-09	1.266E-08	5.390E-07	2.132E-09	8.000E-09	3.675E-08	5.002E-10	4.525E-08	2.000E-09	1.575E-08	4.599E-10	1.821E-08	2.128E-04	1.109E-09	0.000E+00
2040	Annual	Marin (SF)	LHD1	Dsl	40	3.470E-08	1.498E-07	1.654E-07	3.389E-09	1.200E-08	7.644E-08	6.495E-09	9.493E-08	3.000E-09	3.276E-08	6.214E-09	4.197E-08	3.551E-04	1.612E-09	0.000E+00
2040	Annual	Marin (SF)	LHD1	Gas	40	2.887E-09	2.970E-08	1.276E-07	5.793E-09	8.000E-09	7.644E-08	9.245E-10	8.536E-08	2.000E-09	3.276E-08	8.501E-10	3.561E-08	5.804E-04	1.225E-09	0.000E+00
2040	Annual	Marin (SF)	LHD2	Dsl	40	3.493E-08	1.554E-07	1.664E-07	3.815E-09	1.200E-08	8.918E-08	1.295E-08	1.141E-07	3.000E-09	3.822E-08	1.239E-08	5.361E-08	3.998E-04	1.623E-09	0.000E+00
2040	Annual	Marin (SF)	LHD2	Gas	40	2.781E-09	2.469E-08	1.242E-07	6.625E-09	8.000E-09	8.918E-08	9.158E-10	9.810E-08	2.000E-09	3.822E-08	8.420E-10	4.106E-08	6.637E-04	1.192E-09	0.000E+00
2040	Annual	Marin (SF)	MCY	Gas	40	1.728E-06	7.355E-07	1.423E-05	1.855E-09	4.000E-09	1.176E-08	1.899E-09	1.766E-08	1.000E-09	5.040E-09	1.771E-09	7.811E-09	1.571E-04	2.745E-07	0.000E+00
2040	Annual	Marin (SF)	MDV	Dsl	40	4.335E-09	8.810E-09	1.323E-07	2.258E-09	8.000E-09	3.675E-08	1.172E-09	4.592E-08	2.000E-09	1.575E-08	1.122E-09	1.887E-08	2.366E-04	2.014E-10	0.000E+00
2040	Annual	Marin (SF)	MDV	Elec		0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.675E-08	0.000E+00	4.475E-08	2.000E-09	1.575E-08	0.000E+00	1.775E-08	0.000E+00	0.000E+00	0.000E+00
2040	Annual	Marin (SF)	MDV	Gas	40	2.901E-09	1.391E-08	5.457E-07	2.563E-09	8.000E-09	3.675E-08	5.165E-10	4.527E-08	2.000E-09	1.575E-08	4.749E-10	1.822E-08	2.560E-04	1.175E-09	0.000E+00
2040	Annual	Marin (SF)	MH	Dsl	40	3.653E-08	1.745E-06	1.195E-07	7.470E-09	1.600E-08	1.303E-07	2.568E-08	1.720E-07	4.000E-09	5.586E-08	2.457E-08	8.443E-08	7.827E-04	1.697E-09	0.000E+00
2040	Annual	Marin (SF)	MH	Gas	40	7.691E-09	6.676E-08	1.761E-07	1.183E-08	1.200E-08	1.303E-07	9.256E-10	1.433E-07	3.000E-09	5.586E-08	8.511E-10	5.971E-08	1.185E-03	2.867E-09	0.000E+00
2040	Annual	Marin (SF)	Motor Coach	Dsl	40	1.192E-08	1.233E-06	1.409E-07	9.818E-09	1.200E-08	1.303E-07	8.636E-09	1.510E-07	3.000E-09	5.586E-08	8.262E-09	6.712E-08	1.029E-03	5.537E-10	0.000E+00
2040	Annual	Marin (SF)	OBUS	Gas	40	1.367E-08	9.672E-08	3.935E-07	1.194E-08	1.200E-08	1.303E-07	9.128E-10	1.433E-07	3.000E-09	5.586E-08	8.392E-10	5.970E-08	1.196E-03	4.143E-09	0.000E+00
2040	Annual	Marin (SF)	SBUS	Dsl	40	1.015E-08	8.509E-07	6.807E-08	6.734E-09	1.200E-08	7.448E-07	5.896E-09	7.627E-07	3.000E-09	3.192E-07	5.641E-09	3.278E-07	7.059E-04	4.713E-10	0.000E+00
2040	Annual	Marin (SF)	SBUS	Gas	40	7.068E-09	7.597E-08	1.863E-07	5.909E-09	8.000E-09	7.448E-07	9.009E-10	7.537E-07	2.000E-09	3.192E-07	8.283E-10	3.220E-07	5.918E-04	2.684E-09	0.000E+00
2040	Annual	Marin (SF)	T6 CAIRP Heavy	Dsl	40	5.123E-09	6.396E-07	5.397E-08	5.611E-09	1.200E-08	1.303E-07	3.759E-09	1.461E-07	3.000E-09	5.586E-08	3.597E-09	6.246E-08	5.881E-04	2.380E-10	0.000E+00
2040	Annual	Marin (SF)	T6 CAIRP Small	Dsl	40	7.281E-09	1.154E-06	7.670E-08	8.090E-09	1.200E-08	1.303E-07	7.843E-09	1.502E-07	3.000E-09	5.586E-08	7.504E-09	6.636E-08	8.480E-04	3.382E-10	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Construction Heavy	Dsl	40	6.412E-09	9.074E-07	6.585E-08	6.931E-09	1.200E-08	1.303E-07	5.886E-09	1.482E-07	3.000E-09	5.586E-08	5.631E-09	6.449E-08	7.265E-04	2.978E-10	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Construction Small	Dsl	40	5.516E-09	7.324E-07	5.807E-08	6.364E-09	1.200E-08	1.303E-07	4.498E-09	1.468E-07	3.000E-09	5.586E-08	4.303E-09	6.316E-08	6.671E-04	2.562E-10	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Heavy	Dsl	40	5.860E-09	8.155E-07	6.173E-08	6.178E-09	1.200E-08	1.303E-07	5.152E-09	1.475E-07	3.000E-09	5.586E-08	4.929E-09	6.379E-08	6.476E-04	2.722E-10	0.000E+00
2040	Annual	Marin (SF)	T6 Instate Small	Dsl	40	5.538E-09	7.385E-07	5.833E-08	6.393E-09	1.200E-08	1.303E-07	4.546E-09	1.469E-07	3.000E-09	5.586E-08	4.350E-09	6.321E-08	6.701E-04	2.572E-10	0.000E+00
2040	Annual	Marin (SF)	T6 OOS Heavy	Dsl	40	5.116E-09	6.380E-07	5.390E-08	5.606E-09	1.200E-08	1.303E-07	3.746E-09	1.461E-07	3.000E-09	5.586E-08	3.584E-09	6.244E-08	5.876E-04	2.376E-10	0.000E+00
2040	Annual	Marin (SF)	T6 OOS Small	Dsl	40	5.226E-09	6.641E-07	5.505E-08	6.226E-09	1.200E-08	1.303E-07	3.954E-09	1.463E-07	3.000E-09	5.586E-08	3.783E-09	6.264E-08	6.526E-04	2.427E-10	0.000E+00
2040	Annual	Marin (SF)	T6 Public	Dsl	40	6.523E-09	6.987E-07	5.398E-08	6.611E-09	1.200E-08	1.303E-07	3.783E-09	1.461E-07	3.000E-09	5.586E-08	3.619E-09	6.248E-08	6.930E-04	3.030E-10	0.000E+00
2040	Annual	Marin (SF)	T6 Utility	Dsl	40	4.421E-09	4.720E-07	4.657E-08	6.222E-09	1.200E-08	1.303E-07	2.423E-09	1.448E-07	3.000E-09	5.586E-08	2.318E-09	6.118E-08	6.522E-04	2.053E-10	0.000E+00
2040	Annual	Marin (SF)	T6TS	Gas	40	8.006E-09	5.897E-08	2.085E-07	1.172E-08	1.200E-08	1.303E-07	9.312E-10	1.433E-07	3.000E-09	5.586E-08	8.562E-10	5.972E-08	1.174E-03	2.917E-09	0.000E+00
2040	Annual	Marin (SF)	T7 CAIRP	Dsl	40	1.312E-08	1.421E-06	1.550E-07	7.790E-09	3.600E-08	6.174E-08	1.058E-08	1.083E-07	9.000E-09	2.646E-08	1.012E-08	4.558E-08	8.166E-04	6.093E-10	0.000E+00
2040	Annual	Marin (SF)	T7 CAIRP Construction	Dsl	40	1.320E-08	1.435E-06	1.560E-07	8.623E-09	3.600E-08	6.174E-08	1.072E-08	1.085E-07	9.000E-09	2.646E-08	1.026E-08	4.572E-08	9.039E-04	6.132E-10	0.000E+00
2040	Annual	Marin (SF)	T7 NNOOS	Dsl	40	1.231E-08	1.293E-06	1.454E-07	7.780E-09	3.600E-08	6.174E-08	9.266E-09	1.070E-07	9.000E-09	2.646E-08	8.865E-09	4.433E-08	8.155E-04	5.717E-10	0.000E+00
2040	Annual	Marin (SF)	T7 NOOS	Dsl	40	1.313E-08	1.424E-06	1.552E-07	7.797E-09	3.600E-08	6.174E-08	1.061E-08	1.083E-07	9.000E-09	2.646E-08	1.015E-08	4.561E-08	8.172E-04	6.100E-10	0.000E+00
2040	Annual	Marin (SF)	T7 Other Port	Dsl	40	1.395E-08	1.552E-06	1.648E-07	8.306E-09	3.600E-08	6.174E-08	1.193E-08	1.097E-07	9.000E-09	2.646E-08	1.142E-08	4.688E-08	8.706E-04	6.479E-10	0.000E+00
2040	Annual	Marin (SF)	T7 POAK	Dsl	40	1.406E-08	1.570E-06	1.662E-07	8.323E-09	3.600E-08	6.174E-08	1.212E-08	1.099E-07	9.000E-09	2.646E-08	1.159E-08	4.705E-08	8.724E-04	6.532E-10	0.000E+00
2040	Annual	Marin (SF)	T7 Public	Dsl	40	1.492E-08	1.353E-06	1.269E-07	9.595E-09	3.600E-08	6.174E-08	6.787E-09	1.045E-07	9.000E-09	2.646E-08	6.493E-09	4.195E-08	1.006E-03	6.928E-10	0.000E+00
2040	Annual	Marin (SF)	T7 Single	Dsl	40	1.171E-08	1.215E-06	1.384E-07	9.588E-09	3.600E-08	6.174E-08	8.284E-09	1.060E-07	9.000E-09	2.646E-08	7.926E-09	4.339E-08	1.005E-03	5.441E-10	0.000E+00
2040	Annual	Marin (SF)	T7 Single Construction	Dsl	40	1.175E-08	1.197E-06	1.371E-07	9.418E-09	3.600E-08	6.174E-08	8.101E-09	1.058E-07	9.000E-09	2.646E-08	7.750E-09	4.321E-08	9.871E-04	5.459E-10	0.000E+00
2040	Annual	Marin (SF)	T7 SWCV	Dsl	40	1.050E-08	8.088E-06	2.955E-08	3.577E-08	3.600E-08	6.174E-08	1.139E-08	1.091E-07	9.000E-09	2.646E-08	1.090E-08	4.636E-08	3.749E-03	4.875E-10	0.000E+00
2040	Annual	Marin (SF)	T7 SWCV	NG	40	3.076E-08	3.053E-07	5.448E-06	0.000E+00	3.600E-08	6.174E-08	2.894E-09	1.006E-07	9.000E-09	2.646E-08	2.769E-09	3.823E-08	2.168E-03	1.527E-06	0.000E+00
2040	Annual	Marin (SF)	T7 Tractor	Dsl	40	1.318E-08	1.434E-06	1.558E-07	8.162E-09	3.600E-08	6.174E-08	1.068E-08	1.084E-07	9.000E-09	2.646E-08	1.022E-08	4.568E-08	8.555E-04	6.123E-10	0.000E+00
2040	Annual	Marin (SF)	T7 Tractor Construction	Dsl	40	1.375E-08	1.520E-06	1.619E-07	9.214E-09	3.600E-08	6.174E-08	1.151E-08	1.093E-07	9.000E-09	2.646E-08	1.101E-08	4.647E-08	9.657E-04	6.386E-10	0.000E+00
2040	Annual	Marin (SF)	T7 Utility	Dsl	40	9.560E-09	8.834E-07	1.130E-07	9.543E-09	3.600E-08	6.174E-08	4.790E-09	1.025E-07	9.000E-09	2.646E-08	4.582E-09	4.004E-08	1.000E-03	4.440E-10	0.000E+00
2040	Annual	Marin (SF)	T7IS	Gas	40	2.651E-07	2.042E-06	3.115E-05	1.390E-08	2.000E-08	6.174E-08	9.245E-10	8.266E-08	5.000E-09	2.646E-08	8.501E-10	3.231E-08	1.343E-03	6.135E-08	0.000E+00
2040	Annual	Marin (SF)	UBUS	Dsl	40	5.901E-10	2.031E-07	5.680E-08	9.460E-09	2.930E-08	8.091E-08	7.068E-09	1.173E-07	7.325E-09	3.467E-08	6.762E-09	4.876E-08	9.912E-04	4.130E-08	0.000E+00
2040	Annual	Marin (SF)	UBUS	Gas	40	8.910E-09	1.513E-07	2.823E-07	1.127E-08	1.184E-08	1.287E-07	9.369E-10	1.414E-07	2.959E-09	5.514E-08	8.614E-10	5.896E-08	1.128E-03	3.275E-09	0.000E+00
2040	Annual	Marin (SF)	UBUS	NG	40	6.174E-08	3.325E-07	3.787E-05	0.000E+00	2.930E-08	8.091E-08	1.174E-09	1.114E-07	7.325E-09	3.467E-08	1.123E-09	4.312E-08	1.429E-03	4.321E-06	0.000E+00

EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One and Part 2

CARB. 2019, November.

https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf?utm_medium=email&utm_source=govdelivery

CARB. 2020, June 26

https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf?utm_medium=email&utm_source=govdelivery

Effects Post-Year 2020 Annual Emissions for LDA, LDT1, LDT2, and MDV only.

Year 2040 - EMFAC2017 Exhaust Adjustment Factors

	NOx	PM	CO	CO2
2040	101%	103%	103%	112%

Notes:

EMFAC2017 PL Emissions Rates are still accurate. However, the % of EV vehicles compared to the total population changes slightly

3 % decrease in VMT from EVs.

APPENDIX E:
BIOLOGICAL RESOURCES DATA

SAN RAFAEL GENERAL PLAN 2040 & DOWNTOWN PRECISE PLAN

BIOLOGICAL AND WETLAND RESOURCES BACKGROUND REPORT

Prepared by

Environmental Collaborative
41 Jeanette Court
Walnut Creek, CA 94596

Prepared for

PlaceWorks
1625 Shattuck Avenue, Suite 300
Berkeley, CA 94709

22 January 2020

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BIOLOGICAL RESOURCES

This Background Report has been prepared as part of the General Plan 2040 and Downtown Precise Plan being undertaken by the City of San Rafael. It provides a general description of the biological and wetland resources in and around the City of San Rafael and a summary of the regulatory framework that provides for protection of sensitive resources and habitat. It consists of the following sections: (1) a description of the methods used in preparing this Background Report; (2) descriptions of the vegetation and wildlife habitat types, special-status species, and sensitive habitats within the City Limits, Sphere of Influence (SOI), and Planning Area for the General Plan Update; (3) an overview of the existing federal and State regulations pertaining to biological and wetland resources; and (4) a listing of applicable existing San Rafael General Plan policies; and (5) a summary of planning considerations for use in updating the General Plan.

Biological Resources – Existing Conditions

METHODS

This Background Report was prepared by reviewing available information on biological and wetland resources in the San Rafael vicinity. This included: the *City of San Rafael General Plan 2020* and Environmental Impact Report (EIR, the Biological Resources section of the *Marin Countywide Plan Update Draft EIR,*[1] the California Native Plant Species (CNPS) *Inventory of Rare and Endangered Plants,*[2] and available Geographic Information System (GIS) data. The GIS data was used to map the existing vegetation and wildlife habitat, the known distribution of special-status species and sensitive natural communities, and the known distribution of wetlands in the Planning Area. GIS data on vegetation and wildlife habitat was obtained from the CALVEG mapping program maintained by the U.S. Department of Agricultural (USDA) Forest Service. GIS data on special-status species and sensitive natural communities was obtained from the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW). GIS data on wetlands was obtained from the National Wetland Inventory (NWI) mapping program maintained by the U.S. Fish and Wildlife Service (USFWS). This data was used in preparing maps contained in this report, consisting of the following:

- **Figure 1** shows the various vegetation cover types in the Planning Area vicinity according to the CALVEG mapping program.

- **Figure 2** shows the distribution of known occurrences of special-status plant and sensitive natural communities in the Planning Area vicinity as reported by the CNDDB.

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1 *Marin Countywide Plan Update Draft EIR*, Marin County and Nichols • Berman, 2007.

2 California Native Plant Society, 2019. *Inventory of rare and endangered plants in California* (online edition). Website: www.cnps.org/inventory (accessed February 10).

- **Figure 3** shows the distribution of known occurrences of special-status animals reported by the CNDDB and designated critical habitat as mapped by the USFWS in the Planning Area vicinity.

- **Figure 4** shows the extent of wetlands mapped as part of the NWI program as well as the occurrences of sensitive natural communities in the Planning Area according to records of the USFWS.

BIOLOGICAL RESOURCES WITHIN THE PLANNING AREA

The following section provides a description of vegetation types and associated wildlife, known distribution of special-status species, and sensitive habitats.

Habitat Types

The San Rafael Planning Area is largely developed, with urban uses occupying most of the valley floors and former marshlands that once bordered the San Francisco Bay. The valley floors are bordered by the remaining undeveloped woodlands, forests, grasslands, scrub and chaparral of the surrounding hillsides and ridges, traversed by bands of riparian woodland along the remaining unchannelized creeks and drainages. Marshlands remain along the shoreline of San Pablo Bay and the lower reaches of San Rafael, Gallinas, and Miller Creeks.

Figure 1 shows the extent of urbanization and various vegetative cover types in the Planning Area, based on the CALVEG GIS mapping data of the USDA Forest Service. Estimates of various vegetation cover types within the SOI and Planning Area are summarized in **Table 1**, based on the CALVEG GIS mapping data.

Although native vegetation within much of the Planning Area has been substantially altered, the presence of large areas of undeveloped lands to the west, the remaining marshlands and open water habitat along the shoreline of San Pablo Bay, and the freshwater marsh and riparian habitat along unchannelized creeks and drainages, contribute to a relatively diverse assemblage of resident and migrant wildlife species. In general, each habitat differs in its relative value to specific species and can be characterized by both vegetation and associated animal species that are dependent on that habitat, although some wildlife species may utilize more than one habitat type. The characteristic plant and wildlife species typically associated with each of these habitat types is summarized below.

Urban Development/Ornamental Landscaping

Urban development, ornamental landscaping and barren areas occupy most of the valley floors in the Planning Area. As indicated in **Figure 1**, an estimated 7,548.4 acres or roughly 38 percent of the land cover types in the Planning Area is mapped as urban development or barren, which includes impervious surfaces, structures, ornamental landscaping and areas of remnant native vegetation, and locations with no vegetative cover. Most plant species used in landscaping are non-native ornamentals, consisting of a wide variety of tree, shrub, groundcover, and turf species. Native trees are scattered throughout the established residential neighborhoods and urbanized areas, including specimen coast live oaks (*Quercus agrifolia*), valley oaks (*Q. lobata*), California bay laurel (*Umbellularia californica*), California buckeye (*Aesculus californica*), coast redwood (*Sequoia sempervirens*), madrone (*Arbutus*

menziesii), and black oak (*Quercus kelloggii*), among others. Larger ornamental and non-indigenous native species include: Monterey pine (*Pinus radiata*), Monterey cypress (*Cupressus macrocarpa*), incense cedar (*Calocedrus decurrens*), deodar cedar (*Cedrus deodara*), American elm (*Ulmus americana*), Mexican fan palm (*Washingtonia robusta*) and Tasmanian blue gum (*Eucalyptus globulus*), among many others.

Blue gum occurs as scattered individuals and several groves in the southwestern portion of the Planning Area. Blue gum is relatively invasive and has formed dense forests on some of the hillsides in the Planning Area. As indicated in **Figure 1**, larger groves of blue gum occur on the southern slopes of San Pedro Mountain and Peacock Gap, collectively occupying an estimated 230.8 acres of the Planning Area.

Table 1
Estimates of Vegetation Cover/Habitat Type in Planning Area*

Vegetation Cover/Habitat Type	***SOI (acres)***	***Planning Area (acres)***
Annual grassland	1,323.9	2,773.2
Coastal scrub	195.5	195.5
Mixed chaparral	0.0	232.9
Oak woodland	4,462.8	5,302.4
Hardwood-conifer forest	268.0	2,295.6
Riparian woodland	12.3	107.1
Lacustrine	0.5	0.5
Freshwater marsh	0.0	5.1
Saline marsh	1,060.3	1,196.5
Eucalyptus	230.8	230.8
Cropland	12.4	40.2
Urban/Barren	7,078.8	7,548.4
TOTAL	14,645.3	19,928.3

- - Landcover types occupy an estimated 14,645.3 acres of the 26,193 acres of the SOI and 19,928 acres of the 34,586 acres of the Planning Area, with the remaining acreages being unvegetated open waters of the bay.

Source: CALVEG GIS data, USDA Forest Service, 2019.

Some non-native ornamental species are considered highly invasive because of their ability to spread and eventually dominate natural areas if unmanaged. Many of these are common in the Planning Area in urbanized areas, along riparian corridors, and in hillside open space and remaining undeveloped private lands. These include: silver wattle (*Acacia dealbata*), blackwood acacia (*Acacia melanoxylon*), several species of broom (*Genista monspessulana*; *G. juncea*; and *Cytisus scoparius*), pampasgrass (*Cortaderia selloana*), cotoneaster

(*Cotoneaster* spp.), bermudagrass (*Cynodon dactylon*), Germany ivy (*Delairea odorata*), English ivy (*Hedera helix*), bermuda buttercup (*Oxalis pes-caprae*), Himalaya blackberry (*Rubus armeniacus*), periwinkle (*Vinca major*), and Tasmanian blue gum. The California Invasive Plant Council (Cal-IPC) has developed a comprehensive data base, the *Invasive Plant Inventory*, which ranks invasive species based on the threat they pose to natural habitat. All of the above species and others known to exist in the vicinity of San Rafael, are considered to have a high to moderate ranking by Cal-IPC because of their invasive properties and the threat they pose to natural areas.

In general, urbanized areas tend to have low to poor wildlife habitat values due to replacement of natural communities, fragmentation of remaining open space areas and parks, and intensive human disturbance. The diversity of urban wildlife depends on the extent and type of landscaping and remaining open space, as well as the proximity to natural habitat. Trees and shrubs used for landscaping provide nest sites and cover for wildlife adapted to developed areas. Typical native bird species include: mourning dove, scrub jay, northern mockingbird, American robin, northern flicker, California towhee, and American kestrel. Introduced species include: rock dove, European starling, house finch, and house sparrow. Urban areas also provide habitat for several species of native mammals such as black-tailed deer, California ground squirrel, raccoon, gray fox, striped skunk, and coyote, as well as the introduced eastern fox squirrel and eastern red fox. Introduced pest species such as Norway rat, house mouse, and Virginia opossum are also abundant in developed areas.

Forest and Woodlands

Forest and woodlands occupy an estimated 7,598 acres or roughly 38 percent of the land cover types in the Planning Area, forming the dominant cover on San Pedro Mountain, along Southern Heights Ridge, and the upper Lucas Valley watershed. As summarized in **Table 1** and mapped in **Figure 1**, this includes areas of oak woodland dominated by coast live oak and other oak species, coniferous forest dominated by conifers, and montane forest dominated by a mixture of hardwoods and conifers. Oak woodlands form the dominant native cover in the largely developed hillside area in the northwestern portion of the Planning Area, with forest cover extending over much of the southwestern portion of the Planning Area. Dominant tree species varies and include: coast live oak, California bay laurel, coast redwood, Douglas fir (*Pseudotsuga menziesii*), tan oak (*Lithocarpus densiflorus*), and black oak. Other tree and shrub species found in the forest and woodland habitats include: madrone, valley oak, California buckeye, toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), and hazelnut (*Corylus cornuta* ssp. *californica*), among others. Understory cover varies depending on the amount of available sunlight and other factors. Where dense canopy is present, understory species in areas of forest cover are generally sparse, but do include sword fern (*Polystichum munitum*), redwood sorrel (*Oxalis oregano*), and creeping snowberry (*Symphoricarpos mollis*). In areas with higher light levels, the understory consists of non-native grassland species, miner's lettuce (*Claytonia perfoliata*), bedstraw (*Galium aparine*) and other herbaceous species. Highly invasive broom has spread through much of the understory of the forest and woodlands in the Planning Area, inhibiting foraging opportunities for wildlife and displacing native shrub and groundcover plant species. Much of the areas mapped as forest and woodland in the Planning Area have been developed with residential uses, preserving a broken canopy of mature trees interspersed with structures and ornamental landscaping.

The existing mature forests and woodlands provide nesting and foraging opportunities for numerous species of birds, including raptors. They also provide essential food resources for

eastern fox squirrels, native grey squirrels, acorn woodpeckers, scrub jay, and other birds. Wildlife commonly associated with well-developed forest and woodland habitats include: dusky-footed woodrat, deer mouse, western flycatcher, chestnut-backed chickadee, plain titmouse, Hutton vireo, orange-crowned kinglet, rufous-sided towhee, fox sparrow, bushtit, ringneck snake, California newt, and California slender salamander. Wildlife in the understory of the remaining forest and woodland varies depending on cover type and extent of development. In developed areas, the understory has typically been replaced by structures or landscaping, and supports wildlife common in urbanized habitats.

While most forests and woodlands are not considered to have a high priority for mapping and protection as a sensitive natural community type by the CNDDB, they should be recognized as an important habitat type due to their relatively high wildlife habitat value, continued threats due to further tree removal associated with development, and their vulnerability to the effects of Sudden Oak Death (SOD). Tanoaks and coast live oaks are dying in large numbers in Marin County, and black oaks, California buckeye, California bay, madrone, huckleberry, and rhododendron are suspected hosts or potential carriers of the fungus suspected to cause oak mortality. This fungus, a species of *Phytophthora*, and several beetle species are consistently associated with the dying oaks. SOD is contributing to significant changes in vegetative cover over large parts of Marin County, altering habitat for woodland-dependent species and exacerbating hazardous fire conditions where wildlands interface with developed areas.

Grasslands

Grasslands occupy parts of Big Rock Ridge in Lucas Valley, the margins of Santa Margarita Valley, the undeveloped valley floor around St. Vincent's School for Boys in the lower Gallinas Valley, and other hillside slopes in the Planning Area. The grasslands are generally composed of introduced grasses and broadleaf species. In locations where the ground surface has been disturbed, ruderal (weedy) species, which quickly recolonize disturbed areas, tend to dominate. As indicated in **Table 1**, an estimated 2,773.2 acres of the Planning Area supports grassland cover, according to the CALVEG mapping program. Intensive grazing and other disturbance factors have eliminated most of the native grasslands throughout California over the past 100 years, including the historic rangelands of the San Rafael vicinity. Common species in the grasslands today include: wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus mollis*), foxtail barley (*Hordeum leporinum*), field mustard (*Brassica campestris*), wild radish (*Rhaphanus sativus*), bindweed (*Convolvulus arvensis*), cheeseweed (*Malva parviflora*), bur clover (*Medicago polymorpha*), and yellow-star thistle (*Centaurea solstitialis*). The remaining native species are common perennials, such as California poppy (*Eschscholzia californica*), Douglas' lupine (*Lupinus nanus*), and soap plant (*Chlorogalum pomeridianum*).

Remnant native grasslands may still occur in some locations mapped as annual grassland, forming stands of needlegrass grassland. This natural community is characterized by several species of native grasses such as purple needlegrass (*Stipa pulchra*), California melic (*Melica californica*), blue wildrye (*Elymus glaucus*), and beardless wildrye (*Elymus triticoides*), together with common wildflowers such as California poppy, lupines, soap plant, and wild hyacinth (*Dichelostemma pulchellum*), and other native forbs. Most of the native grasslands throughout the state have been eliminated, which has led the CNDDB to now recognize native grasslands as a sensitive resource with a high inventory priority. The CNDDB typically considers grasslands containing ten percent or greater cover by native grass species to represent a natural grassland community. This ten percent threshold is a

loosely applied standard that has been used by the state for many years. As most of the remaining native grassland communities have been highly modified by past and on-going disturbance, the remaining native grassland communities generally form a mosaic of different cover classes, sometimes interspersed with areas dominated by non-native species.

Nonnative and native grasslands support a variety of mammals, birds, and reptiles, and provide foraging habitat for raptors. Many species use the grassland for only part of their habitat requirements, foraging in the grassland and seeking cover in the limited tree and scrub cover. Grassland cover provides foraging, nesting, and denning opportunities for resident species such as western fence lizard, northern alligator lizard, gopher snake, western meadowlark, goldfinch, ring-necked pheasant, red-winged blackbird, California ground squirrel, California vole, Bottae pocket gopher, black-tailed jackrabbit, and black-tailed deer. The rodent, bird, and reptile populations offer foraging opportunities for avian predators such as black-shouldered kite, northern harrier, American kestrel, red-tailed hawk, golden eagle, barn owl, and great horned owl, as well as mammalian predators such as striped skunk, grey fox, and coyote.

Riparian Woodland and Scrub

Riparian vegetation occurs along Miller Creek and segments of Gallinas Creek and other drainages in the Planning Area, with trees and shrubs often forming stands characteristic of riparian forest and willow scrub natural communities, occupying an estimated 107.1 acres in the Planning Area as indicated in **Table 1**. Dominant cover includes willows (*Salix* spp.), valley oak, coast live oak, California bay laurel, and California buckeye, together with shrub and vine species such as California blackberry (*Rubus ursinus*) and wild rose (*Rosa californica*). Stands of highly invasive non-native species such as Himalaya blackberry, ivy, arundo (*Arundo donax*), periwinkle, and broom have become particularly problematic in some reaches of the riparian corridors in the Planning Area, outcompeting and replacing native shrub and groundcover species, and severely limiting wildlife habitat values.

Surface water along riparian corridors is available for aquatic-dependent organisms, and as a source of drinking water for terrestrial mammals and birds. The creek channels serve as movement corridors for aquatic and terrestrial species which use the protective cover found along the creeks. Wildlife dependent on the cover provided by the riparian woodland and scrub include black-tailed deer, black-tailed jackrabbit, brush rabbit, red and grey fox, rufous-sided towhee, scrub jay, flycathers, and warblers. Mammals and birds typically found in the remaining adjacent grasslands most likely use areas of dense riparian growth as protective cover and refuge from summer heat and drought.

Freshwater/Brackish Marsh

Freshwater and brackish marsh habitat is also associated with the creeks and drainage channels, ponds and other waterbodies, and the fringe of tidally influenced reaches of San Rafael Creek, Gallinas Creek, Miller Creek and tributary drainages as indicated in **Figure 1**. As salinity levels increase, the marshlands transition into coastal salt marsh at the mouth of creeks and fringe of the Bay. Open water lakes and the larger unvegetated creek corridor are mapped as lacustrine in the CALVEG mapping program. Lacustrine features are typically defined as freshwater lakes and other open water bodies. Where salinity levels are relatively low, marshlands are typically dominated by emergent monocots such as narrow-leaf cattail (*Typha angustifolia*), but as salinity levels increase brackish and salt water hydrophytes tend to dominate, including bulrush (*Scirpus* spp.), pickleweed (*Salicornia*

pacifica) and saltgrass (*Distichlis spicata*) . Wetland indicator species characteristic of poorly developed freshwater marsh habitat include: curly dock (*Rumex crispus*), bristly ox-tongue (*Picris echioides*), and wild celery (*Apium graveolens*). Segments of the larger creeks in the Planning Area that do not support a canopy of woody riparian vegetation generally support some type of freshwater or brackish marsh cover along the margins of the active channel. Freshwater marsh species also dominate the ground cover at the remaining freshwater seeps and springs in the Planning Area.

Freshwater and brackish aquatic habitats and the associated marsh vegetation are of high value to wildlife, providing a source of drinking water, protective cover, nesting substrate, and serving as movement corridors. Species found in fresh and brackish marsh habitats include Virginia rail, sora, Wilson's snipe, marsh wren, Samuel's song sparrow, and red-winged blackbird, among others. Linear channels supporting marsh vegetation within the Planning Area provide foraging habitat for egrets and great blue herons, as well as mammalian predators such as northern raccoon, striped skunk, and coyote. Aquatic species found in freshwater ponds and waterbodies include: Pacific chorus frog, western toad, western pond turtle, western mosquito fish, green sunfish, blue gill, and largemouth bass.

Coastal Salt Marsh, Mudflats and Open Water

Tidal marsh is a highly productive community consisting of salt- tolerant, hydrophytic plants that form moderate to dense cover. **Figure 1** shows the extent of coastal salt marsh along the shoreline of San Francisco Bay and the associated lacustrine open water habitat in the lower reaches of San Rafael and Gallinas creeks according to the CALVEG mapping program. Plants are usually segregated vertically depending on their tolerance of inundation and saline soils. This habitat type is typically associated with and occurs adjacent to intertidal mudflats that are devoid of vegetation; during an ebb tide, the bottom is bare mud, cobble, or rock. Within the Planning Area, this habitat type occurs along the tidal sloughs and shorelines of the Bay, with large marshlands remaining near the mouth of Gallinas Creek, and smaller pockets at the mouth of San Rafael Creek and the Pickleweed Park area.

Tidal marsh habitats within the Planning Area are similar in vertical structure, starting at the low elevation mud flat to the upland vegetation on adjacent levees and remaining natural habitat. The lowest elevation vegetation strata contain pickleweed co-dominated in places by saltgrass, interspersed with areas of open water (or mudflat at low tide). Pickleweed and saltgrass are still dominant components on the elevated benches of the tidal marsh where patches of alkali heath (*Frankenia salina*), gumplant (*Grindelia stricta* ssp. *angustifolia*), and cordgrass (*Spartina* spp.) occur. The upland vegetation on the surrounding banks and levees is dominated by non-native grasses and ruderal herbaceous species such as mustard (*Brassica* sp.), iceplant (*Carpobrotus* sp.), English plantain (*Plantago lanceolata*), sweet fennel, and perennial pepperweed (*Lepidium latifolium*).

Tidal marsh, mudflat and open water habitats support a variety of wildlife species specifically adapted to the salt-tolerant vegetation, microhabitats (e.g., channels and sloughs), and tidal regimes that characterize these areas. Along with open water, these habitat types support the greatest diversity of wildlife within the Planning Area, as well as the majority of special-status species known or suspected to occur in the region, such as California Ridgway's rail, California black rail, and salt marsh harvest mouse. Tidal marshes also provide foraging habitat for special-status raptors such as white-tailed kite and marsh hawk. The mudflats support a diverse assemblage of benthic macro-invertebrates which in turn attracts large

numbers of migrating and wintering shorebirds such as willet, long-billed curlew, marbled godwit, dowitchers, and sandpipers. These species forage on mudflats as they are exposed by receding tides, often concentrating at the water's edge where worms, crustaceans, and bivalves are closer to the mud's surface. Vegetated portions of tidal marshes are not heavily used by shorebirds, although willets tend to forage next to pools created on the marsh plain during extremely high tides. Wading birds such as snowy egret, great egret, and great blue heron forage along the margins of tidal channels and marsh edges. Dabbling (i.e., surface-feeding) ducks, such as mallard, forage over inundated mudflats and tidal channels. When inundated by high tides, tidal channels and mudflats provide important foraging habitat for a variety of estuarine species, including bat ray, leopard shark, and various fish species.

Open water habitats within the Planning Area include the tidally influenced lower reaches of the larger creeks and the Bay. In addition to providing foraging and roosting habitat for wintering and migrating shorebirds and waterfowl, these areas provide habitat for American avocet, black-necked stilt, California gull, western gull, Caspian tern, and Forster's tern. Diving ducks such as canvas- back, greater scaup, lesser scaup, bufflehead, and ruddy duck, winter in large numbers in the open waters connected to the San Francisco Bay. Other waterbird species expected to use open water habitats within the Planning Area include: American coot, Canada goose, pied-billed grebe, horned grebe, eared grebe, American white pelican, California brown pelican, great egret, snowy egret, and great blue heron, among others.

Open water habitat in the Planning Area supports a variety of both native and introduced fish species. Native fish species known to occur disperse through open waters of the Bay include: steelhead, Chinook salmon, California roach, Sacramento pike minnow, Sacramento sucker, three spine stickleback, long jaw mudsucker, stag horn sculpin, prickly sculpin, riffle sculpin, starry flounder and possibly Pacific lamprey.[3] Introduced species commonly found in urbanized streams include common carp, rainwater killifish, western mosquito fish, and possibly black crappie.[4] Coho salmon, tule perch, and tide water goby are considered extirpated in the east Marin watersheds.[5]

Other Cover Types and Wildlife Habitat Features

A number of native and non-native vegetative cover types occur along the margins or just outside the Planning Area, such as mixed chaparral, coastal scrub, and stands of eucalyptus. Areas of chaparral and scrub are dominated by woody shrubs such as coyote brush (*Baccharis pilularis*), yerba santa (*Eriodictyon californicum*), toyon (*Heteromeles arbutifolia*), chamise (*Adonostoma fasciculatum*), poison oak, buckbrush (*Ceanothus cuneatus*), chaparral pea (*Pickeringia montana*), and California sagebrush (*Artemisia californica*). Chaparral occupies an estimated 232.9 acres of the Planning Area according to the CALVEG Mapping program, primarily along Big Rock Ridge in the upper Lucas Valley watershed. Coyote brush and other indicator species of coastal scrub occupy an estimated 195.5 acres of the Planning Area according to the CALVEG mapping program. Stands of non-native

3 Leidy, R.A., 2007, *Ecology, Assemblage Structure, Distribution, and Status of Fishes in Streams Tributary to the San Francisco Estuary, California*, San Francisco Estuary Institute Contribution No. 530, San Francisco Estuary Institute, Oakland, California .

4 Ibid.

5 Ibid.

eucalyptus, occupying an estimated 230.8 acres of the Planning Area are dominated by blue gum, typical with a sparse understory of non-native grasses, weedy species, and poison oak.

Several other landforms and cover types provide habitat for wildlife, such as rock outcrops and groves of non-native blue gum eucalyptus. Rock outcrops occur in the remaining grassland, woodland, chaparral and scrub habitats at the fringes of the Planning Area, which provide a unique habitat for wildlife. These landforms provide perches for raptors, while ledges may also serve as nests in more isolated locations. Crevices provide abundant hiding places for numerous lizards and snakes, and larger cavities may be used as shelter locations by mammals. Although eucalyptus is native to Australia, this naturalized species can provide important nesting habitat for raptors and other bird species, and cover for larger mammals. Colonies of Monarch butterfly (*Danaus plexippus*) are known to overwinter in some larger groves of eucalyptus in Marin County with appropriate habitat conditions, with at least two colonies reported from China Camp State Park in the Planning Area. The presence of eucalyptus in areas of open grasslands, where protective cover and perching habitat is scarce, emphasizes the importance of the dense tree stands to birds and larger mammals. However, eucalyptus is moderately invasive and can eventually replace grassland, scrub, and other natural habitats.

Special-Status Species

This section outlines special-status species and sensitive habitats within the Planning Area. Special-status species are plants and animals that are legally protected under the State and/or federal Endangered Species Acts or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat (see Regulatory Setting discussion below). Species with legal protection under the federal and State Endangered Species Acts often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species.[6]

The primary information source on the distribution of special-status species in California is the CNDDB inventory, which is maintained by the Biogeographic Data Branch of the CDFW. The CNDDB inventory provides the most comprehensive statewide information on the location and distribution of special-status species and sensitive natural communities. Occurrence data is obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The occurrence of a species of concern in a particular region is an indication that an additional population may occur at another location if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question; only that no data has been entered into the CNDDB inventory. Detailed field surveys are generally

[6] "Take" as defined by the federal Endangered Species Act (ESA) means "to harass, harm, pursue, hunt, shoot, would, kill, trap, capture, or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e. breeding, feeding, or sheltering) through significant habitat modifications or degradation. The CDFW also considers the loss of listed species habitat as "take", although this policy lacks statutory authority and case law support under the California Endangered Species Act (CESA).

required to provide a conclusive determination on presence or absence of sensitive resources from a particular location, where there is evidence of potential occurrence.

For the purposes of this Background Report, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Plant species with a Rank of 1A, 1B and 2 in the CNPS *Inventory of Rare and Endangered Plants*;
- Animal species designated as "Species of Special Concern" or "Fully Protected" by the CDFW;
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines; or
- Species considered to be a taxon of special concern by the relevant local agencies.

Special-Status Plants

Review of the CNDDB and CNPS occurrence records indicate a total of 43 special-status plant species that have been reported from or in the vicinity of the Planning Area. These special-status plant species are listed in **Table 2**, together with information on their typical habitat characteristics, normal flowering season, and conclusion regarding potential for occurrence in the Planning Area based on distribution and presence or absence of suitable habitat.

The CNDDB records show occurrences of nine special-status plant species extending over portions of the Planning Area – congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), Marin knotweed (*Polygonum marinense*), Mt. Tamalpais bristly jewelflower (*Streptanthus glandulosus* ssp. *pulchellus*), Marin western flax (*Hesperolinon congestum*), Napa false indigo (*Amorpha californica* var. *napensis*), Point Reyes salty bird's-beak (*Chloropyron maritimum* ssp. *palustre*), Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*), and white-rayed pentachaeta (*Pentachaeta bellidiflora*). The exact locations of most of these occurrences are unknown because of the vague descriptions and date of the historic records, so these are mapped as relatively broad occurrences on **Figure 2**. White-rayed pentachaeta is assumed to be extirpated from the Planning Area as a result of development in areas of grassland and woodland habitats that once supported the species, and displacement by non-native grasses and other invasive species. The occurrence of Marin knotweed from China Camp is from a much more specific location observed in 2006, and this species is still assumed to be present. Details on the location of most of the other special-status plant species are based on general occurrence records that are decades old, and their presence in the Planning Area today is uncertain.

Existing development limits the likelihood of continued occurrences of any populations of special-status plant species on the valley floors of the Planning Area, with the exception of brackish and saltmarsh associated species that could occur along the shorelines of San Francisco Bay, such as Point Reyes salty bird's-beak. Many of the special-status plant

species occurrences in the protected open space areas and undeveloped lands at the fringe of the Planning Area most like remain today, but are vulnerable to changes such as fire, competition with invasive species, and other threats. There remains a possibility that additional populations of one or more species occurs on the remaining undeveloped lands and the remaining coastal marshlands in the Planning Area. Detailed surveys would be required to provide confirmation on presence or absence from undeveloped portions of the Planning Area where thorough studies have not been conducted.

Special-Status Animals

Based on a review of the CNDDB and other sources, a total of 35 special-status animal species are known to occur or are considered to potentially occur in the vicinity of San Rafael, which are listed in **Table 3**. As indicated in **Figure 3**, a total of 15 occurrences of special-status animal species have been reported by the CNDDB within the Planning Area. These include: California black rail (*Laterallus jamaicensis*), California giant salamander (*Dicamptodon ensatus*), California red-legged frog (*Rana draytonii*), California Ridgeway's rail (*Rallus longirostris obsoletus*), monarch butterfly, mimic tryonia (*Tryonia imitator*), northern spotted owl (*Strix occidentalis caurina*), Opler's longhorn moth (*Adela oplerella*), pallid bat (*Antrozous pallidus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Pablo song sparrow (*Melospiza melodia samuelis*), western bumble bee (*Bombus occidentalis*), and western pond turtle (*Emys marmorata*). Nest activity centers of northern spotted owl are considered highly sensitive data, and are therefore not shared with the public. In addition, roosting colonies of more common great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), which are monitored by the CNDDB as sensitive habitat areas, are also reported from the Planning Area

Most of the special-status species in the San Rafael vicinity are bird species known or suspected to utilize suitable habitat in marsh and open water habitats, together with fish species that utilize the Miller Creek corridor and San Francisco Bay. Most of the species listed in **Table 3** that are not State and/or federally-listed species are not closely monitored by the CNDDB and therefore occurrence records are not generally included in the data base. These include species identified as "Species of Special Concern" by the CDFW. As indicated in **Figure 3**, no areas designated as Critical Habitat by the USFWS extend into the Planning Area.

Many of the special-status animal species listed in **Table 3** may occasionally pass through or forage within the Planning Area, but are not known or likely to breed in the Planning Area: Chinook salmon (*Oncorhynchus tshawytscha*), green sturgeon (*Acipenser medirostris*), redhead (*Aythya americana*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), American peregrine falcon (*Falco peregrinus anatum*), long-eared owl (*Asio otus*), olive-sided fly catcher (*Contopus cooperi*), purple martin (*Prognes ubis*), grasshopper sparrow (*Ammodramus savannarum*), tricolored blackbird (*Agelaius tricolor*), western red bat (*Lasiurus blossevillii*), and American badger (*Taxidea taxus*). American white pelican and California brown pelican are known to regularly forage over the open water and shoreline of San Francisco Bay, but do not breed in the San Francisco Bay Area. Coho salmon (*Oncorhynchus kisutch*) and tidewater goby are now considered extirpated from East Marin, including the Planning Area. Special-status animal species known from the Planning Area and of greatest concern from a planning standpoint because of their status or distribution are discussed in further detail below.

Steelhead–Central California Coast ESU (Federally Threatened). Steelhead is the anadromous form of rainbow trout, migrating from the ocean to freshwater streams to spawn. Juveniles spend one to three years in their natal streams before going to sea as smolts. Most steelhead return to freshwater streams after spending two to three years at sea. Important factors associated with preferred stream channel conditions include temperature, velocity, depth, gravel substrate, and water quality. Shaded banks with overhanging riparian vegetation (termed "shaded riverine aquatic cover" by the USFWS) are also beneficial to salmonids, providing foraging habitat and cover from predators. High water temperatures, low rates of streamflow, low levels of dissolved oxygen, low sediment input, and stream obstructions can be detrimental to steelhead populations.

Miller Creek through the Gallinas Valley in the northern portion of the Planning Area is known to support a resident steelhead population.[7] Fish were electrofished from Miller Creek as recently as 1997, and have been observed in previous studies but very little historic survey information is available for the watershed. Miller Creek is not designated critical habitat for the Central California Coast ESU of steelhead (see **Figure 3**), but likely constitutes a small but important production of steelhead to the regional fishery.

California Red-Legged Frog (Federally Threatened). California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Population declines of this species have been attributed to a variety of factors, with habitat loss and predation by non-native Aquatic predators (e.g., bullfrogs, crayfish, other non-native fishes) typically implicated as the primary factors. California red-legged frogs occur in and along freshwater marshes, streams, ponds, and other semi-permanent water sources. Optimal habitat contains dense emergent or shoreline riparian vegetation closely associated with deep (i.e., greater than 2.3 feet), still, or slowmoving water. Cattails, bulrushes, and willows provide the habitat structure that seems to be most suitable for California red-legged frogs. Although the species can occur in intermittent streams and ponds, they are unlikely to persist in streams in which all surface water disappears. Suitable breeding ponds and pools usually have a minimum depth of 20 inches, but California red-legged frogs do sometimes breed successfully in pools as shallow as 10 inches.[8] Regardless of water depth, suitable breeding habitat must contain water during the entire development period for eggs and tadpoles. Reproduction for red-legged frogs is also sensitive to salinity levels in the water.

According to the CNDDB records (see **Figure 3**), occurrences of California red-legged frogs have been reported from the Peacock Gap and San Rafael Point in the eastern portion of the Planning Area. Suitable habitat remains in other locations with freshwater bodies where salinity levels are low enough and in the upper watersheds if suitable breeding habitat is present.

Western Pond Turtle (California Species of Special Concern). Western pond turtles occur in a wide variety of aquatic habitats, including ponds, lakes, marshes, rivers, streams, and canals that typically have a rocky or muddy bottom and contain stands of aquatic vegetation. The presence or absence of pond turtles at a given aquatic site is largely dependent on the availability of suitable basking sites and adjacent upland habitat for egg-laying (e.g., sandy banks or grassy open fields) and over-wintering. Nests are typically dug in dry substrate with

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7 Leidy, R.A., G.S. Becker, and B.N. Harvey, 2005, op. cit.

8 Fellers, G.M., 2005. *California red-legged frog*. *In* M. Lannoo, editor. Amphibian Declines: The Conservation Status of Unites States Species.

a high clay or silt fraction since the female moistens the site where she will excavate the nest prior to egg-laying. Hatchlings require shallow water habitat with relatively dense submergent or short emergent vegetation in which to forage.

Western pond turtles have been recorded at John F McInnis Park in the northeastern portion of the Planning Area. Other freshwater bodies and streams with deep pools may provide suitable habitat for this species. Lower reaches of drainages under tidal influence are unlikely habitat for this species due to salinity levels, and the extent of adjacent development which limits the availability of upland locations for egg-laying.

Northern Spotted Owl (Federally and State Threatened). Northern spotted owl typically occurs in forest and dense woodland habitat along the Pacific coast from southern British Columbia to Marin County. It typically nests on platforms in large trees and will use abandoned stick nests of other bird species. In the southern part of its range through Marin County, dusky-footed woodrat tends to serve as the primary prey base for northern spotted owl.

The Spotted Owl Observations Database maintained by the CNDDB indicates a number of nest activity centers within and to the north and west of the Planning Area on San Pedro Mountain, in Marinwood Open Space along Big Rock Ridge, and along Southern Heights Ridge. However, this information is not shared with the public because of the vulnerability of nests to human disturbance. As indicated in **Figure 3**, designated critical habitat for northern spotted owl occurs about a mile and a half southwest of the Planning Area, where the majority of known activity centers have been reported within Marin County. Activity centers are locations where concentrated owl activity indicates a high likelihood of nesting, and where human disturbance during the nesting season could result in disruption and possible loss of the nesting young unless appropriate restrictions are implemented. Given the threatened federal and State status of northern spotted owl, disturbance in the vicinity of an activity center during the nesting season could be considered an incidental take in violation of the Endangered Species Acts (see Regulatory Framework below).

White-tailed Kite (California Fully Protected Species). Most white-tailed kites in California occur west of the Sierra Nevada in low lands and foothills, where they are often seen year-round. This species tends to nest in solitary trees and large shrubs located near suitable foraging habitat such as grasslands, marshes, and agricultural fields. Preferred prey items include California voles and mice.

The grasslands and tidal marsh habitats in the Planning Area provide foraging habitat for white- tailed kites, where scattered trees and large shrubs are present in the vicinity to provide suitable nesting locations. Nests of white-tailed kite in active use are fully-protected by the CDFW from any disturbance. Nests of native birds, including raptors such as white-tailed kite, are protected under the federal Migratory Bird Treaty Act and State Fish and Game code (see Regulatory Framework below).

Northern Harrier (California Species of Special Concern). Northern harriers are widespread in California, although they have become uncommon in the southern part of the State. Their preferred habitats are freshwater wetlands and saltmarshes, although they are also commonly found over grasslands and agricultural fields. Harriers breed from mid-March to September, building their nests on the ground and in low vegetation.

Suitable foraging habitat for northern harriers are present in the remaining grasslands and the tidal marsh habitats in the Planning Area, although nesting opportunities are limited because of the presence of human and dogs along the fringe of the marshland areas where most potential nesting habitat occurs.

California Black Rail (Federally Threatened; California Fully Protected Species). Around the San Francisco Bay Estuary, California black rails primarily inhabit tidal salt marsh dominated by pickleweed, but also occupy brackish marshes dominated by bulrush. California black rails prefer tidal marshes but will use high marshland zones during "wet" years.[9] Black rails build nests in tall grasses or marsh vegetation during the spring, with most nests constructed of pickleweed and placed on or slightly above the ground.

As indicated in **Figure 3**, California black rails have been detected along Gallinas Creek and the coastal salt marsh habitat in the northeastern portion of the Planning Area. This species may occupy or frequent the tidal marsh habitat at the mouth of San Rafael Creek and other shoreline areas of the Bay supporting tidal marsh habitat within the Planning Area.

California Ridgway's Rail (Federally and State Endangered; California Fully Protected Species). This secretive species prefers tidal salt marshes dominated by pickleweed and cordgrass with adjacent areas of high marsh cover dominated by pickleweed, gumplant, saltgrass, alkali heath, and/or fleshy jaumea (*Jaumea carnosa*). California Ridgway's rails also occupy tidal brackish marshes dominated by bulrush. The California subspecies is now restricted to the tidal marshlands around the San Francisco, San Pablo, and Suisun Bays. A Bay-wide survey in the early 1970s estimated a total population of between 4,000 and 6,000 birds.[10] Recent population estimates for California Ridgway's rails was approximately 1,040 to 1,264 individuals in San Francisco Bay.[11] Although habitat loss is implicated in population declines, predation of rails by the introduced red fox is also thought to be a major factor in the status of this species.

California Ridgway's rails have been detected in the tidal marsh along the mouths of Gallinas Creek and San Rafael Creek in the Planning Area, as indicated in **Figure 3**. This species may also occupy or frequent the tidal marsh habitat along the shoreline of the Bay were suitable coastal salt marsh is present within the Planning Area.

Samuels (San Pablo) Song Sparrow (California Species of Special Concern). This subspecies of the widely distributed song sparrow is restricted to the tidal marshes and adjacent uplands around the San Pablo Bay portion of San Francisco Bay. They occur primarily in tidal salt marshes, but may also nest or forage in other shoreline habitats such as

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9 Trulio, L.A., and J.G. Evens, 2000. *California Black Rail*. Pages 341-345 *in* Goals Project. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P. R. Olofson, ed. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

10 Gill, Jr., R., 1979. Status and distribution of the California clapper rail (Rallus longirostris obsoletus). California Fish and Game 65:36–49.

11 Albertson, J.D., and J.G. Evens, 2000. *California Clapper Rail*. Pages 332-340 *in* Goals Project. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P. R. Olofson, ed. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

seasonal wetlands, intertidal mudflats, and adjacent uplands.[12] Favored nesting substrate includes gumplant and cordgrass adjacent to tidal sloughs, although they also occur in stands of perennial pepperweed and bulrush. Suitable habitat for this species in the Planning Area includes the coastal salt marsh habitats near the mouths of Gallinas and San Rafael Creeks, other stands of suitable tidal marsh and adjacent uplands where natural habitat remains (see **Figure 3**).

Salt Marsh Harvest Mouse (Federally and State Endangered; California Fully Protected Species). Salt marsh harvest mouse are endemic to the tidal salt marshes of the San Francisco Bay Estuary. This species occurs primarily in marshes dominated by pickleweed, but also uses adjacent upland habitats during high tides. The presence of adequate peripheral halophyte plant cover adjacent to the pickleweed-dominated marsh plain is an important habitat component for this species, which depends on such cover for refuge from terrestrial predators during extremely high tides.

As indicated in **Figure 3**, salt marsh harvest mice have been reported from the salt marsh harvest mouse has been detected from the coastal salt marsh habitat near the mouth of San Rafael Creek, along the mouth of Gallinas Creek, and from the large area of coastal salt marsh habitat in the northeastern portion of the Planning Area.

Sensitive Habitats

Sensitive natural communities and jurisdictional waters are described below.

Sensitive Natural Communities

The CDFW tracks the occurrences of "special" plant communities that are either known or believed to be of high priority for inventory in the CNDDB. These plant communities are listed in the CDFW publication *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*.[13] These communities are sometimes addressed by lead or trustee agencies in CEQA documents, but generally are not afforded the same protection as CNPS Rank 1B and 2 plant species. Many sensitive natural community types support special-status plants and animals and are addressed under CEQA as essential habitat for those species.

As indicated in **Figure 2**, the CNDDB records indicate a large expanse of northern coastal salt marsh, a sensitive natural community type along the fringe of San Pablo Bay through the northeastern portion of the Planning Area. This sensitive natural community type occurs in other locations within the Planning Area along the fringe of the bay, including marshlands such as Pickleweed Park near the mouth of San Rafael Creek.

A number of other more widespread, but still sensitive natural community types are also known from the San Rafael vicinity but have not been mapped in the CNDDB inventory.

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12 Cogswell, H., 2000. *Song Sparrow*. Pages 374–385 *in* Goals Project. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P. R. Olofson, ed. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

13 California Department of Fish and Game, 2003. *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Data Base*. Wildlife and Habitat Data Analysis Branch, Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento.

Based on the *Manual of California Vegetation*[14] classification system and latest list of terrestrial natural communities prepared by CDFW, these include several associations of Black Oak Forests and Woodlands, Coastal and Montane Redwood Forests, several alliances and associations of Douglas Fir Forests, California Bay Forests and Woodlands, California Buckeye Woodlands, several associations of Coyote Brush Scrub, freshwater marsh, freshwater seeps and springs, and numerous alliances of native grasslands. Occurrences of these sensitive natural community types are most likely present within the remaining woodland, forest and grasslands in the Planning Area, but they have not been mapped as part of the CALVEG or CNDDB mapping programs. Detailed surveys would be required to provide confirmation on presence or absence from undeveloped portions of the Planning Area where thorough studies have not been conducted.

Jurisdictional Waters.

Although definitions vary to some degree, in general, wetlands are considered areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, and water recharge, filtration, and purification functions. The U.S. Army Corps of Engineers (Corps) and the USFWS developed technical standards for delineating wetlands that generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

A formal jurisdictional delineation of wetlands and other waters of the U.S. and State was not conducted for the Planning Area as part of this Background Report. However, based on information available from the NWI and familiarity with the Planning Area, numerous features can be assumed to fall under jurisdiction of the Corps and the Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Sections 401 and 404 of the federal Clean Water Act and as state waters regulated by the RWQCB under the Porter-Cologne Water Quality Control Act. Creeks and lakes are also regulated by the CDFW pursuant to Section 1600 of the California Fish and Wildlife Code, with jurisdiction extending to the top of bank or the outer dripline of riparian vegetation along these features, whichever is greater.

As indicated in **Figure 4**, features within the Planning Area that would likely be considered wetlands or other waters of the U.S. by the Corps include: the marshlands along the fringe of the Bay, mapped as estuarine and marine wetlands, freshwater wetlands, scattered waterbodies mapped as ponds or lakes, and riverine habitats along Miller Creek, Gallinas Creek, San Rafael Creek and the extensive network of tributary drainages in the upper watersheds. Additional jurisdictional other waters of the U.S. and wetlands maybe be present elsewhere in the Planning Area, but detailed site-specific assessments would be required to confirm presence or absence from undeveloped lands. As discussed under the Regulatory Setting below, the Corps, RWQCB and CDFW generally exercise authority over these various wetland habitat types.

A detailed wetland delineation and verification by the Corps would be required to determine the extent of jurisdictional wetlands on sites where modifications are proposed. Federally regulated waters along the numerous tributary drainages in the Planning Area (see **Figure 4**) are generally defined by the "Ordinary High Water Mark" rather than the band of adjacent

[14] Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento.

riparian vegetation, limiting Corps jurisdiction where dense willow riparian scrub and forest extend a considerable distance from the channel bank. However, the limits of State waters regulated by CDFW and RWQCB typically encompass both the bed and bank of a drainageway, as well as the limits of the associated riparian vegetation where it extends beyond the top of bank, and both agencies typically request that an adequate setback be provided to avoid both direct and indirect impacts on riparian corridors as part of environmental review for specific development plans.

Biological Resources – Regulatory Setting

Biological resources within the Planning Area are subject to agency jurisdiction and regulations, as described below.

STATE AND FEDERAL REGULATIONS

Endangered Species Act

The USFWS has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (ESA) and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section7 or Section 10 of the ESA. ESA defines "take" as "*harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct*." Federal regulation 50CFR17.3 defines the term "harass" as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering (50CFR§17.3). Furthermore, federal regulation 50CFR17.3 defines "harm" as an act that either kills or injures a listed species. By definition, "harm" includes habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering (50CFR217.12).

Section10(a) of the ESA establishes a process for obtaining an incidental take permit that authorizes nonfederal entities to incidentally take federally listed wildlife or fish. Incidental take is defined by ESA as take that is *"incidental to, and not the purpose of, the carrying out of another wise lawful activity*." Preparation of a habitat conservation plan, generally referred to as an HCP, is required for all Section 10(a) permit applications. The USFWS and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) have joint authority under the ESA for administering the incidental take program. NOAA Fisheries Service has jurisdiction over anadromous fish species and USFWS has jurisdiction over all other fish and wildlife species.

Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA, or result in the destruction or adverse modification of its habitat. Federal agencies are also required to minimize impacts to all listed species resulting from their actions, including issuance or permits or funding. Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat (ESA requires that the USFWS identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered). This consultation results in a Biological Opinion prepared by the USFWS stating whether implementation of the HCP will result in jeopardy to any HCP Covered Species or will adversely modify critical habitat and the measures necessary to avoid or minimize effects to listed species.

Although federally listed animals are legally protected from harm no matter where they occur, the Section 9 of the ESA provides protection for endangered plants by prohibiting the malicious destruction on federal land and other "take" that violates State law. Protection for plants not living on federal lands is provided by the California Endangered Species Act.

Clean Water Act

The Corps is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the U.S. These waters, and their lateral limit, are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark (33 CFR Part 328.3[e]) or the limit of adjacent wetlands (33 CFR Part 328.3[b]). Any permanent extension of the limits of an existing water of the U.S., whether natural or man-made, results in a similar extension of Corps jurisdiction (33 CFR Part 328.5).

Waters of the U.S. fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses generally lacking plant cover such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands are aquatic habitats that support hydrophytic wetland plants and include marshes, wet meadows, seeps, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal ponds, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the U.S.

Waters and wetlands that cannot trace a continuous hydrologic connection to a navigable water of the U.S. are not tributary to waters of the U.S. These are termed "isolated wetlands." Isolated wetlands are jurisdictional when their destruction or degradation can affect interstate or foreign commerce (33 CFR Part 328.3[a]). The Corps may or may not take jurisdiction over isolated wetlands depending on the specific circumstances.

In general, a project proponent must obtain a Section 404 permit from the Corps before placing fill or grading in wetlands or other waters of the U.S. Prior to issuing the permit, the Corps is required to consult with the USFWS under Section 7 of the ESA if the project may affect federally listed species.

All Corps permits require water quality certification under Section 401 of the Clean Water Act. In the San Francisco Bay Area, this regulatory program is administered by the San Francisco Bay RWQCB. Project proponents who propose to fill wetlands or other waters of the U.S. must apply for water quality certification from the RWQCB. The RWQCB has adopted a policy requiring mitigation for any loss of wetland, streambed, or other jurisdictional area.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act. In December 2017, the Department of the Interior (DOI) issued a memorandum reversing the incidental take

interpretation of the MBTA. Under the latest determination of the DOI, the take of a migratory bird or its active nest (i.e., with eggs or young) that is incidental to a lawful activity does not violate the MBTA. However, this opinion from the DOI is only the latest interpretation from the current Administration of the MBTA. This legal opinion is contrary to the long-standing interpretation for over 40 years that held the MBTA strictly prohibits the intentional or incidental killing of birds or destruction of their nests when in active use.

California Endangered Species Act

The CDFW has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under the California Endangered Species Act (CESA). CESA is similar to the federal ESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" rare or endangered species.

California Fish and Game Code

The CDFW is also responsible for enforcing the California Fish and Game Code, which contains several provisions potentially relevant to construction projects. For example, Section 1602 of the Fish and Game Code governs the issuance of Lake and Streambed Alteration Agreements by the CDFW. Lake or Streambed Alteration Agreements are required whenever project activities substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as such by the CDFW.

The Fish and Game Code also lists animal species designated as Fully Protected or Protected, which may not be taken or possessed at any time. The CDFW does not issue licenses or permits for take of these species except for necessary scientific research, habitat restoration/species recovery actions, or live capture and relocation pursuant to a permit for the protection of livestock. Fully protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while Protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42.

Several provisions in the California Fish and Game code provide for the protection of birds and bird nests in active use. Unless the Fish and Game Code (FGC) or its implementing regulations provide otherwise, under California law it is unlawful to:

- Take a bird, mammal, fish, reptile, or amphibian (FGC Section2000);

- Take, possess, or needlessly destroy the nest or eggs of any bird (FGC Section3503);

- Take, possess, or destroy any bird of prey in the orders Strigiformes (owls) and Falconiformes (such as falcons, hawks and eagles) or the nests or eggs of such bird (FGC Section3503.5);

- Take or possess any of the thirteen fully protected bird species listed in FGC Section3511;

- Take any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird) (FGC Section3800);

- Take or possess any migratory non-game bird as designated in the MBTA or any part of such bird, except as provided by rules or regulations adopted by the DOI under the MBTA (FGC Section3513);

- Take, import, export, possess, purchase, or sell any bird (or products of a bird), listed as an endangered or threatened species under the CESA unless the person or entity possesses an Incidental Take Permit or equivalent authorization from CDFW (FGC Section2050 et seq.).

Non-native species, including European starling, house sparrow, and rock pigeon, are not afforded any protection under the MBTA or California Fish and Game Code.

Porter-Cologne Water Quality Control Act

Under this Act (California Water Code Sections 13000–14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. The RWQCB asserts jurisdiction over isolated waters and wetlands, as well as waters and wetlands that are regulated by the Corps. Therefore, even if a project does not require a federal permit, it still requires review and approval by the RWQCB. When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of waste discharge requirements (WDRs) into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction Best Management Practices (BMPs).

McAteer-Petris Act

The McAteer-Petris Act and Suisun Marsh Preservation Act were adopted to protect San Francisco Bay and Suisun Marsh as great natural resources for the benefit of the public and to encourage development compatible with this protection. The San Francisco Bay Conservation and Development Commission (BCDC) was established to carry out this Act. The two primary goals of the BCDC are (1) to prevent the unnecessary filling of San Francisco Bay, and (2) to increase public access to and along the Bay shoreline. BCDC approval is required for all projects within 100 feet of the Bay shoreline, as well as projects that propose any filling or dredging within Bay waters.

Other Statutes, Codes, and Policies Affording Species Protection

The CDFW maintains an administrative list of Species of Special Concern (SSC), defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as federally, but not State-, threatened or endangered;
- Meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that, if realized, could lead to declines that would qualify it for State threatened or endangered status."

The CDFW's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, and reptiles and amphibians. Section 15380 of the *CEQA Guidelines* clearly indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein. In contrast to species listed under the federal ESA or CESA, however, SSC have no formal legal status.

The CNPS is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the state, as listed in the *Inventory of Rare and Endangered Plants of California*. CNPS has recently updated their rating system for the rarity of special-status plants, and now include both a California Rare Plant Rank and a Threat Rank. CEQA requires government agencies to consider environmental impacts of discretionary projects and to avoid or mitigate them where possible. Under Section 15380, CEQA provides protection for both State-listed species and for any other species which can be shown to meet the criteria for State listing. The CDFW recognizes that special-status plants with a California Rare Plant Rank of 1A (Presumed extinct in California), 1B (Rare, threatened, or endangered in California and elsewhere), and 2 (Rare and endangered in California, but are more common elsewhere) in the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing and these species should be addressed under CEQA review. In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS California Rare Plant Rank of 3 (Plant species for which additional data is needed – a review list) and 4 (Plant species of limited distribution - a watch list).

SAN RAFAEL GENERAL PLAN POLICIES

The Open Space and Conservation Elements of the City of San Rafael General Plan 2020 contain goals and policies related to biological resources. These are listed below by Element.

Open Space Element

GOAL 32: PROTECTED OPEN SPACE

It is the goal of San Rafael to preserve and protect open space and the natural environment for all to enjoy. *Preservation of open space and the natural environment have been a priority for San Rafael residents for many years. Whenever possible, the natural terrain and vegetation of the community should be preserved and maintained.*

OS-1. Open Space Preservation.

Preserve, through a variety of methods, the open space areas identified in the Inventory of Potential Open Space Sites (See Appendix I). Retain and protect open space areas that serve as delineators between neighborhoods and between adjacent communities, as wildlife habitat, and as visual assets for the community. Open space areas can also function as connections between neighborhoods, for example with the creation of pathways in environmentally appropriate areas.

OS-1a. Open Space Inventory. Update the Inventory of Potential Open Space Sites. Identify and prioritize open space parcels for future protection. Maximize the use of available resources when assessing City involvement in securing open space by applying the following non-prioritized evaluation criteria:

a. Environmental health and safety issues (specifically geology and hydrology), and potential geoseismic hazards.

b. Resource Areas and Aesthetics (visual backdrop or edge, unique site features, shorelines/ridgelines, wetlands, wildlife habitat including wildlife movement corridors and habitat for endangered species).

c. Importance to the community as a whole or adjoining neighborhoods.

d. Merits of alternative uses.

e. Proximity to other open space areas.

f. Recreation potential.

g. Accessibility.

h. Availability of outside financial assistance.

i. Potential maintenance and management costs and liability exposure for the City.

OS-1b. Preservation Opportunities. Through the development review process, preserve open space areas identified on the Open Space Inventory. Encourage the dedication of open space areas that are adjacent to public open space. Possibilities also include acquisition of fee title or acquiring easements for preserving open space. When potential open space is not contiguous to existing public open space, the preference is to retain the open space in private ownership. When portions of a site are retained as private open space, ensure the preservation and management of that open space through appropriate means, including required maintenance, as determined though development review. Work with other public and non-profit agencies to identify sources for acquisition and maintenance of open space.

OS-1c. Cluster Development. As part of the development review process, encourage the clustering of development to preserve desired open space.

OS-2. Open Space Management.

Maintain and manage City Open Space lands. Designate appropriate uses to specific sites. Determine maintenance needs to address uses and the preservation of natural amenities. Address illegal camping and campfires, disease control, erosion control, urban/wildlife interface, recreation and other activities harmful to open space environment, as well as vegetation management and wildlife habitat protection issues.

OS-2a. Open Space Management Plan(s). Establish a committee with representatives from neighborhood associations, environmental organizations, user groups and other stakeholders to prepare an Open Space Management Plan(s). The plan should address use and ongoing maintenance of open space areas. The management plan should address appropriate access points, parking areas, public information signage, trail extensions, restoration of erosion and other degraded areas, and guidelines for the location of amenities such as picnic tables and benches. Amend zoning provisions as needed. Funding options should be explored and identified for open space management such as open space maintenance assessment districts, agreements with other public agencies for maintenance, neighborhood "adoption," volunteer programs, private funding and other means.

OS-2b. Removal of Invasive Species. Use volunteer and other types of work crews to remove selected invasive vegetation from open space areas.

OS-2c. Diseased Vegetation. Work with County and regional experts in finding solutions for the prevention and disposal of diseased vegetation, such as vegetation affected by Sudden Oak Death Syndrome.

OS-2d. Illegal Encampments. Continue to work with private and public property owners to identify and remove illegal encampments in open space areas.

OS-3. Open Space Use.

Protect and preserve the natural value of open space and wildlife habitat areas while permitting educational and recreational uses compatible with these resources. Specific use objectives include:

a. Open space areas should be maintained in a natural state.

b. Open space areas are a community resource for use and enjoyment by the residents of San Rafael.

c. Uses of open space areas shall be secondary to open space preservation, and limited to those uses with a minimal impact on the environment.

OS-3a. Management of Private Open Space. In designating open space as part of a development project or with the dedication of land for open space, identify limitations to uses in those areas, such as restrictions on ornamental landscaping, structures and fences.

OS-4. Access to Open Space.

Encourage provision of access to open space areas in the design of adjacent development. Secure access paths shown on Exhibit 34 as part of subdivision approvals and design access paths to avoid or minimize neighborhood and user conflicts with sensitive wildlife habitat areas.

OS-4a. Access Points. Through the development review process, identify access points and parking areas to be retained and required improvements.

OS-5. Coordination with Other Jurisdictions.

Coordinate San Rafael's open space system with adjacent cities, Marin County, the State, and regional and private open space systems.

OS-5a. Coordination with Other Jurisdictions. Continue to work with public agencies managing open space within the San Rafael Planning Area to ensure a coordinated system.

OS-6. Utilities in Open Space.

Discourage utilities in open space areas. Necessary utilities in open space should be located and designed to minimize harm to the area's environmental and visual quality.

OS-6a. Utilities in Open Space. Use zoning ordinance provisions and the design and environmental review processes to evaluate the location and design of public utilities.

OS-7. Public Education.

Provide education programs to residents about wildlife, fire hazard, watershed protection and open space habitat.

OS-7a. Public Education. Continue outreach and public education. Examples include the dissemination of educational materials and programs related to wildland fire prevention, feral cats, and Marin County Stormwater Pollution Prevention Program (MCSTOPPP) requirements.

Conservation Element

GOAL 33: PROTECTED HABITAT
It is the goal of San Rafael to have enhanced habitat for native plants and animals, and special protection for species that are listed as threatened or endangered. *San Rafael is rich in wildlife and native plant habitats, such as wetlands, creeks, shorelines, oak woodlands and riparian areas, as well as wildlife corridors between them, and these habitats are being protected or restored as necessary.*

CON-1. Protection of Environmental Resources.
Protect or enhance environmental resources, such as ridgelines, wetlands, diked baylands, creeks and drainageways, shorelines and habitat for threatened and endangered species.

CON-1a. Plans for Environmental Protection. Complete the implementation of Mahon Creek Final Conceptual Plan and the Shoreline Park Master Plan.

CON-2. Wetlands Preservation.
Require appropriate public and private wetlands preservation, restoration and/or rehabilitation through compensatory mitigation in the development process for unavoidable impacts. Support and promote acquisition of fee title and/or easements from willing property owners.

CON-2a. Wetlands Overlay District. Continue to implement wetlands policy through the Wetlands Overlay zoning district and development review.

CON-3. Wetland Protection and Mitigation.
In order to protect and preserve valued wetlands, loss of wetlands due to filling shall be avoided, unless it is not possible or practical. When it is demonstrated that it is not possible or practical to avoid filling a wetland because of site constraints and conditions such as the geographic location of the wetlands, site configuration and size, require that the wetland be replaced on-site, and in-kind at a minimum ratio of 2:1 (e.g., 2 acres for each acre lost). If it is determined that on-site mitigation is not possible or practical, off-site mitigation shall be required at a minimum replacement ratio of 3:1. As assessed and determined on a case-by-case basis, the City may waive this policy for fill of small wetlands (0.1 acre or less in size), provided that: (1) the wetland is isolated meaning that it is not within, a part of, directly connected with or hydrologically-linked by natural flow to a creek, drainageway, wetland or submerged tidelands; (2) it is demonstrated by a wetland expert that the preservation of the wetland is not practical as it would not result in a functioning, biological resource because of its isolation; (3) the City has determined that filling would result in a more appropriate and desirable site plan for the project; and (4) the City consults with and considers comments received from the appropriate resource agencies with wetland oversight (State of California Department of Fish and Game and/or the California Regional Water Quality Control Board).

a. **Creation of Wetlands**. The creation of wetlands shall be (1) of a similar habitat type to that of the existing wetlands and (2) of at least equal functional quality. The wetlands should be created or restored on or adjacent to the site, where possible. If on-site creation is infeasible due to technical constraints, compensatory habitat may be created off-site, preferably in the same drainage basin. Restoration of former filled, drained or diked wetland habitat is preferred over creation of wetlands on lands that were historically uplands. Plans for this habitat shall be prepared by a qualified wetland restoration ecologist in consultation with appropriate federal and state resource agencies. Mitigation plans shall require an annual monitoring for a period of time as specified by a qualified biologist to determine mitigation success. Contingency measures to deal with the potential for a lack of success should also be included in the plan.

b. **Timing of Restoration or Creation**. Restoration or creation of wetlands should be completed prior to construction of the development. Where construction activities would adversely impact wetland restoration or creation, wetlands restoration or creation may completed after construction of the development, as determined through development review.

> **CON-3a. Project Mitigation.** Continue the City's practice of requiring mitigation for projects that would affect wetlands, in conjunction with recommendations of State and Federal agencies.
>
> Maintain a minimum 50-foot development-free setback from wetlands, including, but not limited to, paving or structures. Setbacks of greater than 50 feet may be required on lots of two or more acres as determined through development review. The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the wetland to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

CON-5. Diked Baylands.
Protect seasonal wetlands and associated upland habitat contained within undeveloped diked baylands, or restore to tidal action. Support and promote acquisition from willing property owners.

CON-6. Creek and Drainageway Setbacks.
Require development-free setbacks, except for specific access points as approved per policy CON-7 (Public Access to Creeks), from existing creeks and drainageways that will maintain the functions and resulting values of these habitats. Appropriate erosion control and roadway crossings may encroach into the development setback. In the absence of vegetation, promote new growth of natural habitat.

a. **Creek Setback.** Maintain a minimum 25-foot development-free setback from the top of creek banks for all new development (including, but not limited to, paving and structures), except for Miller Creek and its tributaries, where a minimum 50-foot setback shall be maintained. Setbacks up to 100 feet may be required on lots or development projects two or more acres in size where development review determines a wider setback is needed to maintain functions and resulting habitat values and in areas where high quality riparian habitat exists.

The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the creek to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

b. **Drainageway Setbacks**. Drainageway setbacks shall be established through individual development review, taking into account existing habitat functions and resulting values.

CON-6a. Municipal Code Compliance. Ensure that the San Rafael Municipal Code complies with local, state, and federal regulatory agencies requirements for erosion control.

CON-7. Public Access to Creeks.
Provide pedestrian access to points along creeks throughout the City where such access will not adversely affect habitat values.

CON-7a. Creek Access Points. Proactively identify and create desirable access points to creeks on public lands.

CON-7b. Public Access. Through the development review process, identify and secure areas appropriate for access points to creeks.

CON-7c. Website Publicity. Use the City's website to publicize information about protecting and accessing San Rafael's creeks and waterways.

CON-7d. Creek Signage. Develop a program to provide attractive signage identifying creeks.

CON-8. Enhancement of Creeks and Drainageways.
Explore enhancement of, and support continuous upgrades to, drainageways to serve as wildlife habitat corridors for wildlife movement and to serve as flood control facilities to accommodate storm drainage. Require creek enhancement and associated riparian habitat restoration/creation for projects adjacent to creeks to maintain storm flows, reduce erosion and maintenance and improve habitat values, where feasible.

CON-8a. Creek Restoration. Encourage and support efforts by neighborhood associations, environmental organizations and other interested groups to fund creek enhancement, restoration and maintenance programs.

CON-8b. Tree Retention. Retain trees along creeks, where possible, for preservation of riparian habitat and to inhibit growth of algae.

CON-9. Native and/or Sensitive Habitats.
Protect habitats that are sensitive, rare, declining, unique or represent a valuable biological resource.

CON-9a. Steelhead Habitat. Support efforts to restore, preserve or enhance Central California Coast Steelhead habitat in Miller Creek and other creeks.

CON-9b. Feral Cats. To protect habitats, especially for birds and small animals, continue to fund programs of the Marin Humane Society including those to reduce the population of feral cats.

CON-10. Impacts to Sensitive Habitats.
Minimize impacts to sensitive natural habitats through careful planning. Require compliance with applicable laws and regulations.

CON-10a. Oak Savanna/Woodland Habitat Protection. Require that proposed developments with potential impacts to oak savanna/woodland habitat to either avoid, minimize, or compensate for the loss of oak savanna/woodland habitat. Avoidance would be the preferred measure where feasible. If it is deemed that an impact is unavoidable, minimization of direct and indirect impacts or compensation through habitat restoration, creation, or enhancement would be required.

CON-11. Wildlife Corridors.
Preserve and protect areas that function as wildlife corridors, particularly those areas that provide natural connections permitting wildlife movement between designated sensitive habitats.

CON-12. Preservation of Hillsides.
Encourage preservation of hillsides, ridgelines and other open areas that serve as habitat and erosion protection as well as visual backdrops to urban areas.

CON-12a. Hillside Design Guidelines. Continue to implement the Hillside Design Guidelines.

CON-13. Threatened and Endangered Species.
Preserve and protect threatened and endangered species of plants and animals formally listed consistent with the state and federal endangered species acts including protection of their habitat.

CON-13a. List of Species. Maintain a current list of threatened and endangered and special status species.

CON-14. Special Status Species.
Preserve and protect special status plants and animals, including candidate species for listing under the state and federal endangered species acts, California species of special concern, California Native Plant Society List 1B plants, and other species protected under provisions of California Fish and Game Code.

CON-14a. Surveys. Require that vacant sites be surveyed for the presence or absence of relevant special status species prior to development approval. Responsibility: Community Development,

CON-14b. Minimization. Require that where impacts to special status species are deemed unavoidable, potential impacts to the identified species are minimized through design, construction, and operation of the project. Compensation measures could include on-site set asides or off-site acquisitions (e.g. conservation easements, deed restrictions, etc.) that would be required if project

impacts result in direct loss or indirect impacts that cannot be mitigated in other ways. This might also involve species-specific enhancement restoration efforts for the mitigation lands.

CON-15. Invasive Non-Native Plant Species.
Remove and control selected undesirable invasive non-native plant species from City-owned open space and road right of ways, and encourage the removal and control of these invasive plant species from non-City owned ecologically-sensitive areas.

CON-15a. Invasive Plant Ordinance. Consider the legality, feasibility and enforceability of an Invasive Plant Ordinance addressing the removal of invasive species on private and public properties. As part of the ordinance, evaluate the benefits and impacts of using herbicide on invasive species where there are no other feasible controls.

CON-15b. Removal of Invasive Species on Public Property. Institute a program to remove invasive plant species on public properties. Consider the use of volunteers and private organizations to assist in this effort.

CON-16. Landscape with Native Plant Species.
Encourage landscaping with native and compatible non-native plant species, especially drought-resistant species.

CON-16a. Distribution of Information. Distribute Marin Municipal Water District and other organizations' educational materials about native plant landscaping.

Biological Resources – Summary of Key Issues and Opportunities

The current San Rafael General Plan 2020 serves as the principal planning document regulating development and providing for conservation of important resources on a local level. As listed above, the Open Space and Conservation Elements of the current General Plan contain numbered policies addressing the protection of sensitive biological and wetland resources. The Community Development Department is responsible for reviewing individual development applications to ensure compliance with CEQA and the National Environmental Policy Act (NEPA).

The San Rafael General Plan 2040 update process provides an opportunity to reevaluate the appropriateness and deficiencies of current policies and associated programs and determine any additional goals and policies necessary to provide a framework to adequately identify, protect, and manage natural resources within the Planning Area. Based on a review of the above policies from the Open Space and Conservation Elements of the current General Plan, this could include additional policies and programs related to:

- Protection of mature trees and other native vegetation, particularly along riparian corridors and in stands of native woodlands.
- Further control and eradication of non-native invasive species where they compromise native habitat values

- Participation in regional habitat restoration efforts such as the wetland restoration occurring around San Pablo Bay, and
- Conformance with State and federal regulations related to special-status species, wetlands, and other jurisdictional waters.

Biological Resources – Persons Responsible for Report Preparation

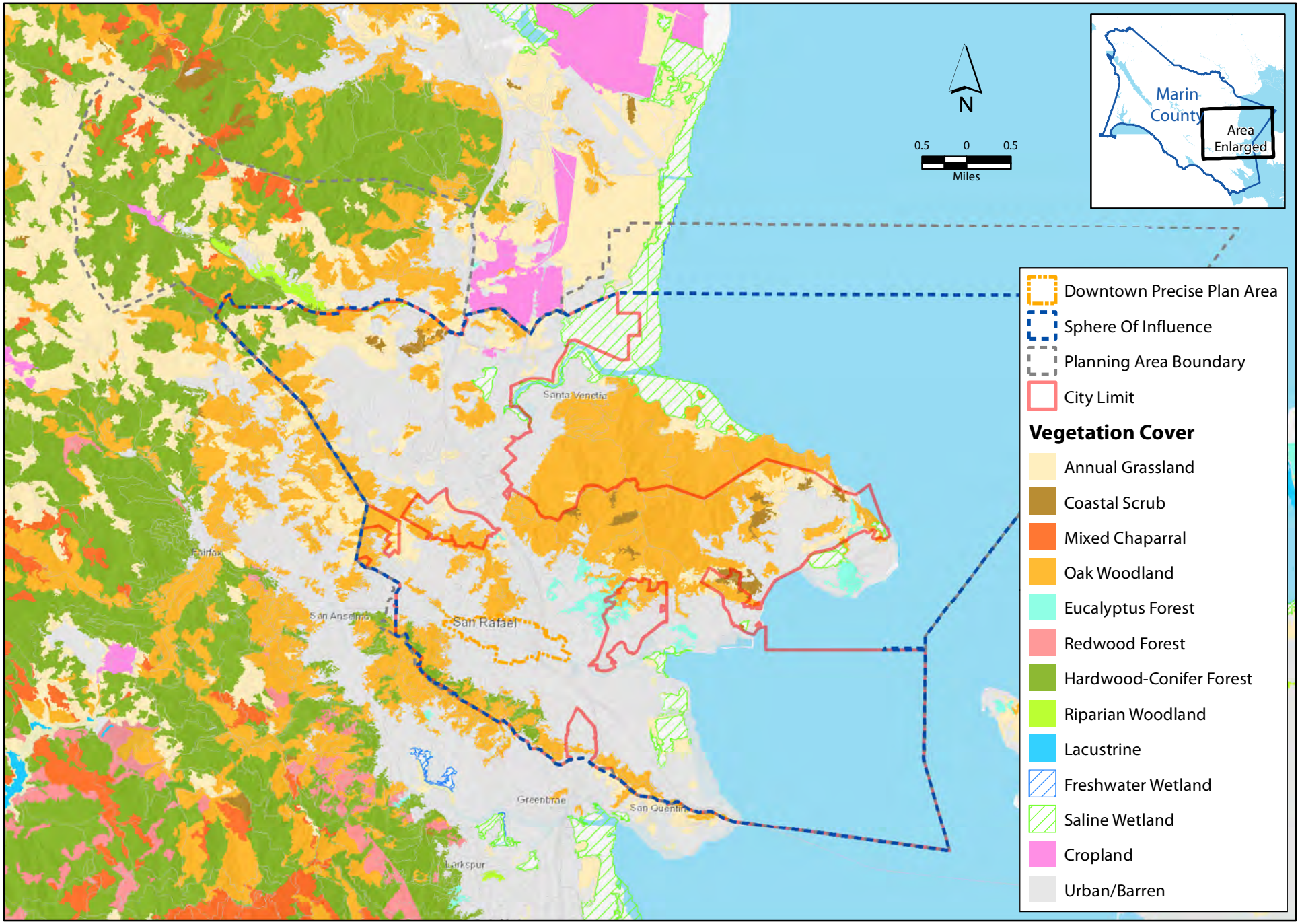
Environmental Collaborative – Project Biologist
Jim Martin, Principal

Digital Mapping Solutions - GIS Mapping
Esther Mandeno, GIS Specialist

PlaceWorks – Lead Consultant

Figure 1. Vegetative Cover

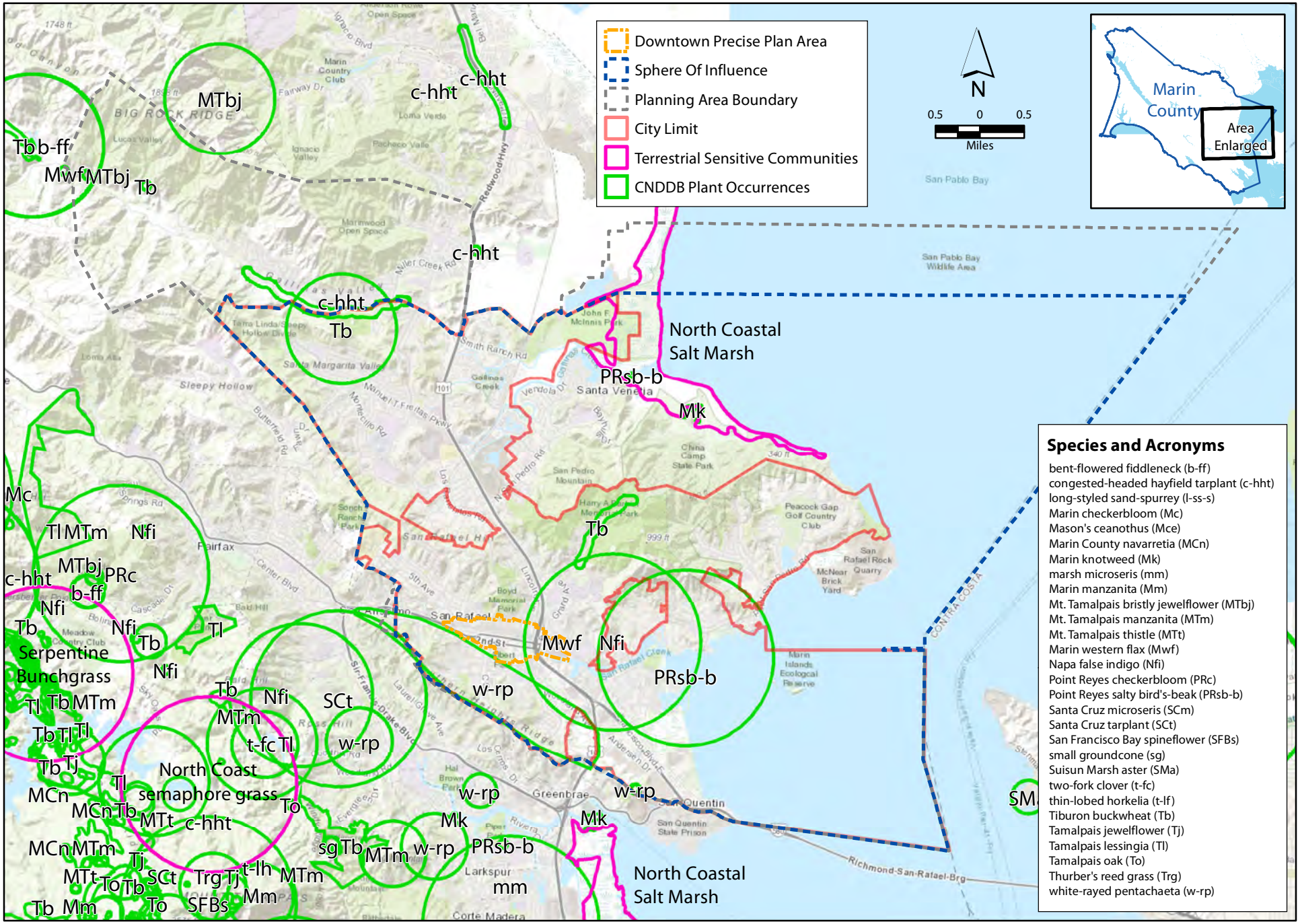
San Rafael General Plan Update



SOURCES: EVEG from USFS showing CALVEG CWHR Type (aggregated); accessed on April 23, 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 9/5/2019.

Figure 2. Special-Status Plant Species and Sensitive Natural Communities

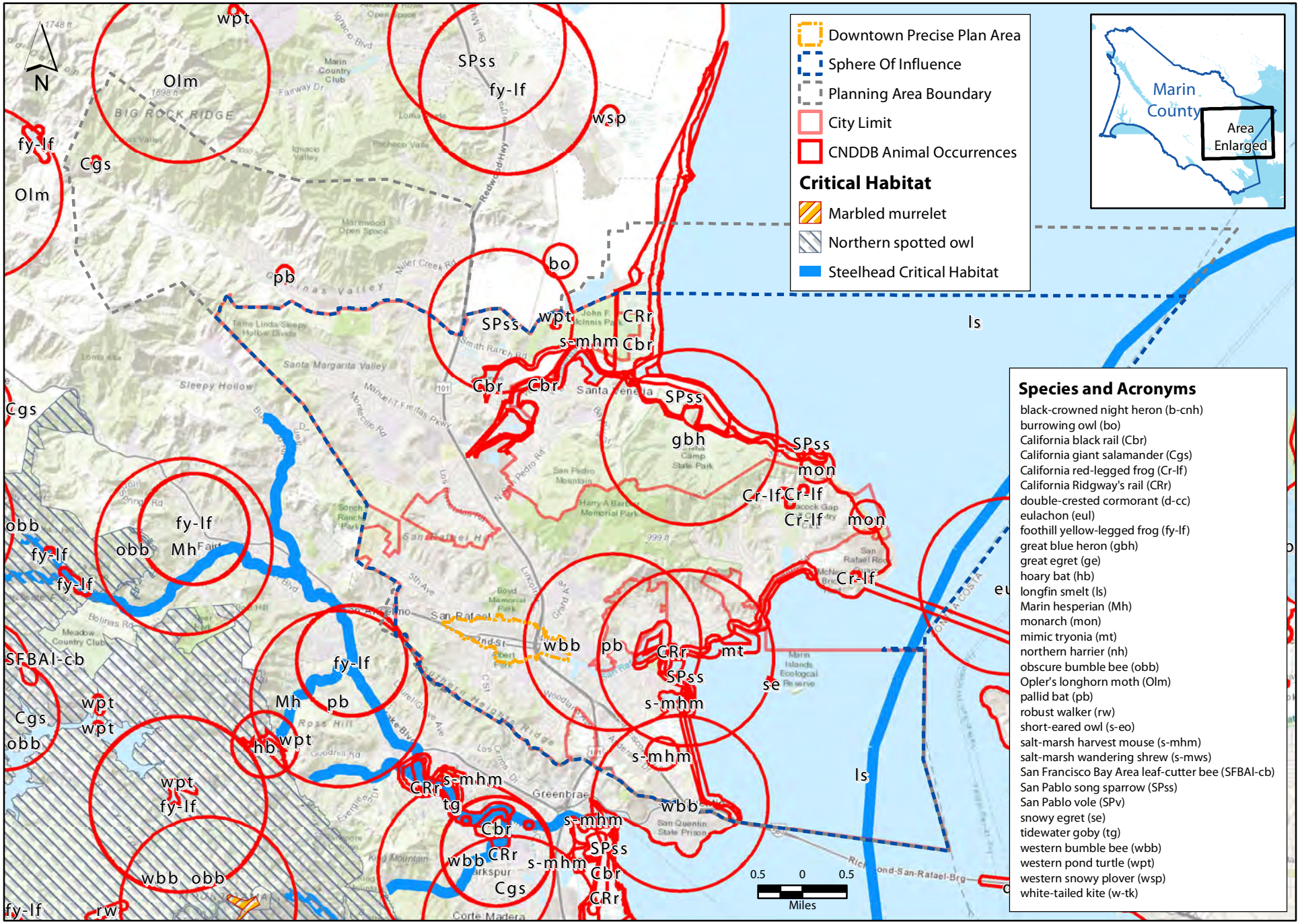
San Rafael General Plan Update



SOURCES: California Natural Diversity Database accessed August 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Figure 3. Special-Status Animal Species and Critical Habitat

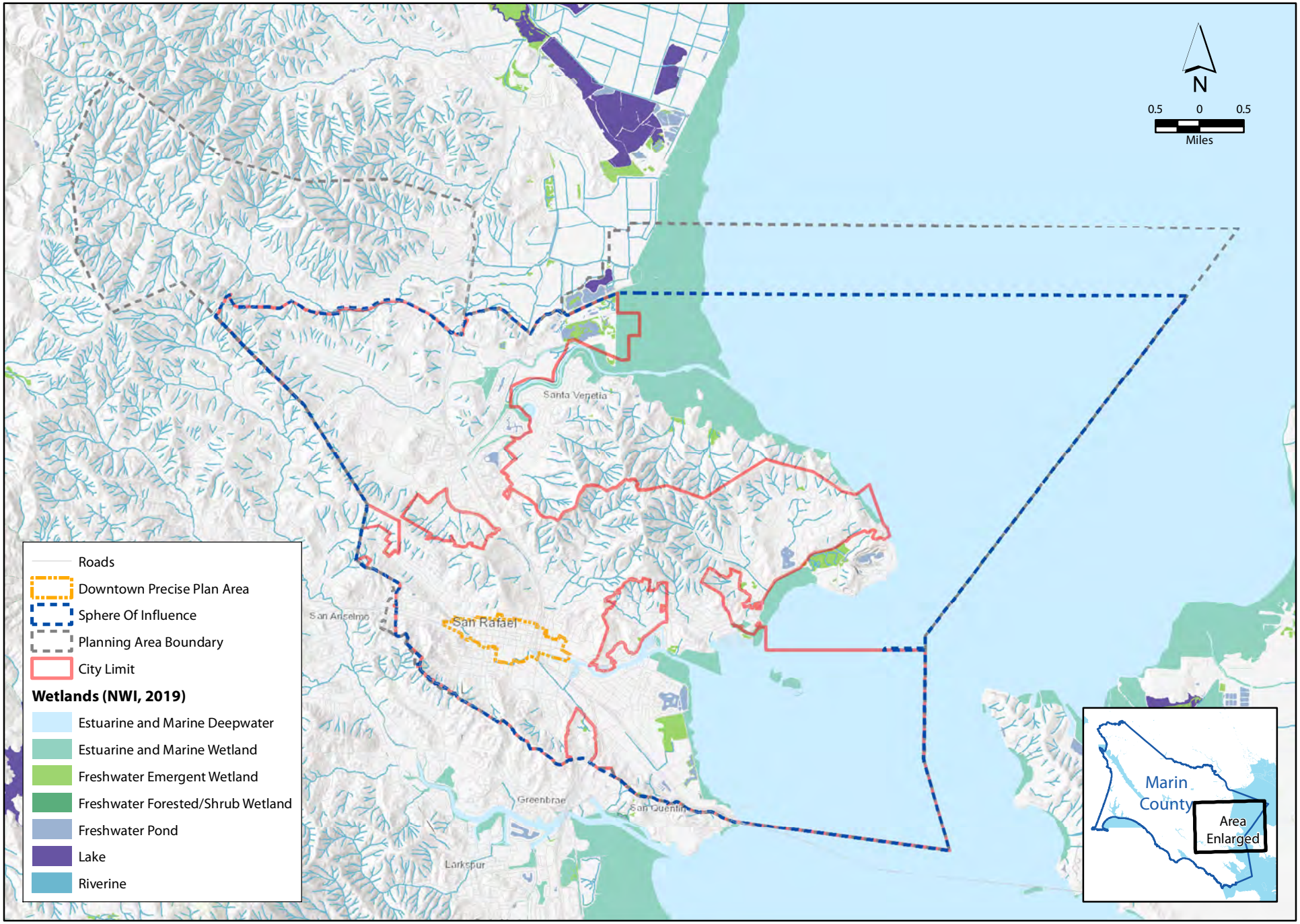
San Rafael General Plan Update



SOURCES: California Natural Diversity Database and USFWS Critical Habitat database accessed on April 16, 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Figure 4. National Wetland Inventory Map

San Rafael General Plan Update



SOURCES: U.S. Fish & Wildlife Service National Wetlands Inventory accessed on April 28, 2019; Base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Table 2: Special-Status Plant Species Known or Suspected to Possibly Occur in San Rafael Vicinity

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence in Planning Area
Amorpha californica var. napensis Napa false indigo	1B.2	Openings in broadleafed upland forest, chaparral, cismontane woodland. April-July	Moderate. CNDDB general occurrence from south San Rafael.
Amsinckia lunaris Bent-flowered fiddleneck	1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. March-June	Moderate. CNDDB general occurrence from west end of Lucas Valley.
Arctostaphylos montana ssp. montana Mt. Tamalpais manzanita	1B.3	Chaparral, valley and foothill grassland/serpentinite, rocky. February-April	Low. No known occurrences reported by CNDDB in Planning Area.
Arctostaphylos virgate Marin manzanita	1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, North Coast coniferous forest on sandstone, or granitic substrates. January-March	Low. No known occurrences reported by CNDDB in Planning Area.
Amorpha californica var. napensis Napa false indigo	1B.2	Broadleafed upland forest (openings); chaparral; cismontane woodland. April-July	Moderate. CNDDB general occurrences from San Rafael.
Calochortus tiburonensis Tiburon mariposa-lily	FT/ST/1B.1	Open, rocky slopes in serpentine grassland. March-June	Low. No known occurrences reported by CNDDB in Planning Area.
Calamagrostis crassiglumis Thurber's reed grass	2B.1	Coastal scrub (mesic); marshes and swamps (freshwater). May-August	Low. No known occurrences reported by CNDDB in Planning Area.
Castilleja affinis ssp. neglecta Tiburon paintbrush	FE/ST/1B.2	Rocky serpentine sites in grasslands. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Ceanothus masonii Mason's ceanothus	1B.2	Chaparral with serpentine affinity. March-April	Low. No known occurrences reported by CNDDB in Planning Area.
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	1B.2	Marshes and swamps (coastal salt), usually in coastal salt marsh with *Salicornia*, *Distichlis*, *Jaumea* and *Spartina*; 0-10 meters. June-October	Moderate. CNDDB general occurrence from San Rafael and Santa Venetia shoreline of Planning Area.
Chorizanthe cuspidata var. cuspidate San Francisco Bay spineflower	1B.2	Sandy soil on terraces and slopes in coastal bluff, coastal dunes, coastal scrub, and coastal prairie habitat. April-July (August rarely)	Low. No known occurrences reported by CNDDB in Planning Area..
Cirsium hydrophilum var. vaseyi Mt. Tamalpais thistle	1B.2	Serpentine seeps and streams in chaparral and woodland. May-August	Low. No known occurrences reported by CNDDB in Planning Area.
Dirca occidentalis Western leatherwood	1B.2	Broadleafed upland forest; closed-cone coniferous forest; chaparral; cismontane woodland, North Coast coniferous forest; riparian forest; riparian woodland. January-April	Low. No known occurrences reported by CNDDB in Planning Area.
Eriogonum luteolum var. caninum Tiburon buckwheat	1B.2	Serpentine soils; sandy to gravelly sites. May-September	Moderate. CNDDB general occurrence from Santa Margarita Valley.
Fissidens pauperculus Minute pocket moss	1B.2	Moss growing on damp soil in coniferous forests along the coast; in dry streambeds and stream banks.	Low. No known occurrences reported by CNDDB in Planning Area.
Fritillaria lanceolate var. tristulis Marin checker lily	1B.1	Coastal scrub, valley and foothill grassland, and coastal prairie; often on serpentine; various soils reported though usually clay. February-April	Low. No known occurrences reported by CNDDB in Planning Area.
Fritillaria liliacea Fragrant fritillary	1B.2	Often serpentinite; cismontane woodland, coastal prairie, coastal scrub; valley and foothill grassland. February-April	Low. No known occurrences reported by CNDDB in Planning Area.

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence in Planning Area
Gilia millefoliata Dark-eyed gilia	1B.2	Coastal dunes. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Helianthella castanea Diablo helianthella	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. March-June	Low. No known occurrences reported by CNDDB in Planning Area.
Hemizonia congesta ssp. congesta Congested-headed hayfield tarplant	1B.2	Valley and foothill grassland, sometimes roadsides. April-November	Moderate. CNDDB general occurrence from Santa Margarita Valley.
Hesperolinon congestum Marin western flax	FT/ST/1B.1	Serpentine barrens and serpentine grassland and chaparral. April-July	Moderate. CNDDB general occurrence from San Rafael and west end of Lucas Valley.
Holocarpha macradenia Santa Cruz tarplant	FT/SE/1B.1	Light, sandy soil or sandy clay, often with non-natives in coastal prairie and grasslands. June-October	Low. No known occurrences reported by CNDDB in Planning Area.
Horkelia tenuiloba Thin-lobed horkelia	1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland on sandy soils, mesic openings. May-July	Low. No known occurrences reported by CNDDB in Planning Area.
Kopsiopsis hookeri Small groundcone	2B.3	Open woods, shrubby places, generally on *Gaultheria shallon*. April-August	Low. No known occurrences reported by CNDDB in Planning Area.
Lessingia micradenia var. micradenia Tamalpais lessingia	1B.2	Usually on serpentine, in serpentine grassland or chaparral, often on roadsides. (June rarely) July-October	Low. No known occurrences reported by CNDDB in Planning Area.
Microseris paludosa Marsh microseris	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Navarretia rosulata Marin County navarretia	1B.2	Closed-cone coniferous forest and chaparral on serpentinite. May-July	Low. No known occurrences reported by CNDDB in Planning Area.
Pentachaeta bellidiflora White-rayed pentachaeta	FE/SE/1B.1	Cismontane woodland, valley and foothill grassland on open, dry rocky slopes and grassy areas, often on serpentinite. March-May	Moderate. CNDDB general occurrences from south San Rafael.
Plagiobothrys glaber Hairless popcorn-flower	1A	Coastal salt marshes, alkaline meadows, and seeps. March-May	Low. No known occurrences reported by CNDDB in Planning Area.
Pleuropogon hooverianus North Coast semaphore grass	1B.1	Wet grassy, usually shady areas, sometimes in freshwater marsh, associated with forest environments. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Polypogon marinense Marin knotweed	3.1	Coastal salt marshes, brackish water marsh, and riparian wetlands. May-August	Moderate. CNDDB occurrence reported from Santa Venetia shoreline.
Quercus parvula var. tamalpaisensis Tamalpais oak	1B.3	Lower montane coniferous forest. March-April	Low. No known occurrences reported by CNDDB in Planning Area.
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	1B.2	Freshwater marshes near the coast. April-September	Low. No known occurrences reported by CNDDB in Planning Area.
Sidalcea hickmanii ssp. viridis Marin checkerbloom	1B.1	Chaparral, cismontane woodland; lower montane coniferous forest. May-August	Low. No known occurrences reported by CNDDB in Planning Area.
Spergularia macrotheca var. longistyla Long-styled sand-spurrey	1B.2	Meadows and seeps; marshes and swamps. February-June	Low. No known occurrences reported by CNDDB in Planning Area.

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence in Planning Area
Stebbinsoseris decipiens Santa Cruz microseris	1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland in open areas, sometimes on serpentinite. April-May	Low. No known occurrences reported by CNDDB in Planning Area.
Streptanthus batrachopus Tamalpais jewel-flower	1B.3	Closed-cone coniferous forest, chaparral, Talus serpentine outcrops. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Streptanthus glandulosus ssp. Niger Tiburon jewel-flower	FE/SE/1B.1	Shallow, rocky serpentine slopes in grasslands. May- June	Low. No known occurrences reported by CNDDB in Planning Area.
Streptanthus glandulosus ssp. pulchellus Mount Tamalpais bristly jewel-flower	1B.2	Serpentine slopes. May-July (August rarely)	Moderate. CNDDB general occurrence from west end of Lucas Valley.
Symphyotrichum lentum Suisun Marsh aster	1B.2	Marshes and swamps (brackish and freshwater); most often seen along sloughs with *Phragmites*, *Scirpus*, blackberry, *Typha*, etc. May-November	Low. No known occurrences reported by CNDDB in Planning Area.
Trifolium amoenum Two-fork clover	FE/1B.1	Coastal bluff scrub, valley and foothill grassland, sometimes on serpentinite. April-June	Low. No known occurrences reported by CNDDB in Planning Area..
Trifolium hydrophilum Saline clover	1B.1	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. April-June	Low. No known occurrences reported by CNDDB in Planning Area..
Triquetrella californica Coastal triquetrella	1B.2	Grows within 30 miles from the coast in coastal scrub, grasslands, and in open gravels on roadsides, hillsides, rocky slopes	Low. No known occurrences reported by CNDDB in Planning Area..

[a] Status: FE = federally endangered
SE = State endangered
FT = federally threatened
ST = State threatened
CNPS Ranking:
1A = Presumed extinct in California
1B = Rare, threatened or endangered in California and elsewhere
2 = Rare, threatened, or endangered in California, but more common elsewhere
3 = A review list

Source: Records based on California Native Plant Society's on-line *Inventory of Rare and Endangered Plants* and CNDDB occurrence data.

Table 3: Special-Status Animal Species Known or Suspected to Possibly Occur in San Rafael Vicinity

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Fish			
Coho salmon (Central California Coast ESU[b]) *Oncorhynchus kisutch*	FE, SE	Coastal streams from Punta Gorda in northern California down to and including the San Lorenzo River in central California, as well as some tributaries to San Francisco Bay	Moderate. Species historically occurred in larger drainages of east Marin County.[1] Species last recorded from San Francisco Bay tributary during early-to-mid 1980s.[2] Corte Madera Creek designated as critical habitat and essential fish habitat for this species.
Chinook salmon (Central Valley Spring-run ESU) *Oncorhynchus tshawytscha*	FT, ST	Requires clear, cool streams with pools and riffles, with coarse gravel beds for spawning. Sacramento River and its tributaries	Moderate. Known to occasionally occur in Corte Madera Creek and other drainages of east Marin County, but fish may be of hatchery origin.[3]
Steelhead (Central California Coast ESU) *Oncorhynchus mykiss*	FT	Coastal streams from Russian River south to Aptos Creek (Santa Cruz Co.), including streams tributary to San Francisco and San Pablo Bays	Moderate. Species historically occurred in larger drainages of east Marin County.[4] Corte Madera Creek and major tributaries are designated as critical habitat.
Green sturgeon *Acipenser medirostris*	FT, SSC	Oceanic waters, bays, and estuaries; spawns in deep pools in large, turbulent freshwater river mainstems; known to forage in estuaries and bays from San Francisco Bay to British Columbia	Moderate. Known from San Pablo Bay and may occur in lower reaches of major drainages.
Tidewater goby *Eucyclogobius newberryi*	FE, SSC	Brackish shallow lagoons and lower stream reaches where water is fairly still but not stagnant	Low. CNDDB record is of an extirpated population recorded in 1961 near the mouth of Corte Madera Creek. Species generally considered extirpated in the region.
Delta smelt *Hypomesus transpacificus*	FT	Found in the Sacramento-San Joaquin estuary in saltwater, brackish and freshwater habitats	Moderate. Known from San Pablo Bay.
Tomales roach *Lavinia symmetricus*	SSC	Known only from Walker Creek and Lagunitas Creek watersheds, in a variety of habitat conditions.	Low. No known occurrences reported by CNDDB in Planning Area.
Longfin smelt *Spirinchus thaleichthys*	FC, ST, SSC	Open water estuaries and bays, both in saltwater and freshwater areas	Moderate. Known from San Pablo Bay.

[1] Leidy, R.A., C.S. Becker, and B.N. Harvey, 2007, *Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary, California*.

[2] Ibid.

[3] Leidy, R.A., G.S. Becker, and B.N. Harvey, 2005. *Historical distribution and current status of steelhead/rainbow trout (Oncorhynchus mykiss) in streams of the San Francisco Estuary, California.* Center for Ecosystem and Restoration, Oakland, California.

[4] Ibid.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Eulachon (southern DPS[b]) *Thaleichthys pacificus*	FT	Open water estuaries and bays, both in saltwater and freshwater areas	Moderate. Known from San Pablo Bay.
Amphibians and Reptiles			
Foothill yellow-legged frog *Rana boylii*	SSC	Perennial streams and drainages with cobble substrate.	Moderate. CNDDB occurrences to the west and north of Lucas Valley.
California red-legged frog *Rana draytonii*	FT, SSC	Ponds, streams, drainages and associated uplands; requires areas of deep, still, and/or slow-moving water for breeding.	High. CNDDB occurrences from China Camp State Park vicinity in Planning Area.
California giant salamander *Dicampton ensatus*	SSC	Ponds, streams, drainages and associated uplands; prefers fast moving water in coastal forests and valley-foothill riparian habitats with cover.	High. CNDDB occurrence from Lucas Valley in Planning Area.
Western pond turtle *Actinemys marmorata*	SSC	Ponds, streams with deep pools, drainages and associated uplands for egg laying	High. CNDDB occurrence from John F McInnis Park in Planning Area.
Invertebrates			
Opler's longhorn moth *Adela oplerella*	none	Typically found on serperntine grasslands where larval host plant, *Platystemon californicus*, is present.	Moderate. CNDDB occurrence from Big Rock Ridge vicinity.
Obscure bumble bee *Bombus caliginosus*	none	Coastal areas from Santa Barbara County to Washington.	Low. No known occurrences reported by CNDDB from Planning Area.
Western bumble bee *Bombus occidentalis*	none	Found in a variety of habitats. Once common and widespread. Species has declined precipitously, perhaps from disease	High. CNDDB occurrences from San Rafael vicinity, and likely remains in a variety of habitats.
San Bruno elfin butterfly *Callophyrys mossil bayensis*	FE	Colonies are located on steep, north-facing slopes where larval host plant, *Sedum spathulifolium*, is present	Low. No known occurrences reported by CNDDB from Planning Area.
Monarch butterfly *Danaus plexippus*	none	Relatively common species in decline throughout its range. Overwintering colonies found in eucalyptus groves and conifer forests along coastal California. Overwintering colonies are of concern to CDFW	High. CNDDB occurrences from China Camp State Park vicinity.
Mission blue butterfly *Plebujus icarioides missionensis*	FE	Found in coastal chaparral, scrub and grassland habitat where larval host plant, *Lupinus* spp., are present	Low. No known occurrences reported by CNDDB from Planning Area.
Robust walker *Pomatiopsis binneyi*	none	Amphibious snail living in humid habitat along the Coast Range, on marshy ground and periodically flooded soil. Typically associated with perennial seeps and rivulets.	Low. No known occurrences reported by CNDDB from Planning Area.
Myrtle's silverspot butterfly *Speyeria zerene myrtleae*	FE	Found in coastal prairie, coastal scrub and sand dunes where larval host plant, *Viola adunca*, is present	Low. No known occurrences reported by CNDDB from Planning Area.
San Francisco Bay Area leaf-cutter bee *Trachusa gummifera*	none	A pollen-collecting bee known from grassland habitat and areas with suitable nectaring plants	Low. No known occurrences reported by CNDDB from Planning Area.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Mimic tryonia (California brackishwater snail) *Tryonia imitator*	none	Inhabits coastal lagoons, estuaries and salt marshes from Sonoma County to San Diego County, typically found in permanently submerged areas	High. CNDDB occurrence from shoreline north of San Rafael Creek in Planning Area.
Marin Hesperian *Vespericola marinensis*	none	Found in moist areas in coastal brushfields and chaparral, in riparian and mixed forest habitats	Low. No known occurrences reported by CNDDB from Planning Area.
Birds			
Redhead *Aythya americana*	SSC	Large, deep bodies of water; nests in freshwater emergent wetlands	Moderate. May winter in small numbers on open water habitats along major drainages and San Pablo Bay.
American white pelican *Pelecanus erythrorhynchos*	SSC	Forages over shallow inland waters and coastal marine habitats, nests on isolated islands or peninsulas	Moderate. May forage and roost in the open water habitat in San Pablo Bay from late summer through spring but does not breed in San Francisco Bay Area.
California brown pelican *Pelecanus occidentalis californicus*	FE, SE, CFP	Coastal shorelines and bays; rarely found on fresh water	Moderate. May forage and roost in the open water habitat in San Pablo Bay from late summer through spring but does not breed in San Francisco Bay Area.
California least tern (nesting colony) *Sterna antillarum browni*	FE, CE, CFP	Found along the Pacific coast, foraging in shallow estuaries and lagoons, and nesting on open beaches	Low. Not reported from eastern Marin County by CNDDB.
Western snowy plover *Charadrius alexandrines nivosus*	FT, SSC	Found along the Pacific coast and nests in barren to sparsely vegetated beaches and other shoreline areas	Low. No known occurrences reported by CNDDB from Planning Area.
Great egret (nesting colony) *Ardea alba*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Great blue heron (nesting colony) *Ardea herodias*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Snowy egret (nesting colony) *Egretta thula*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Black-crowned night heron (nesting colony) *Nycticorax nycticorax*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Marbled murrelet *Brachyramphus marmoratus*	FT, CE	Forages at sea and utilizes mature conifer forest for nesting	Low. Suitable nesting and foraging habitat is absent from Planning Area.
White-tailed kite *Elanus leucurus*	CFP	Open grasslands, meadows, or marshes; require dense-topped trees or shrubs for nesting and perching	High. Observed in Marin County where suitable habitat is present.
Bald eagle *Haliaeetus leucocephalus*	SE	Ocean shorelines, lake margins, and rivers for both nesting and wintering; nests in large trees with open branches	High. Known to occasionally forage along lower reaches of major drainages and shoreline of San Pablo Bay during winter, but not likely to remain for long periods or breed in Planning Area.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Northern harrier *Circus cyaneus*	SSC	Nests in wet meadows and marshes, forages over open grasslands and agricultural fields	High. Observed in Marin County where suitable habitat is present.
Golden eagle *Aquila chrysaetos*	SSC, CFP	Rolling foothills and mountain areas. Nests in cliff-walled canyons or large trees in open areas	High. Known to forage and nest in Planning Area.
American peregrine falcon *Falco peregrinus*	SE, CFP	A variety of open habitats including coastlines, mountains, marshes, bay shorelines, and urban areas. Nest on cliffs, bridges, and tall buildings	Low. May occasionally forage in Planning Area, but not likely to breed due to the lack of suitable nesting habitat.
California black rail *Laterallus jamaicensis coturniculus*	FT, CFP	Salt marshes bordering larger bays, also found in brackish and freshwater marshes	High. Reported by CNDDB from John F. McInnis Park in Planning Area.
Ridgway's rail/California clapper rail *Rallus longirostris obsoletus*	FE, SE, CFP	Tidal salt marshes with sloughs and substantial cordgrass (*Spartina* sp.) cover	High. Reported by CNDDB from shoreline of San Rafael and John F. McInnis Park in Planning Area.
Burrowing owl *Athene cunicularia*	SSC	Open, dry grasslands that contain abundant ground squirrel burrows	Moderate. Observed in Marin County where suitable habitat is present.
Short-eared owl *Asio flammeus*	SSC	Found in open country and grasslands.	Moderate. Observed in Marin County where suitable habitat is present.
Long-eared owl *Asio otus*	SSC	Conifer, oak, riparian, pinyon-juniper, and desert woodlands adjacent to grasslands, meadows, or shrublands	Moderate. Observed in Marin County where suitable habitat is present.
Northern spotted owl *Strix occidentalis caurina*	FT, SC, SSC	Dense forest and woodland, with suitable prey	High. CNDDB occurrences from China Camp State Park, Harry A Barber Memorial Park and Southern Heights Ridge in Planning Area.
Olive-sided flycatcher *Contopus cooperi*	SSC	Coniferous forests with open canopies	Moderate. Observed in Marin County where suitable habitat is present.
Loggerhead shrike *Lanius ludovicianus*	SSC	Open grasslands and woodlands with scattered shrubs, fence posts, utility lines, or other perches; nests in dense shrubs and lower branches of trees	Moderate. Observed in Marin County where suitable habitat is present.
Purple martin *Progne subis*	SSC	Woodlands; nests in tree snags and abandoned woodpecker cavities and human-made structures	Moderate. Observed in Marin County where suitable habitat is present.
Double-crested cormorant (nesting colony) *Phalacrocorax auritus*	none	Relatively common species, found foraging in a variety of aquatic habitats including open water and shorelines of San Pablo Bay. Colonial roosting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
San Francisco (salt marsh) common yellowthroat *Geothlypis trichas sinuosa*	SSC	Salt, brackish, and freshwater marshes; and riparian woodlands; nests on or near ground in low vegetation	Moderate. Observed in Marin County where suitable habitat is present.
Bryant's savannah sparrow *Passerculus sandwichensis alaudinus*	SSC	Tidal marshes and adjacent ruderal habitat, moist grasslands in the coastal fog belt, and infrequently, drier grasslands further inland; in South Bay, nests primarily on levee tops overgrown with annual grasses and levee banks dominated by pickleweed	Moderate. Observed in in Marin County where suitable habitat is present.
Grasshopper sparrow *Ammodramus savannarum*	SSC	Grasslands with scattered shrubs.	Moderate. Observed in Marin County where suitable habitat is present.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
San Pablo (Samuels) song sparrow *Melospiza melodia samuelis*	SSC	Tidal salt marshes dominated by pickleweed; nests primarily in pickleweed and marsh gumplant	High. CNDDB occurrences from shoreline of San Rafael, China Camp State Park, and John F. McInnis Park in Planning Area.
Tricolored blackbird *Agelaius tricolor*	SSC	Nests in dense vegetation near open water; forages in grasslands and agricultural fields.	Low. No known occurrences reported by CNDDB from Planning Area.
Mammals			
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed for cover	High. CNDDB occurrences from shoreline of San Rafael and John F. McInnis Park in Planning Area.
Pallid bat *Antrozous pallidus*	SSC	A variety of open arid habitats (e.g., chaparral, open woodland, deserts); primary roost sites include bridges, old buildings, and in tree hollows and/or bark; sometimes roost in caves and rock crevices	High. Suitable habitat present and general occurrence reported by CNDDB from San Rafael in Planning Area.
Townsend's big-eared bat *Corynorhinus townsendii*	SC, SSC	Roots in the open in a variety of habitats, including tree cavities, caves and old buildings. Extremely sensitive to human disturbance.	Low. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.
Western red bat *Lasiurus blossevillii*	SSC	Forested canyons and riparian woodlands for roosting, a variety of open habitats for foraging; typically roosts in snags and trees with moderately dense canopies	Low. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.
Hoary bat *Lasiurus cinereus*	none	Prefers open habitats with access to trees for cover, roosting in dense foliage.	Low. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.
American badger *Taxidea taxus*	SSC	Open habitats with friable soils	Moderate. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.

[a] Status:
FE = federally endangered
FT = federally threatened
FC = federal candidate
ST = State endangered
SC = State candidate
SSC = California Species of Special Concern
CFP = California Fully Protected Species

[b] ESU = Evolutionarily Significant Unit
DPS = Distinct Population Segment

Source: Based on CNDDB occurrence records and common distribution knowledge unless otherwise noted.

APPENDIX F:
CULTURAL RESOURCES DATA

REGULATORY FRAMEWORK

Federal Regulations

National Historic Preservation Act

Most regulations at the federal level stem from the National Environmental Policy Act (NEPA) and historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966, as amended. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency, and have the potential to affect cultural resources. All projects that are subject to NEPA are also subject to compliance with Section 106 of the NHPA and NEPA requirements concerning cultural resources. Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. This law does not include provisions for compliance.

Native American Graves and Repatriation Act

Native American remains are protected by the Native American Graves and Repatriation Act of 1990 (NAGPRA). NAGPRA protects Native American graves on federal and tribal lands, and recognizes tribal authority over the treatment of unmarked graves. It also prohibits the selling of Native American remains. The law provides guidelines for the return of Native American human remains and cultural objects from any collection (museum, university, government) that receives federal funding. Civil and criminal penalties can be imposed for noncompliance and illegal trafficking (such as knowingly selling or purchasing sacred objects stolen from graves).

State Regulations

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is codified as Public Resources Code (PRC) Section 21000 *et seq.*, and CEQA Guidelines are codified at Title 14 California Code of Regulations (CCR) Section 15000 *et seq*. As amended in September 2014, CEQA requires that lead agencies determine whether projects may have significant effects on archaeological, historical, and tribal cultural resources. This determination applies to those resources which meet significance criteria qualifying them as "unique," "important," listed on the California Register of Historical Resources (CRHR), or eligible for listing on the CRHR. The importance of a resource is measured in terms of criteria for inclusion on the CRHR (Title 14 CCR, §4852(a)) as listed below.

If the agency determines that a project may have a significant effect on a resource considered to be significant, the project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

CEQA Guidelines (PRC §15064.5) specify the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

CEQA also affords protection to paleontological resources. Appendix G of the CEQA Guidelines requires consideration of impacts to paleontological resources, stating that, "a project will normally result in a significant impact on the environment if it will...disrupt or adversely affect a paleontological resource or site or unique geologic feature except as part of a scientific study."

California Register of Historical Resources

California State law provides for the protection of cultural resources by requiring evaluations of the significance of archaeological, historic, and Tribal cultural resources identified in documents prepared pursuant to the CEQA. Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office (SHPO) maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on The National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed. The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

A resource may be important if it meets any one of the criteria below, or if it is already listed on the CRHR or a local register of historical resources.
An important archaeological, historical, or tribal cultural resource is one which:

- Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- Is associated with the lives of persons important to local, California, or national history.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
- It has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retain sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

2013 California Historical Building Code, California Code of Regulations, Title 24, Part 8

The California Historical Building Code is defined in Sections 18950 to 18961 of Division 13, Part 2.7 of the Health and Safety Code, and is subject to rules and regulations set forth in 24 CCR Part 8. This code provides alternative building regulations for permitting repairs, alterations and additions necessary for the preservation, rehabilitation, relocation, related construction, change of use, or continued use of a building or structure considered a qualified historical building or structure at any level of government.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission.

Senate Bill 18

Senate Bill 18 (SB 18) (Burton, Chapter 905, Statutes 2004), authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §653524, and §65562.5 of the Government Code; also requires the Governor's Office of Planning and Research to include in the General Plan Guidelines advice to local governments for how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 *et seq*.) and specific plans (defined in Government Code §65450 *et seq*.).

Assembly Bill 52

The Native American Historic Resource Protection Act (Assembly Bill [AB] 52) requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with a project's geographic area if they have requested to be notified. AB 52 is intended to reduce the potential for delay and conflicts between Native American and developers. The goal of AB 52 is to include California Tribes in determining whether a project may result in a significant impact to tribal cultural resources (TCRs) that may be undocumented or known only to the Tribe and its members. AB 52 stipulates that a project that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Under AB 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, and object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register or included in a local register of historical resources. Alternatively, the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as TCR. When a lead agency chooses to treat a resource as a TCR, that determination shall be supported with substantial evidence, applying the criteria in the historical register, and considering the significance of the resource to a California Tribe (PRC § 5024.1, PRC§ 21074).

Consultation includes, but is not limited to, discussing the type of environmental review necessary, the significance of TCRs, the significance of the project impacts on the TCRs, and alternatives and mitigation measures recommended by the tribe. Consultation is considered concluded when (1) the parties agree to measures to avoid or reduce a significant impact on a TCR, if such a significant impact exists, or (2) when a party concludes that mutual agreement cannot be reached (PRC § 21080.3.2 (b)(l) and (2). Mitigation measures agreed upon during consultation must be included in the environmental document and, if no formal agreement on the appropriate mitigation has been established, mitigation measures that avoid or substantially lessen potential significant impacts should be implemented.

Public Resources Code

Section 5097.5(a) of the Public Resources Code specifies that a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

California Code of Regulations

The California Code of Regulations (Title 14, Division 3, Chapter 1) addresses paleontological and archaeological resources on lands administered by the California Department of Parks and Recreation.

1. Section 4307: Geological Features - No person shall destroy, disturb, mutilate, or remove earth, sand, gravel, oil, minerals, rocks, paleontological features, or features of caves.
2. Section 4308: Archaeological Features - No person shall remove, injure, disfigure, deface, or destroy any object of archaeological or historical interest or value.

Local Regulations

City of San Rafael regulations regarding cultural resources are codified in Chapters 2.18 and 2.19 of the Municipal Code.

Chapter 2.18 - Historic Preservation

2.18.010 - Purpose. The city council of San Rafael finds that structures, sites and areas of special character or special historical, architectural or aesthetic interest or value have been and continue to be unnecessarily destroyed or impaired, despite the feasibility of preserving them. It is further found that the prevention of such needless destruction and impairment is essential to the health, safety, economy and general welfare of the public. The purpose of this chapter is to promote the health, safety, economy and general welfare of the public through:

a. The protection, enhancement, perpetuation and use of structures, sites and areas that are reminders of past eras, events and persons important in local, state or national history, or which provide significant examples of architectural styles of the past or are landmarks in the history of architecture, or which are unique and irreplaceable assets to the city and its neighborhoods, or which provide for this and future generations examples of the physical surroundings in which past generations lived;
b. The development and maintenance of appropriate settings and environment for such structures, and in such sites and areas;
c. The stabilization and enhancement of property values, the stabilization of neighborhoods and areas of the city, the increase of economic and financial benefits to the city and its inhabitants, and the promotion of visitor trade and interest in the city of San Rafael;
d. The preservation and encouragement of a city of varied architectural styles, reflecting the distinct phases of its history: cultural, social, economic, political and architectural;
e. The enrichment of human life in its educational and cultural dimensions in order to serve spiritual as well as material needs, by fostering knowledge of and civic pride in the living heritage of the past; and

f. Tax reductions to owners of designated historic buildings and sites through appropriate state and federal laws.

Chapter 2.19 - Archeological Resources Protection

2.19.010 – Purpose. Certain lands and geographic areas within the city of San Rafael contain significant archeological resources, which include deposits and remains of the local Native Americans and other early inhabitants. These deposits and remains represent an important part of the early history of San Rafael and the culture of the Native American community. Without proper regulations and monitoring, continued excavation and grading activities within the city council significantly impact these resources.

In recognizing the importance of protecting significant archeological resources, the city of San Rafael has determined to:

a. Establish a procedure for identifying, when possible, archeological resources and potential impacts to such resources prior to authorizing excavation and grading activities;
b. Provide valuable information and direction to property owners in the community in order to make them aware of these resources;
c. Implement measures that would preserve and protect valuable archeological resources, when there is a potential for encountering such resources;
d. Establish a procedure which would ensure that appropriate advisory agencies and organizations are contacted and consulted, when there is a probability that archeological resources could be encountered during an activity involving grading, excavation, and/or construction;
E. Establish and implement specific protection and preservation measure in the event archeological resources are encountered during grading, excavation and/or construction.

CULTURAL RESOURCES

This section contains information about cultural and paleontological resources within the San Rafael General Plan Area. Information contained in this section was obtained from the California Historical Resources Information System's Northwest Information Center in Rohnert Park and the files of the City of San Rafael.

Cultural resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects and districts, and each is described by OHP (1995) as follows.

- **Site.** A “site” is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.
- **Building.** A “building,” such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.
- **Structure.** The term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.

- **Object.** The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.
- **District.** A “district” possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

For San Rafael and its Sphere of Influence, the California Historic Resources Information System has 164 documented resources on file that are generally sorted as:

Sites	108
Buildings	38
Structures	15
Districts	2
Other	1

Prehistoric Resources

Efforts to document the City's cultural resources began more than a century ago with archaeological inventories conducted by Nels Nelson in the San Francisco Bay area. Between 1906 and 1908, Nelson found some 425 sites; 67 are within the General Plan Area. Mandated cultural resources surveys led to the identification of additional archaeological resources following passage of the NHPA of 1966 and the CEQA of 1970. While there has been no systematic survey for archaeological resources in the city to date, there are 86 documented prehistoric sites within the General Plan Area. Records for these sites are on file at the Northwest Information Center of the California Historic Resources Information System.

As part of environmental review conducted for development projects, approximately 20 percent of the land within the city limits and Sphere of Influence has been surveyed for cultural resources; there is the potential that additional, not-yet-identified archaeological resources are present.

Table 1. Known Archaeological Resources within the General Plan Area

Primary No.	Trinomial	Age
P-21-000001	CA-MRN-000611	Prehistoric
P-21-000109	CA-MRN-000080	Prehistoric
P-21-000110	CA-MRN-000081	Prehistoric
P-21-000111	CA-MRN-000082	Prehistoric
P-21-000112	CA-MRN-000083	Prehistoric
P-21-000113	CA-MRN-000084	Prehistoric
P-21-000114	CA-MRN-000085	Prehistoric
P-21-000115	CA-MRN-000086	Prehistoric
P-21-000116	CA-MRN-000087	Prehistoric
P-21-000117	CA-MRN-000088	Prehistoric
P-21-000118	CA-MRN-000089	Prehistoric
P-21-000119	CA-MRN-000090	Prehistoric
P-21-000120	CA-MRN-000091	Prehistoric

Table 1. Known Archaeological Resources within the General Plan Area		
Primary No.	**Trinomial**	**Age**
P-21-000121	CA-MRN-000092	Prehistoric
P-21-000122	CA-MRN-000093	Prehistoric
P-21-000123	CA-MRN-000095	Prehistoric
P-21-000124	CA-MRN-000096	Prehistoric
P-21-000125	CA-MRN-000097	Prehistoric
P-21-000126	CA-MRN-000098	Prehistoric
P-21-000127	CA-MRN-000099	Prehistoric
P-21-000128	CA-MRN-000100	Prehistoric
P-21-000130	CA-MRN-000102	Prehistoric
P-21-000131	CA-MRN-000103	Prehistoric
P-21-000133	CA-MRN-000105	Prehistoric
P-21-000134	CA-MRN-000106	Prehistoric
P-21-000135	CA-MRN-000107	Prehistoric
P-21-000137	CA-MRN-000109	Prehistoric
P-21-000138	CA-MRN-000110	Prehistoric
P-21-000139	CA-MRN-000111	Prehistoric
P-21-000140	CA-MRN-000112	Prehistoric
P-21-000141	CA-MRN-000113	Prehistoric
P-21-000142	CA-MRN-000114	Prehistoric
P-21-000143	CA-MRN-000115	Prehistoric
P-21-000144	CA-MRN-000116	Prehistoric
P-21-000145	CA-MRN-000117	Prehistoric
P-21-000146	CA-MRN-000119	Prehistoric
P-21-000147	CA-MRN-000120	Prehistoric
P-21-000148	CA-MRN-000121	Prehistoric
P-21-000149	CA-MRN-000122	Prehistoric
P-21-000150	CA-MRN-000123	Prehistoric
P-21-000151	CA-MRN-000124	Prehistoric
P-21-000153	CA-MRN-000128	Prehistoric
P-21-000154	CA-MRN-000129	Prehistoric
P-21-000155	CA-MRN-000130	Prehistoric
P-21-000156	CA-MRN-000131	Prehistoric
P-21-000163	CA-MRN-000138	Prehistoric
P-21-000164	CA-MRN-000139	Prehistoric
P-21-000165	CA-MRN-000140	Prehistoric
P-21-000166	CA-MRN-000141	Prehistoric
P-21-000167	CA-MRN-000142	Prehistoric
P-21-000168	CA-MRN-000143	Prehistoric
P-21-000169	CA-MRN-000144	Prehistoric
P-21-000170	CA-MRN-000145	Prehistoric
P-21-000171	CA-MRN-000146	Prehistoric

Table 1. Known Archaeological Resources within the General Plan Area		
Primary No.	**Trinomial**	**Age**
P-21-000172	CA-MRN-000147	Prehistoric
P-21-000256	CA-MRN-000254	Prehistoric
P-21-000268	CA-MRN-000282	Prehistoric
P-21-000295	CA-MRN-000315	Prehistoric
P-21-000296	CA-MRN-000317	Prehistoric
P-21-000297	CA-MRN-000318	Prehistoric
P-21-000306	CA-MRN-000328	Prehistoric
P-21-000321	CA-MRN-000346	Prehistoric
P-21-000322	CA-MRN-000347	Prehistoric
P-21-000323	CA-MRN-000348	Prehistoric
P-21-000324	CA-MRN-000349	Prehistoric
P-21-000325	CA-MRN-000350	Prehistoric
P-21-000326	CA-MRN-000351	Prehistoric
P-21-000435	CA-MRN-000484	Prehistoric
P-21-000442	CA-MRN-000492	Prehistoric
P-21-000443	CA-MRN-000493	Prehistoric
P-21-000444	CA-MRN-000494	Prehistoric
P-21-000465	CA-MRN-000532	Prehistoric
P-21-000466	CA-MRN-000533	Prehistoric
P-21-000468	CA-MRN-000536	Prehistoric
P-21-000529	CA-MRN-000603	Prehistoric
P-21-000536	CA-MRN-000079	Prehistoric
P-21-000537	CA-MRN-000094	Prehistoric
P-21-000539	CA-MRN-000125	Prehistoric
P-21-000540	CA-MRN-000126	Prehistoric
P-21-000548	CA-MRN-000469	Prehistoric
P-21-000645	CA-MRN-000313	Prehistoric
P-21-000646	CA-MRN-000314	Prehistoric
P-21-000647	CA-MRN-000316	Prehistoric
P-21-000680	CA-MRN-000647	Prehistoric
P-21-002667	CA-MRN-000687	Prehistoric
P-21-002865	CA-MRN-000719	Prehistoric
P-21-000132	CA-MRN-000104/H	Prehistoric, Historic
P-21-000136	CA-MRN-000108/H	Prehistoric, Historic
P-21-000441	CA-MRN-000491/H	Prehistoric, Historic
P-21-000467	CA-MRN-000534/H	Prehistoric, Historic
P-21-000538	CA-MRN-000118/H	Prehistoric, Historic
P-21-000615	CA-MRN-000634/H	Prehistoric, Historic
P-21-000675	CA-MRN-000644/H	Prehistoric, Historic
P-21-000681		Prehistoric, Historic
P-21-002645		Prehistoric, Historic

Table 1. Known Archaeological Resources within the General Plan Area		
Primary No.	**Trinomial**	**Age**
P-21-002833	CA-MRN-000711/H	Prehistoric, Historic
P-21-000152	CA-MRN-000127	Prehistoric, Protohistoric
P-21-000594	CA-MRN-000626/H	Prehistoric, Protohistoric, Historic

Historic Resources

The City's historic-period resources include archaeological deposits associated with Euroamerican settlement and exploration, and historic buildings and structures. These resources have also been addressed primarily through mandated cultural resources surveys. There are 12 known historical archaeological sites within the General Plan Area, and an additional ten that have both prehistoric and historical components (Table 1).

The City last conducted an architectural and historical survey of San Rafael structures in 1986. The 1986 architectural/historical survey completed for San Rafael included nearly 320 properties, primarily built environment resources. The master list prepared for the City as part of the General Plan 2040 and Downtown Precise Plan EIR (Appendix A), includes resources that have been evaluated for inclusion on the NRHP and the CRHR, and properties that are listed as California Historic Landmarks or Points of Historical Interest. Additionally, the list includes resources that were deemed potentially important but have not been fully evaluated to determine their eligibility or were found ineligible. The inventory shows the State Resources Code assigned to each property, which are defined later in Appendix A.

Of the nearly 320 historic resources tabulated in the 1986 survey, the City of San Rafael recognizes 16 City landmarks and three historic districts (Table 2), four are California Historical Landmarks (Table 3), and ten resources within the General Plan Area are listed on the National Register (Table 4).

TABLE 2. CITY OF SAN RAFAEL LANDMARKS AND HISTORIC DISTRICTS		
Name	**Location**	**Listed**
The Mulberry House	1149 Fourth Street	1984
The Chisholm Residence	1505 Fifth Avenue	1979
	1800 Fifth Avenue	1980
The Flatiron Building	724 B Street	1982
The Boyd House and Memorial Park	1125 B Street	1974
Holtwood	510 Belle	1981
The McNear Brick Barn	525-569 Biscayne Drive	1982
The Schlosser/Cole Residence	1023 E Street	1979
The Bradford House	333 G Street	1980
The Robert Dollar House	115 J Street	1984
The McNear Residence	121 Knight Drive	1981
Dr. Hawkins' Residence	418 Mission Avenue	1978

TABLE 2. CITY OF SAN RAFAEL LANDMARKS AND HISTORIC DISTRICTS		
Name	**Location**	**Listed**
The Robert Dollar Estate/Falkirk Mansion	1408 Mission Avenue	1976
The Isaac Jessup House	10 Sentinel Court/241 West End Avenue	1978
The Jessup/Dunand House	14 Sentinel Court	1979
The Litchfield Sign	737 E. Francisco Blvd	1998
Historic Districts		
The Victorian Village Historic District	1623-1627 5th Avenue	1979
The French Quarter Historic District	901-911 Irwin	1978
Grand Avenue Historic District	1811-1817 Grand Avenue	1979
Source: City of San Rafael Planning Division, 2017		

TABLE 3.CALIFORNIA HISTORICAL LANDMARKS WITHIN THE SAN RAFAEL GENERAL PLAN AREA

Name	Location	Listed
Marin County Civic Center	3501 Civic Center Drive	5/8/1991
Mission San Rafael Arcángel	1104 Fifth Avenue	6/20/1935
St. Vincent's School for Boys	1 St. Vincents Drive	1/29/1958
China Camp	100 China Camp Village Road	12/7/1978
Source: Office of Historic Preservation California Historical Resources, 2019		

TABLE 4. NATIONAL REGISTER PROPERTIES WITHIN THE SAN RAFAEL GENERAL PLAN AREA

Name	Location	Listed
Boyd House	1125 B Street	12/17/1974
Bradford House	333 G Street	6/6/1980
China Camp	247 N. San Pedro Drive	4/26/1979
Dixie Schoolhouse	2255 Las Gallinas Avenue	12/26/1972
Robert Dollar Estate	1408 Mission Avenue	12/11/1972
Robert Dollar House	115 J Street	7/23/1991
Marin County Civic Center	N. San Pedro Road and Civic Center Drive	5/8/1991
Erskine B. McNear House	121 Knight Drive	1/11/1982
Miller Creek School Indian Mound	Restricted	10/14/1971
San Rafael Improvement Club	1800 5th Avenue	3/29/1984
Source: National Park Service National Register of Historic Places Program, 2019		

CULTURAL SETTING

Prehistoric Setting

The concept of prehistory refers to the period before events were recorded in writing, a period which varies worldwide. Because there is no written record, our understanding of California prehistory relies on archaeological materials and oral histories passed down through generations. Early archaeological research in this area began with the work of Max Uhle and Nels Nelson. Uhle is credited with the first scientific excavation in California with his work at the Emeryville Shellmound in 1902, while Nelson spent several years (1906 to 1908) surveying the San Francisco Bay margins and California coast for archaeological sites.

In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifacts from sites in the lower Sacramento Valley (Lillard, Heizer, and Fenenga 1939; Heizer and Fenega 1939). Their cultural sequence became known as the Central California Taxonomic System (CCTS), which identified three culture periods termed the Early, Middle, and Late Horizons, none of which offered date ranges. Refinement of the CCTS became a chief concern of archaeologists as the century progressed with publications by Richard Beardsley (1948, 1954) and Clement Meighan (1955) based on materials excavated by the University of California Archaeological Survey.

In 1973, David Fredrickson synthesized prior work, and in combination with his own research, he developed a regional chronology that is used to this day, albeit modified for locality-specific circumstances. Note that while Fredrickson's chronology was adopted by many archaeologists, Beardsley's cultural sequence was adopted by others, creating a roughly North Bay-South Bay division in usage. Fredrickson’s scheme, outlined below, shows that native peoples have occupied the region for over 11,000 years (which is supported by Erlandson *et al.* 2007), and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973).

Emergent Period (ca. 200 – 1,000 years ago)

Upper Emergent Period characteristics include the appearance of the clam shell disk bead money economy. Increasingly more goods were moved farther. Local specialization of production and exchange of goods grew. South and central exchange systems were interpenetrated.

Lower Emergent Period characteristics included the introduction of the bow and arrow, which largely replaced the dart and atlatl. South coast marine adaptations flourished. Territorial boundaries became well established, and regularized exchange between groups continued with increased goods being exchanged. Increasing evidence has been found of distinctions in social status linked to wealth.

Archaic Period (ca. 1,000 – 8,000 years ago)

Upper Archaic Period characteristics include the growth of social-political complexity with status distinctions based on wealth. Shell beads gain importance and they appear to serve as indicators of both exchange and wealth. Group-oriented religious organizations emerge with possible origin of the Kuksu religious system. Exchange systems become more complex with regularized and sustained exchanges occurring between groups. Territorial boundaries were fluid.

Middle Archaic Period characteristics include a change in the climate, which became more benign. Economy became more diverse. Acorn use introduced as suggested by mortars and

pestles. Hunting was important as evidence by the abundance of dart tips. Sedentism began along with increased population and expansion.

Lower Archaic Period characteristics include lakes drying due to climatic changes. Abundant milling stones suggest emphasis on plants/small seeds for food, and little hunting occurred. Limited exchange took place, and there was a reliance on the use of local materials. Wealth not emphasized, and the dominant social unit appears to be the extended family.

Paleoindian Period (ca. 8,000 – 12,000+ years ago)

The Paleoindian period is the time when humans first entered California. Lakeside sites established with probable emphasis on hunting. Milling technology is lacking. Exchange of goods on a one to one basis and not regularized. Social units consisted of extended families that was largely self-reliant, and moved to resources as they became available and were needed.

Ethnographic Setting

At the time of European settlement in the Bay Area, San Rafael was part of the Coast Miwok territory (Kelly 1978:414). The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Barrett 1908; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

It is believed that members of the Coast Miwok were the Native Americans who met with both Sir Francis Drake and Sebastian Rodriquez Cermeño during their voyages to California. After those two contacts, the Coast Miwok were left alone for nearly 200 years until the construction of the San Francisco Presidio and Mission Dolores in 1776 (Kelly 1978:414). Even then, Coast Miwok did not enter Mission Dolores in significant numbers until 1800 (Milliken 1995:176).

Historic Setting

Euroamerican settlement in what would become the City of San Rafael began with the founding of an *asistencia*, or outpost of the Mission San Francisco de Assis in 1817. The *asistencia* served as a hospital for Native Americans who had been Christianized, and as a ranch in support of the San Francisco mission. In 1822, the *asistencia* became the Mission San Rafael Arcangel. The mission at San Rafael was the 20th of 21 missions established in California between 1769 and 1823. The chain of missions reached from San Diego to present-day Sonoma, and all but the last was founded under Spanish rule. The Mission San Francisco de Solano in Sonoma was erected in 1823, two years after Mexico gained independence from Spain.

Under Mexican rule, land grants were made more frequently and resulted in the unique pattern of land ownership in California. In 1834, Mexico ended the mission system in California freeing additional lands for distribution. Mission San Rafael Arcangel was the first of the secularized missions. San Rafael lies within the Mexican land grant of Rancho San Pedro, Santa Margarita y Las Gallinas made to Timothy Murphy in 1844; the General Plan Area includes a small portion of Rancho Punta de Quentin, an 1840 grant to John B.R. Cooper.

NATIVE AMERICAN CONSULTATION

In keeping with Senate Bill 18 and Assembly Bill 52, requests were made to the Native American Heritage Commission for a search of the Sacred Lands File and a Tribal Consultation List. Letters were then sent to Greg Sarris and Gene Buvelot, the listed representatives for the Federated Indians of Graton Rancheria. Documents pertaining to Senate Bill 18 and Assembly Bill 52 are attached.

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REFERENCES

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1907 The Emeryville Shellmound. *University of California Publications in American Archaeology and Ethnology* Vol. 7:1-106.

ATTACHMENTS:

NATIVE AMERICAN CONSULTATION

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: City of San Rafael General Plan 2040 and Downtown Precise Plan EIR

County: Marin

USGS Quadrangle

Name: Novato
San Rafael
San Quentin
Petaluma Point

Township: 1 N Range 5 & 6 W Section(s) Not Sectioned MDBM
Township 2 N Range 6 & 7 W
Land Grants: Mission San Rafael
San Pedro, Santa Margarita y Las Gallinas
Punta de Quentin
Canada de Herrera

Date: 3/4/19

Company/Firm/Agency: Tom Origer & Associates

Contact Person: Vicki Beard

Address: P.O. Box 1531

City: Rohnert Park Zip: 94927

Phone: (707) 584-8200 Fax: (707) 584-8300

Email: vbeard@origer.com

Project Description: Assisting the City of San Rafael with their General Plan Update for 2040 and preparation of a Precise Plan for the downtown area.

Native American Heritage Commission
Native American Contacts List
3/11/2019

Federated Indians of Graton Rancheria
Gene Buvelot
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park ,CA 94928 Southern Pomo
gbuvelot@gratonrancheria.com
(415) 279-4844 Cell
(707) 566-2288 ext 103

Federated Indians of Graton Rancheria
Greg Sarris, Chairperson
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park ,CA 94928 Southern Pomo
gbuvelot@gratonrancheria.com
(707) 566-2288 Office
(707) 566-2291 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
City of San Rafael General Plan 2040 and Downtown Precise Plan EIR Project.

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

March 11, 2019

Vicki Beard
Tom Origer & Associates

VIA Email to: vbeard@origer.com

RE: Native American Consultation, Pursuant to Senate Bill 18, Government Code §65352.3 and §65352.4, City of San Rafael General Plan 2040 and Downtown Precise Plan EIR Project, Marin County

Dear Ms. Beard:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties.

Government Code §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

The law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

The NAHC also believes that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources that have already been recorded or are adjacent to the APE, such as known archaeological sites;

   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;

   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and

   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code §6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the NAHC was positive. Please contact the Federated Indians of Graton Rancheria on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we are able to assure that our consultation list remains current.

If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,



Steven Quinn
Associate Governmental Program Analyst

Attachment

Tom Origer & Associates
Archaeology / Historical Research

April 19, 2019

Gene Buvelot
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Dear Mr. Buvelot:

Our firm is assisting the City of San Rafael in preparing an Environmental Impact Report (EIR) for the San Rafael General Plan 2040 and Downtown Precise Plan. The EIR will address potential environmental impacts at a programmatic level. A check of the Sacred Lands File by the Native American Heritage Commission was "positive," and they advised contacting you. We understand that the City has initiated SB 18 consultation, and this letter is simply to advise you of our participation in the EIR preparation. A generalized map of the General Plan Area is enclosed.

Please contact me if you have any questions or need additional information.

Sincerely,

Vicki Beard
Senior Associate

Tom Origer & Associates
Archaeology / Historical Research

April 19, 2019

Greg Sarris
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Dear Mr. Sarris:

Our firm is assisting the City of San Rafael in preparing an Environmental Impact Report (EIR) for the San Rafael General Plan 2040 and Downtown Precise Plan. The EIR will address potential environmental impacts at a programmatic level. A check of the Sacred Lands File by the Native American Heritage Commission was "positive," and they advised contacting you. We understand that the City has initiated SB 18 consultation, and this letter is simply to advise you of our participation in the EIR preparation. A generalized map of the General Plan Area is enclosed.

Please contact me if you have any questions or need additional information.

Sincerely,

Vicki Beard
Senior Associate

From: THPO@gratonrancheria.com <THPO@gratonrancheria.com>
Sent: Wednesday, April 10, 2019 12:18 PM
To: Barry Miller
Subject: City of San Rafael, General Plan 2040

Dear Barry Miller,

Thank you for notifying the Federated Indians of Graton Rancheria about City of San Rafael, General Plan 2040, a project within the Tribe's Ancestral Territory. We appreciate being notified and will review your project within 10 business days. If you have an immediate request please contact the Tribal Heritage Preservation Office for assistance by phone at (707) 566-2288 or by email at thpo@gratonrancheria.com.

Sincerely,
Buffy McQuillen
Tribal Heritage Preservation Officer (THPO)
Native American Graves Protection and Repatriation Act (NAGPRA)
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291

Antonette Tomic
THPO Administrative Assistant
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 143
Fax: 707.566.2291
atomic@gratonrancheria.com

please consider our environment before printing this email.

Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential
CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office at 707-566-2288, and immediately delete this message and all its attachments, if any. Thank you.

Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☐ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

■ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

☑ **General Plan** ___ **General Plan Element** ___ **General Plan Amendment**

___ **Specific Plan** ___ **Specific Plan Amendment** ___ **Pre-planning Outreach Activity**

Required Information

Project Title: San Rafael General Plan Update (GP 2040)

Local Government/Lead Agency: City of San Rafael

Contact Person: Barry Miller, Consulting Project Manager

Street Address: 1400 Fifth Avenue

City: San Rafael, CA **Zip:** 94901

Phone: 415-485-3423 **Fax:** 415-485-3184

Email: Barry.Miller@cityofsanrafael.org

Specific Area Subject to Proposed Action

County: Marin **City/Community:** San Rafael

Project Description:

The City of San Rafael is moving the time horizon of its 2020 General Plan out to 2040, and is providing updated maps, policies, and programs in response to new issues, State requirements, and community input. Baseline data and projections will be adjusted accordingly. The revised Plan will be prepared over the next two years, and will be adopted in early 2020.

Additional Request

■ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): San Rafael, San Quentin, Novato, Petaluma Point

Lat 37.9761, Long 122.5319

Township: NA **Range:** NA **Section(s):** NA

Native American Heritage Commission
Native American Contacts
4/26/2018

Federated Indians of Graton Rancheria
Gene Buvelot
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park , CA 94928 Southern Pomo
gbuvelot@gratonrancheria.com
(415) 279-4844 Cell
(707) 566-2288 ext 103

Federated Indians of Graton Rancheria
Greg Sarris, Chairperson
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park , CA 94928 Southern Pomo
(707) 566-2288 Office
(707) 566-2291 Fax

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Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
San Rafael General Plan Update 2040, Marin County.

November 15, 2018

Greg Sarris, Chairperson
Federated Indians of Graton Rancheria
6400 Redwood Drive
Suite 300
Rohnert Park, CA 94928

SUBJECT: Project notification pursuant to Assembly Bill (AB) 52 and Senate Bill (SB) 18 for the San Rafael General Plan 2040 and Downtown Precise Plan

Dear Mr. Sarris:

Your name and address were provided to us by the Native American Heritage Commission as an affiliated California Native American tribal representative. We are sending this letter to advise you that the City of San Rafael has initiated an update of its General Plan, as well as a Precise Plan for Downtown San Rafael. A single Program Environmental Impact Report (EIR) will be prepared for both projects. The letter serves as the initial consultation on the project.

Pursuant to AB 52, the City of San Rafael is requesting that you provide any information you may have regarding tribal cultural resources (as defined by Public Resources Code 21074) within the San Rafael Planning Area so that this information can be reflected as we undertake both the General Plan Update and the Downtown Precise Plan. A map of the Planning Area is attached to this letter. The City, as the lead agency, is requesting this input within 30 days of the date of this letter—or by December 15, 2018.

In addition, pursuant to SB 18, please notify us of any issues of concern that you would like to see addressed in either the General Plan or Precise Plan within 90 days (February 13, 2019).

We are providing this letter both by email and via the US Postal Service. The letter provides an overview of both projects and includes links to a website where additional information is available.

San Rafael 2040 General Plan Update

The existing San Rafael General Plan was adopted in 2004 and had a horizon year of 2020. The proposed General Plan Update will move the horizon year forward to 2040. The General Plan Update will add new policies about sustainability, climate change, sea level rise, transit-oriented development, transportation technology, environmental justice, residential and commercial land uses, and other topics. The new Plan will also provide updated language for geographic areas within the City where future land use

Gary O. Phillips, **Mayor** • John Gamblin, **Vice Mayor** • Maribeth Bushey, **Councilmember** • Kate Colin, **Councilmember** • Andrew Cuyugan McCullough, **Councilmember**

changes are envisioned. The Plan's focus is on infill development on land that is already zoned for urban and suburban uses.

The General Plan Update was initiated in 2017 and is expected to take three years to complete. Major steps taken to date include creation of a 24-member Steering Committee, development of a project website, an "audit" of the existing Plan, development of guiding principles and a Plan outline, and preparation of a demographic profile of the city. The City also developed a detailed work program for the project, including a community engagement strategy. An interactive project website, including a platform for on-line engagement, has been created, and three community workshops took place in October 2018. Interviews with stakeholders and presentations to City commissions and other organizations are ongoing.

The City does not anticipate major changes in policy direction through the General Plan Update. The Plan's forecasts will generally follow ABAG projections, which anticipate a 12% increase in the number of households (roughly 2,800 households) and a 13% increase in the number of jobs (roughly 5,500 jobs) between 2010 and 2040. Much of this growth is expected to occur in Downtown San Rafael, where other travel modes are more readily available and densities are more conducive to walking and bicycling. Other opportunity sites include underutilized commercial and industrial properties located throughout the city.

Completion of the General Plan is projected for mid-2020. The City has set up a website to provide information about the project at www.sanrafael2040.org. This site includes a library of relevant documents, information on past and future meetings (including agenda packets and presentations), and draft documents. In addition, the City has established a platform for on-line engagement at www.cityofsanrafael.org/2040. This site allows residents to weigh in on planning issues such as sea level rise and mobility.

Downtown Precise Plan

In March 2018, the City of San Rafael applied for and received a $500,000 planning grant from the Metropolitan Transportation Commission to prepare a Downtown Precise Plan. The Plan will update the 1993 Downtown Vision Plan, which has been the guiding document for downtown planning for the last 25 years. The new Plan will incorporate recent planning efforts for Downtown, including a Station Area Plan (2012), a Parking and Wayfinding Study (2017), the Third Street Rehabilitation Project (underway), and the Transit Center Relocation Plan (underway).

The City is in the process of retaining a consulting firm to complete the Precise Plan and will initiate the project in January 2019. The scope of work includes a detailed profile of the area, which has been designated as a "Priority Development Area" (PDA) by ABAG/MTC, and a vision for its long-term future. The scope also includes new development standards, placemaking and design guidelines, a multi-modal transportation strategy, and an inventory of historic resources. The planning process includes consideration of land use and circulation alternatives, selection of a preferred plan, and development of the Precise Plan document itself. A robust community engagement program also is planned.

The area covered by the Downtown Precise Plan will include the areas covered by the 1993 Vision Plan, plus additional properties near the new Downtown San Rafael SMART station. The latter area includes offices and other commercial properties immediately east of US 101, and potentially a limited number of light industrial properties immediately south of Second Street near the station. It is anticipated that the Precise Plan will result in specific land use and zoning recommendations that facilitate new housing construction, transit-oriented development, and the restoration of historic properties. The Plan also may propose modifications to the street system, parking, and public realm that make Downtown safer and more accessible for pedestrians, bicycles, and transit users.

We Welcome Your Participation

The City welcomes the participation of Native American groups in the Plan update process. Early communication with the City on issues of concern is strongly encouraged so that the City's policies and programs can be appropriately drafted or edited.

We will provide additional correspondence to this address when the Draft General Plan, Draft Precise Plan, and Draft Environmental Impact Report are published in 2020. Your organization will be provided with at least 45 days to comment on both documents, as well as the accompanying Draft Environmental Impact Report. Public hearing dates will be included in future correspondence.

If you have questions or comments, please do not hesitate to contact me at 415-485-3423 or at the email address below.

Sincerely,

Barry Miller
General Plan Contract Project Manager
Barry.Miller@cityofsanrafael.org

Gary O. Phillips, **Mayor** • John Gamblin, **Vice Mayor** • Kate Colin, **Councilmember** • Maribeth Bushey, **Councilmember** • Andrew Cuyugan McCullough, **Councilmember**

FEDERATED INDIANS OF
GRATON
RANCHERIA

Submitted via electronic email: Barry Miller (Barry.Miller@cityofsanrafael.org)

November 16, 2018

RE: Formal Request for Tribal Consultation Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code section 21080.3.1, subds. (b), (d) and (e) for the San Rafael General Plan 2040 and Downtown Precise Plan.

Dear Agency Representative:

This letter constitutes a formal request for tribal consultation under the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21080.3.1 subdivisions (b), (d) and (e) for the mitigation of potential project impacts to tribal cultural resource for a project within the Federated Indians of Graton Rancheria's ancestral lands.

Receiving this letter sets forth the Tribe's formal request for consultation on the following topics checked below, which shall be included in consultation if requested (Public Resources Code section 21080.3.2, subd. (a):

___x__ Alternatives to the project
___x__ Recommended mitigation measures
___x__ Significant effects of the project

The Tribe also requests consultation on the following discretionary topics checked below (Public Resources Code section 21080.3.2, subd. (a):

___x__ Type of environmental review necessary
___x__ Significance of tribal cultural resources, including any regulations, policies or standards used by your agency to determine significance of tribal cultural resources
___x__ Significance of the project's impacts on tribal cultural resources
___x__ Project alternatives and/or appropriate measures for preservation or mitigation that we may recommend, including, but not limited to:

(1) Avoidance and preservation of the resources in place, pursuant to Public Resources Code section 21084.3, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria;
(2) Treating the resources with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resources, including but not limited to the following:

a. Protecting the cultural character and integrity of the resource;
b. Protection the traditional use of the resource; and
c. Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally Appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

Additionally, the Tribe would like to receive any cultural resources assessments or other assessments that have been completed on all or part of the project's potential "area of project effect" (APE), including, but not limited to:

1).The results of any record search(es) conducted at an archaeological information center of the California Historical Resources Information System (CHRIS), including, but not limited to:

(a) Any known cultural resources that have already been recorded on or adjacent to the potential APE;
(b) Whether the probability is low, moderate or high that cultural resources are located in the potential APE; and
(c) If a survey is required to determine whether previously unrecorded cultural resources are present in the potential APE.

2). The results of any archaeological inventory survey that was conducted of all or part of the potential APE, including, but not limited to:

(a) Any report that may contain site forms, site significance, and suggested mitigation measures.

3). The results of any Sacred Lands File searches conducted through the Native American Heritage Commission for all or part of the potential APE;

4). Any ethnographic studies conducted for any area including all or part of the potential APE; and

5) Any geotechnical reports regarding all or part of the potential APE.

We would like to remind your agency that CEQA Guidelines section 15126.4, subdivision (b)(3) states that preservation in place is the preferred manner of mitigating impacts to archaeological sites. Section 15126.4, subd. (b)(3) of the CEQA Guidelines has been interpreted by the California Court of Appeal to mean that "feasible preservation in place must be adopted to mitigate impacts to historical resources of an archaeological nature unless the lead agency determines that another form of mitigation is available and provides superior mitigation of impacts." *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48,

FEDERATED INDIANS OF
GRATON
RANCHERIA

disapproved on other grounds, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.

The Tribe would like to begin consultation within 30 days of your receipt of this letter. Please contact my office at (707) 566-2288 or by email at bmcquillen@gratonrancheria.com as the person who will serve as the lead contact on behalf of the Tribe.

Sincerely,

Buffy McQuillen, THPO/NAGPRA
Federated Indians of Graton Rancheria

November 15, 2018

Gene Buvelot
Federated Indians of Graton Rancheria
6400 Redwood Drive
Suite 300
Rohnert Park, CA 94928

SUBJECT: Project notification pursuant to Assembly Bill (AB) 52 and Senate Bill (SB) 18 for the San Rafael General Plan 2040 and Downtown Precise Plan

Dear Mr. Buvelot:

Your name and address were provided to us by the Native American Heritage Commission as an affiliated California Native American tribal representative. We are sending this letter to advise you that the City of San Rafael has initiated an update of its General Plan, as well as a Precise Plan for Downtown San Rafael. A single Program Environmental Impact Report (EIR) will be prepared for both projects. The letter serves as the initial consultation on the project.

Pursuant to AB 52, the City of San Rafael is requesting that you provide any information you may have regarding tribal cultural resources (as defined by Public Resources Code 21074) within the San Rafael Planning Area so that this information can be reflected as we undertake both the General Plan Update and the Downtown Precise Plan. A map of the Planning Area is attached to this letter. The City, as the lead agency, is requesting this input within 30 days of the date of this letter—or by December 15, 2018.

In addition, pursuant to SB 18, please notify us of any issues of concern that you would like to see addressed in either the General Plan or Precise Plan within 90 days (February 13, 2019).

We are providing this letter both by email and via the US Postal Service. The letter provides an overview of both projects and includes links to a website where additional information is available.

San Rafael 2040 General Plan Update

The existing San Rafael General Plan was adopted in 2004 and had a horizon year of 2020. The proposed General Plan Update will move the horizon year forward to 2040. The General Plan Update will add new policies about sustainability, climate change, sea level rise, transit-oriented development, transportation technology, environmental justice, residential and commercial land uses, and other topics. The new Plan will also provide updated language for geographic areas within the City where future land use

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changes are envisioned. The Plan's focus is on infill development on land that is already zoned for urban and suburban uses.

The General Plan Update was initiated in 2017 and is expected to take three years to complete. Major steps taken to date include creation of a 24-member Steering Committee, development of a project website, an "audit" of the existing Plan, development of guiding principles and a Plan outline, and preparation of a demographic profile of the city. The City also developed a detailed work program for the project, including a community engagement strategy. An interactive project website, including a platform for on-line engagement, has been created, and three community workshops took place in October 2018. Interviews with stakeholders and presentations to City commissions and other organizations are ongoing.

The City does not anticipate major changes in policy direction through the General Plan Update. The Plan's forecasts will generally follow ABAG projections, which anticipate a 12% increase in the number of households (roughly 2,800 households) and a 13% increase in the number of jobs (roughly 5,500 jobs) between 2010 and 2040. Much of this growth is expected to occur in Downtown San Rafael, where other travel modes are more readily available and densities are more conducive to walking and bicycling. Other opportunity sites include underutilized commercial and industrial properties located throughout the city.

Completion of the General Plan is projected for mid-2020. The City has set up a website to provide information about the project at www.sanrafael2040.org. This site includes a library of relevant documents, information on past and future meetings (including agenda packets and presentations), and draft documents. In addition, the City has established a platform for on-line engagement at www.cityofsanrafael.org/2040. This site allows residents to weigh in on planning issues such as sea level rise and mobility.

Downtown Precise Plan

In March 2018, the City of San Rafael applied for and received a $500,000 planning grant from the Metropolitan Transportation Commission to prepare a Downtown Precise Plan. The Plan will update the 1993 Downtown Vision Plan, which has been the guiding document for downtown planning for the last 25 years. The new Plan will incorporate recent planning efforts for Downtown, including a Station Area Plan (2012), a Parking and Wayfinding Study (2017), the Third Street Rehabilitation Project (underway), and the Transit Center Relocation Plan (underway).

The City is in the process of retaining a consulting firm to complete the Precise Plan and will initiate the project in January 2019. The scope of work includes a detailed profile of the area, which has been designated as a "Priority Development Area" (PDA) by ABAG/MTC, and a vision for its long-term future. The scope also includes new development standards, placemaking and design guidelines, a multi-modal transportation strategy, and an inventory of historic resources. The planning process includes consideration of land use and circulation alternatives, selection of a preferred plan, and development of the Precise Plan document itself. A robust community engagement program also is planned.

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The area covered by the Downtown Precise Plan will include the areas covered by the 1993 Vision Plan, plus additional properties near the new Downtown San Rafael SMART station. The latter area includes offices and other commercial properties immediately east of US 101, and potentially a limited number of light industrial properties immediately south of Second Street near the station. It is anticipated that the Precise Plan will result in specific land use and zoning recommendations that facilitate new housing construction, transit-oriented development, and the restoration of historic properties. The Plan also may propose modifications to the street system, parking, and public realm that make Downtown safer and more accessible for pedestrians, bicycles, and transit users.

We Welcome Your Participation

The City welcomes the participation of Native American groups in the Plan update process. Early communication with the City on issues of concern is strongly encouraged so that the City's policies and programs can be appropriately drafted or edited.

We will provide additional correspondence to this address when the Draft General Plan, Draft Precise Plan, and Draft Environmental Impact Report are published in 2020. Your organization will be provided with at least 45 days to comment on both documents, as well as the accompanying Draft Environmental Impact Report. Public hearing dates will be included in future correspondence.

If you have questions or comments, please do not hesitate to contact me at 415-485-3423 or at the email address below.

Sincerely,

Barry Miller
General Plan Contract Project Manager
Barry.Miller@cityofsanrafael.org

Gary O. Phillips, **Mayor** • John Gamblin, **Vice Mayor** • Kate Colin, **Councilmember** • Maribeth Bushey, **Councilmember** • Andrew Cuyugan McCullough, **Councilmember**

Barry Miller

From: THPO@gratonrancheria.com
Sent: Wednesday, April 10, 2019 12:19 PM
To: Barry Miller
Subject: City of San Rafael, General Plan 2040

Dear Barry Miller,

Thank you for notifying the Federated Indians of Graton Rancheria about City of San Rafael, General Plan 2040, a project within the Tribe's Ancestral Territory. We appreciate being notified and will review your project within 10 business days. If you have an immediate request please contact the Tribal Heritage Preservation Office for assistance by phone at (707) 566-2288 or by email at thpo@gratonrancheria.com.

Sincerely,
Buffy McQuillen
Tribal Heritage Preservation Officer (THPO)
Native American Graves Protection and Repatriation Act (NAGPRA)
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291

Antonette Tomic
THPO Administrative Assistant
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 143
Fax: 707.566.2291
atomic@gratonrancheria.com

please consider our environment before printing this email.

Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential
CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office at 707-566-2288, and immediately delete this message and all its attachments, if any. Thank you.









Downtown San Rafael Precise Plan

Historic Resources Inventory Summary Report

December 2020

Downtown San Rafael Precise Plan

Historic Resources Inventory Summary Report

A companion document to the Downtown San Rafael Precise Plan and the San Rafael General Plan 2040 Environmental Impact Report

Prepared by the City of San Rafael

With assistance from Garavaglia Associates and Opticos Design

Published December 2020

Cover Photo Credits: Matthew X Kiernan

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(*) Please contact the City of San Rafael Planning Department for access to Appendices B and C. They include numerous large digital files.

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1. Introduction

This report summarizes the findings of an inventory of historic resources completed as part of the San Rafael Downtown Precise Plan. The inventory builds on an historic inventory completed in 1977 (and administratively updated in 1986), as well as research by individuals and organizations completed since the 1986 update. The principal findings are based on field surveys and archival research completed in 2019 and 2020, including the completion of Department of Parks and Recreation (DPR) 523 Forms for approximately 40 eligible historic properties. Survey work was completed by a team that included City staff, consultants, and volunteers from San Rafael Heritage.

Background

As the oldest city in Marin County, San Rafael has many older buildings that contribute to its character and provide a tangible connection to the City's history. In 1977, the San Rafael City Council adopted a citywide survey of older, architecturally interesting buildings and structures known as the Historical/Architectural Survey. The survey was administratively updated in 1986 and includes 305 sites throughout the City. As of 2020, sixteen of these sites have been listed as local landmarks, and three have been designated as historic districts comprised of multiple structures. The remaining properties listed in the 1977/86 Survey are considered potential historic resources but are not formally landmarked.

About one-third of the buildings listed in the City's historic resources inventory are located in Downtown San Rafael. Downtown is where Mission San Rafael Arcangel was founded in 1817. San Rafael's heritage is rooted in this area, which represented the extent of the city's development for most of its first century. Downtown contains numerous buildings dating to the late 1800s and a large inventory of early 20th Century residential, commercial, and civic buildings. It also includes numerous mid-20th Century buildings that are eligible for consideration as historic resources today but were not when the survey was last updated in 1986.

During the next 20 years, much of San Rafael's growth is expected to occur Downtown. The area is well served by transit and public facilities, is relatively flat and centrally located, and includes a number of vacant and underutilized sites. As the center of commerce, culture, and civic life in San Rafael, it is also a logical place for compact, walkable development. Growth can reinforce the character of Downtown, help sustain local businesses, and relieve pressure for change in surrounding neighborhoods and open space areas. However, growth has the potentially to adversely impact historic resources, making it important to have an up to date resource inventory, along with measures to mitigate potential impacts.

Establishing a comprehensive inventory of historic properties allows the City to develop regulations and standards that are tailored to Downtown's unique context. A current inventory can expedite the environmental review process and provide a clearer path forward for future

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development. A historic property inventory can also provide an economic development tool, showcasing Downtown's unique assets, attracting visitors, and potentially providing access to state and federal funds, tax credits, and economic incentives for adaptive reuse. It also provides a way to "tell the story" of San Rafael for educational, cultural, and tourism purposes.

The Survey and the Downtown Precise Plan

In 2018, the City of San Rafael applied for and received a $500,000 "One Bay Area Grant" (OBAG grant) to prepare a Downtown Precise Plan. The OBAG grant program was created by the Metropolitan Transportation Commission (MTC) to align MTC's investments in transportation infrastructure with support for focused growth. Established in 2012, OBAG taps federal funds to advance the Bay Area's land use and housing goals and target capital investments in "Priority Development Areas" (PDAs) around the region. Downtown San Rafael is designated as both a PDA and a Transit Priority Area (TPA) and was a logical recipient of an OBAG grant during the program's second funding cycle in 2017-18.

The OBAG grant provided an opportunity to update "Our Vision for Downtown San Rafael," a planning document that has served as Downtown's Master Plan since 1993. "Our Vision" provided the framework for Downtown zoning, public space improvements, and circulation improvements and guided Downtown development for most of the 1990s and early 2000s. In 2012, the City prepared a Station Area Plan for the SMART station vicinity, but that Plan covers only those areas within ½ mile of the SMART rail station. It was also conceptual in nature and not covered by an Environmental Impact Report.

The Downtown Precise Plan process provided as a vehicle for applying best practices in transit-oriented development (TOD) to San Rafael. Among its components are new height maps and height bonus opportunities, proposed public realm upgrades such as plazas and open spaces, new bicycle and pedestrian improvements, and affordable housing and anti-displacement strategies. The Plan includes a new Form Based Code that will replace existing Downtown zoning.

Updating the 1977/ 1986 historic resources inventory was a priority from the outset. When the City applied for the OBAG grant, it indicated its intent to use a portion of the funds for an updated survey. The task of updating the historic resources inventory was included in the City's Request for Proposals (RFP) in 2018. Because a complete overhaul of the inventory would have been cost-prohibitive, a more limited scope of services was sought. Roughly 20 percent of the grant was set aside for preservation activities. The remaining 80 percent was required for visioning, planning and design concepts, economic and housing studies, transportation planning, land use and design standards, preparation of the Form Based Code, and community engagement.

In January 2019, the City Council approved a contract with Opticos Design to lead the Precise Plan effort. The Opticos Team included Garavaglia Associates, a San Francisco-based architecture firm specializing in historic preservation and resource assessment. The focus of the historic survey work was two-fold:

- **Field Surveys.** This included verifying the historic integrity of previously inventoried structures, gathering data on structures that were not previously eligible but now met Secretary of the Interior Standards, and identifying properties with no visible historic resources.
- **DPR Forms.** Garavgalia prepared DPR forms for those properties that were newly identified as being eligible as historic resources. Their scope of work did not include updating the DPR forms initially developed in 1977/1986.

The original 1977 survey did not cover structures built in the 1940s, 50s, and 60s, as those buildings would not yet have reached the 50-year "look back" period generally used in such surveys. The 2019 survey did include these buildings, as they are now all at least 50 years old. In addition, the 2019 survey determined that several buildings from the pre-war era also warranted DPR forms, including some that were not deemed historic resources at the time of the 1986 survey.

Because of resource limitations, the 2019 survey further focused on those parts of Downtown where changes were most likely to occur during the Precise Plan's 20-year horizon. Locations like Latham Street and Fifth Avenue (west of E Street) were not surveyed, as the Precise Plan does not propose land use changes in these areas. Most of the changes envisioned by the Precise Plan are in the vicinity of the San Rafael Transit Center and SMART station and along the Fourth Street corridor. These areas were comprehensively surveyed.

Organization of this Report

Following this introduction, this report provides a Historic Context Statement for Downtown San Rafael. The context statement describes the history of Downtown, including important events and periods in its development. It also describes the characteristic architectural styles of older Downtown buildings. The Context Statement provides a tool for determining whether individual buildings may be important or unique resources.

Chapter 3 describes the methodology and survey in greater detail. It includes the criteria for evaluating buildings and determining their eligibility as historic resources.

Chapter 4 presents the findings of the survey, classifying each parcel in San Rafael into one of the following categories:

- Existing historic landmarks
- Existing historic districts

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- Eligible historic districts, including the individual resources and contributing resources in each district. This includes resources deemed eligible in 1977/86 and resources deemed eligible on 2019-20 that were not previously inventoried.
- Eligible individual resources (outside of districts), including those listed in 1977/86 and those newly eligible
- Older buildings that are not eligible (generally properties listed in 1977/86 that have since been compromised)
- Properties without historic resources

Chapter 5 provides "fact sheets" for approximately 160 properties that were surveyed in the 2019 field survey. Each fact sheet includes a photo and a template with background information on the property. The fact sheets include all properties Downtown that were designated as historic resources, or determined to be eligible, along with a number of properties determined to be ineligible based on the survey.

This report has three Appendices:

Appendix A contains spreadsheets that were generated through the survey work. These spreadsheets were prepared using Excel and cover all 572 parcels in the study area. Addresses and Assessor Parcel Numbers (APNs) are provided for each record. As noted above (Chapter 5), 160 of these parcels were further documented on "Fact Sheets" while the remainder were outside the surveyed areas or determined to not have eligible resources.

Appendix B provides DPR forms for two eligible historic districts and approximately 40 eligible historic resources. All of these forms were prepared in 2020.

Appendix C provides DPR forms for properties surveyed in 1977/1986 but not resurveyed in 2019. Most of these forms were prepared more than 30 years ago and some may not meet current State standards. As a result, the City will be working on modernizing and updating these forms in the coming years so they become a more useful tool for evaluating for planning and building applications. Applicants seeking to alter such properties may be required to update these forms as a condition of approval, in the event they have not been updated by the City at the time of application.

Figure 1-1 shows the Downtown Precise Plan Boundary. Figure 1-2 shows the areas that were excluded from the 2019-2020 field survey. Some of the excluded areas contain historic resources but are not expected to experience significant changes during the time horizon of the Precise Plan. Resources located in the excluded areas that were catalogued in 1977/1986 are listed in this report. However, there may be additional resources in these areas. In the event alterations are proposed in an excluded area, additional research may be needed to determine if the structure is a historic resource.

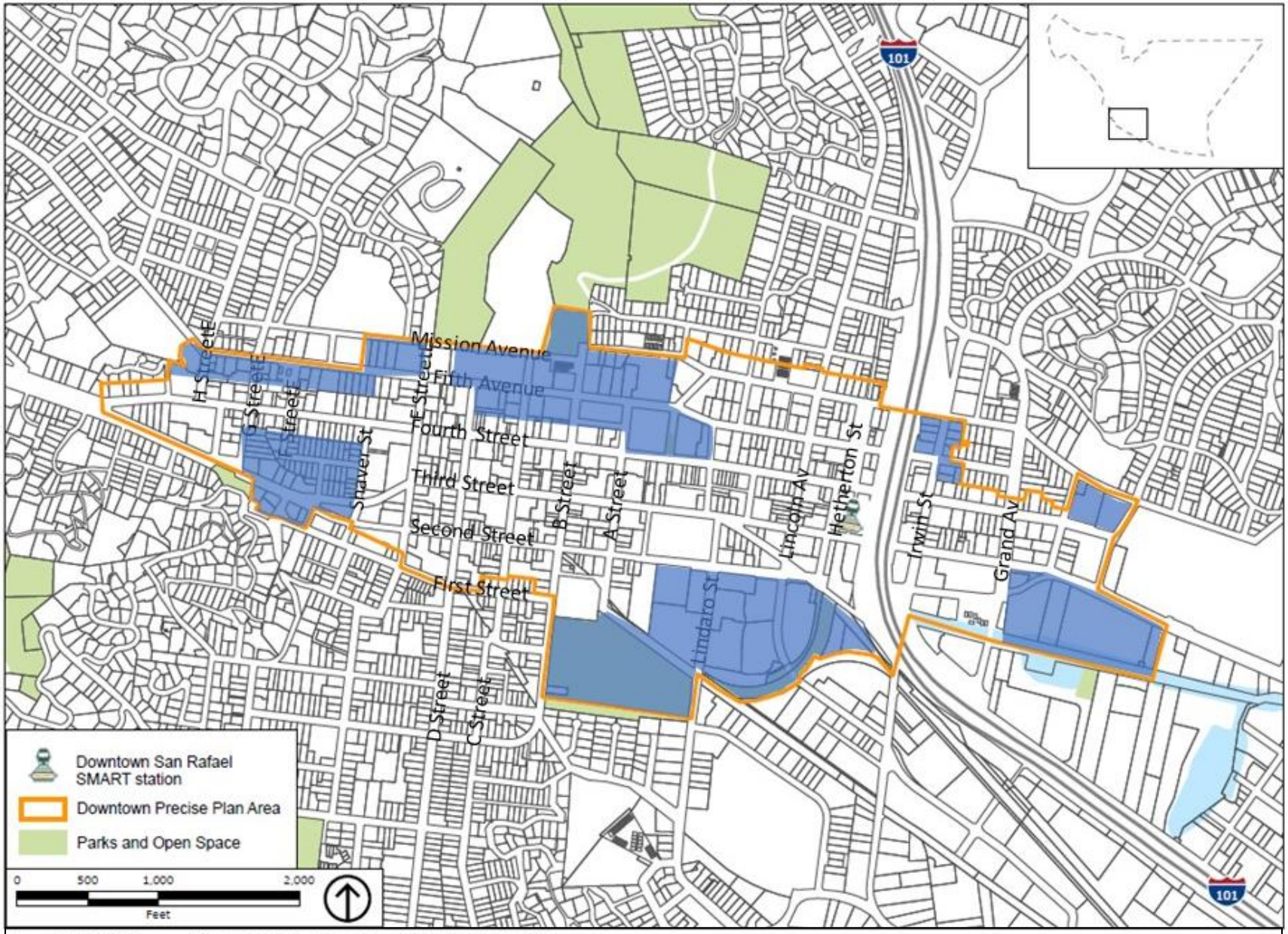
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Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 1-1

Downtown Precise Plan Boundary



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Area not surveyed

Figure 1-2

Downtown Areas Not Surveyed

2. Historic Context Statement

Preface

The historical and architectural development of San Rafael's Downtown forms a context from which existing and potential historic resources can be evaluated and preserved. The Downtown has evolved dramatically over several centuries, reinforcing San Rafael's prominence as the cultural, civic, and economic center of Marin County.

Historic Context Summary

The area that is now the City of San Rafael was once the site of several Coast Miwok villages, including the village of Nanaguani along San Rafael Creek inhabited by the Aguasto tribe.[1] In 1817, Mission San Rafael Arcángel was founded as the 20th of a total 21 Spanish missions in the Spanish colonial province of Alta California, and gained full mission status in 1822.[2]

San Rafael grew gradually after California statehood in 1850, entering an accelerated period of commercial and residential growth over the next several decades. Spurred by advances in transportation and train service to San Rafael, hotels and saloons were constructed to host a modest hospitality industry of summer and weekend visitors.[3] By 1900, Fourth Street had developed into a premier commercial corridor in Marin County and the greater Bay Area.

An influx of new residents came to San Rafael following the 1906 San Francisco earthquake and fire, triggering new residential development surrounding the Downtown core. The expansion of these neighborhoods created a foundation for the mixed residential/commercial areas in San Rafael, and the need for additional civic services.

The opening of the Golden Gate Bridge in 1937 and the increasing popularity of the automobile created a new connectivity between Marin County and San Francisco, stimulating a period of prosperity with the San Rafael's first "highrise" buildings.[4] By this time San Rafael was also home to several theaters and venues to entertain the growing and diversifying population.

During World War II the Bay Area became a major hub for wartime industry, bringing waves of migration to San Rafael. Following WWII, there was a stark increase in population which necessitated a new type of suburban housing development, resulting in the construction of housing tracts and subdivisions outside of Downtown and into the eastern and northern portions of San Rafael. These events refocused downtown development to provide locally oriented goods

[1] Marin County History Museum, Images of America: Early San Rafael, (Charleston, SC: Arcadia Publishing, 2008), 9.
[2] "History of San Rafael," San Rafael Chamber, website. Accessed April 24, 2019. http://srchamber.com/history-of-san-rafael/.; and, "History of Mission San Rafael Arcángel ," California Missions Foundatin, website. Accessed April 24, 2019. http://californiamissionsfoundation.org/mission-san-rafael/.
[3] Ibid.
[4] Known as the Albert Building, the significance will be covered as an example of neo-classical architecture in the following sections.

and services to many working families now residing in San Rafael. In the years immediately after the war, San Rafael's Downtown continued to prosper, as department stores, restaurants, civic buildings, medical services, and institutions emerged. During this time, Downtown retail included JCPenney's and Albert's Department Store.

From the mid-twentieth century to the present, San Rafael's downtown has continued to be centered on the Fourth Street and B Street commercial corridors. Initially centered on the Mission and maritime routes to San Francisco, San Rafael became, in turn, a railroad depot, a regional wartime economic center, an auto-oriented county seat, and the commercial, employment, and cultural center of Marin County and the greater Bay Area.

Native American and Spanish (Mission) Era

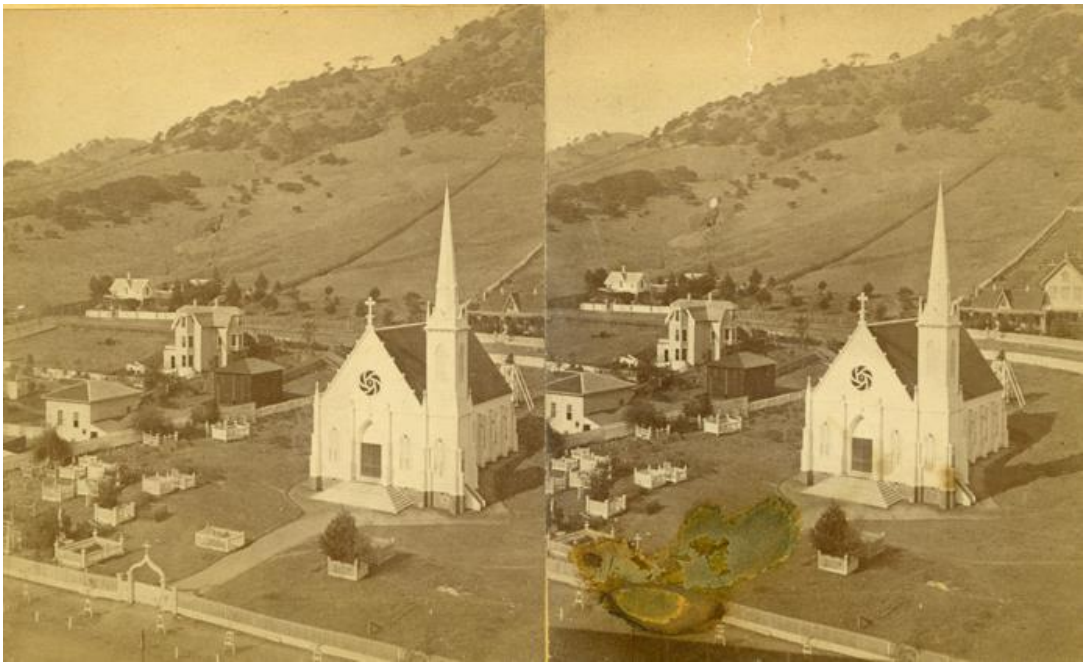
For thousands of years prior to the arrival of settlers from Spain and Mexico, the land that is now known as San Rafael contained several Coast Miwok villages. The earliest recorded account of the Coast Miwok people comes from a diary kept by a chaplain who was aboard Sir Francis Drake's ship that landed in Marin County in 1579.[5] The Aguasto tribe of the Coast Miwok valued the location within the valley and adjacent to the Bay and built a village along San Rafael Creek which they called Nanaguani.[6]

When the Spanish arrived in the early 19th century they took advantage of the land that the Aguasto and Coast Miwok had cultivated, seeing opportunity in the sunny weather and access to fresh water.[7] The Nanaguani village was taken as the site to establish an asistencia (hospital) for Mission Dolores in present day San Francisco.[8] The fertile land and ideal climate proved fruitful for cultivating crops and raising livestock. The population of the site grew and the asistencia was raised to full mission status in the fall of 1822.[9]

Following the secularization of the missions in 1834, Mission San Rafael Arcángel was placed under the control of the administrators. After this period the Miwok people were kept in servitude by the Mexican land grant owners and were eventually granted land north of San Rafael.[10] In 1837, Timothy Murphy was appointed as administrator, and by 1844, was granted three contiguous parcels that were eventually divided into smaller tracts that would shape the boundaries of San Rafael.[11] The Mission declined rapidly as an economic and political force and was largely abandoned by 1840. The ruins of the adobe building at the Mission site were removed in 1870, and what stands on the site now are reconstructions from 1919 and 1949.[12]

---

[5] *"History,"* Federated Indians Graton Rancheria, website. *Accessed online, December 3, 2020. https://gratonrancheria.com/culture/history/.*
[6] *Images of America: Early San Rafael, 9.*
[7] *Ibid., 13.*
[8] *"History of San Rafael," San Rafael Chamber, website. Accessed April 24, 2019. http://srchamber.com/history-of-san-rafael/.; and, "History of Mission San Rafael Arcángel," California Missions Foundation, website. Accessed April 24, 2019. http://californiamissionsfoundation.org/mission-san-rafael/.*
[9] *Images of America: Early San Rafael, 13.; and California Missions Resource Center, San Rafael Arcángel Key Facts. (2019). Retrieved July 29, 2020, from https://missionscalifornia.com/san-rafael-Arcángel -mission/key-facts*
[10] *"History," Federated Indians Graton Rancheria, website.*
[11] *Images of America: Early San Rafael, 19.*
[12] *California Missions Foundation. (2017, September 03). San Rafael Arcángel. Retrieved July 29, 2020, from http://californiamissionsfoundation.org/mission-san-rafael/ -*



Taken circa 1863-1877, this photo shows the Catholic church in the approximate location the Mission once stood and grave plots in front. The Coleman Residence, discussed in the Residential Growth section below, is also visible. (California State Library, California History Section Picture Catalog)

Early Growth of the Town

The early shape of San Rafael formed around the original Spanish mission in the early 1840s, when immigrants first came to the area during the gold rush.[13] No gold was found in San Rafael, but a thriving cattle farming business developed for the production and supply of beef to the San Francisco market and areas of the Gold Country.[14] When California became a state in 1850, local land grants were divided into farms and city blocks, and former grants' owners made up the early population of San Rafael.[15] San Rafael was later incorporated as a city in 1874.[16]

Expansion of the Railroad

The streetscape of San Rafael's commercial downtown developed along a typical pattern of regional growth from the late 1860s to the 1890s, when advances in transportation technologies and expansion in services determined the location for housing and businesses. In 1870, the San Rafael and San Quentin Railroad was established, offering a regular train service to Point San Quentin.[17]

[13] *Images of America: Early San Rafael.*
[14] *Ibid.*
[15] *Ibid.*
[16] *Barry Spitz, Marin: A History, (Protrero Meadow Publishing, 2006), 111.*
[17] *Marin: A History, 97.*



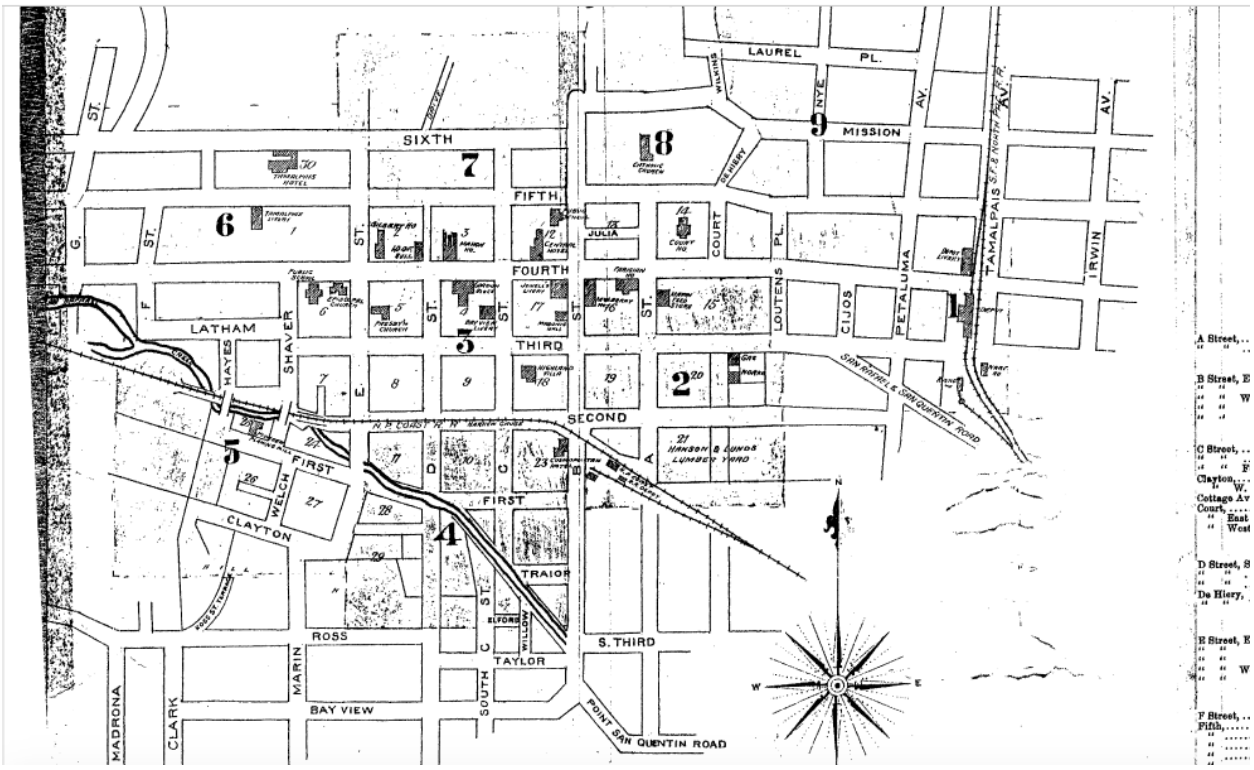
Views of San Rafael looking northeast (left), and northwest (right), circa 1858-1906 (Stereographs of the West from The Bancroft Library Pictorial Collection, ca. 1858-1906, UC Berkeley, Bancroft Library)

When the transcontinental railroad was completed in 1869, many unemployed Chinese immigrants came to San Francisco and the surrounding cities. In San Rafael a community was formed along the east side of C Street with shops, laundries, and gambling establishments.[18] A Chinese community simultaneously formed a few miles east along San Pablo Bay, where nearly 500 people originally from Canton China lived and worked in a shrimp-fishing village.[19]

The incorporation of the North Pacific Coast Railroad (NPC) followed in 1871, which provided San Rafael with a spur track that connected San Anselmo to the station at B Street. A new depot was constructed in Tamalpais Avenue between Third and Fourth Streets in 1884, and passenger ferry services were provided with the extension of the San Francisco and North Pacific Railroad (SF&NP) in 1879. A faster and more reliable electric train service was ultimately introduced in 1903.[20]

The railroad encouraged a modest hospitality industry of summer and weekend visitors that contributed to the growth of the town, with the opening of several hotels, saloons, and specialty shops.[21] By 1900, Fourth Street had become a premier shopping area in Marin County.[22]

[18] *Ibid., 59-121.*
[19]*. Today the remaining buildings have been preserved as a part of China Camp State Park. "China Camp State Park," California Department of Parks and Recreation, website. Accessed online, December 3, 2020. https://www.parks.ca.gov/?page_id=466.*
[20] *Images of America: Early San Rafael.*
[21] *Images of America: Early San Rafael.*
[22] *Marin: A History, 158.*



The NPC and SF&NP railroads are clearly marked in the 1877 Sanborn Fire Insurance Map. (Sanborn Map & Publishing Co., May 1877)

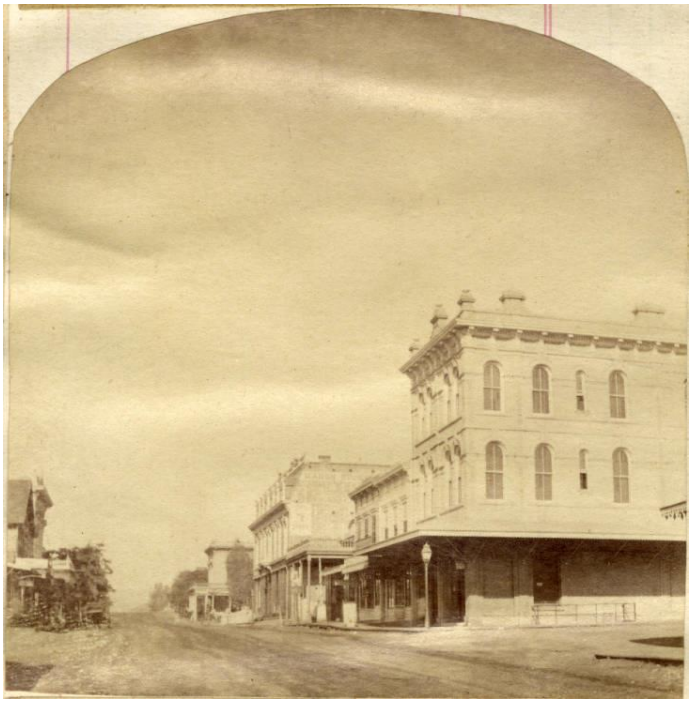
Commercial Development

Early commercial development in the downtown area started to take place in the mid-1860s. John A. Davis and Daniel T. Taylor were credited for opening the first store that sold general merchandise, which was immediately followed by a meat market.[23] By 1866, the town had acquired three stores, two hotels, two boarding houses, one restaurant, two stables, three boot makers, two blacksmith shops, a butcher shop, a clock maker, a barber, three lawyers, and a physician.[24]

This period saw Fourth Street become San Rafael's "Main Street" with retail and commerce centered on the east-west thoroughfare. The rail station at B and Second streets also became a hub of activity with a smaller commercial district beginning to grow on the north-south axis connecting the rail junction to Fourth Street.

Much of the commercial development pattern in San Rafael was influenced by the rail lines. Most notably this can be seen in the design and construction of the Flatiron Building. Built in 1883, the structure originally functioned as a saloon and boarding house for nearby railroad workers.[25] By 1935 the building had been covered with stucco, but circa 1980 the stucco was removed and the second story was rebuilt to include more ornate detailing.

[23] *Images of America: Early San Rafael.*
[24] *Ibid.*
[25] *Department of Parks and Recreation Historic Resources Inventory form for 724 B Street, San Rafael. Recorded by Niki Simons (Charles Hall Page & Associates, Inc.), 1977.*



View looking west at the intersection of Fourth and C Streets, circa 1877. The photo shows the Centennial Building constructed in 1876, which was later replaced with the Bank of Italy building. (R. E. Wood Collection, California State University, Chico)

By the 1890's San Rafael was a commercial and cultural center and was taking on a shape we can recognize today. Fourth Street was a premier shopping area, attracting the largest department store in Marin County (owned by Jacob Albert and located at 1216 Fourth Street).[26] At this time, numerous businesses opened on A and B Street in the blocks below Fourth Street.

Commercial streets developed during this period, featuring a mixture of one-story single-business establishments and multi-story mixed-use buildings (typically residential, hotel rooms, or offices above ground-floor storefronts). Commercial buildings and storefronts aligned with turn-of-the century regional trends, and increasingly featured multiple, narrow storefronts. Stylistically, the design of commercial buildings from this period was closely aligned with Victorian-period residential architectural styles.[27]

In San Rafael, examples from this Victorian period include Italianate, Second Empire, and Queen-Anne elements applied to commercial construction. Elements of these styles can also be seen in buildings best described as vernacular in style, as well examples of Colonial Revival.

Italianate

The most common distinguishable style of this era in San Rafael is the Italianate Style. Italianate Style buildings were constructed in the United States between 1840 and1885. The Italianate style, along with the gothic revival, began in England as part of the Picturesque

[26] *In 1895 Jacob Albert opened "The Wonder" at the southwest corner of B and Fourth Streets. This building stood as the first of what would become a chain of stores across the county, later known as Albert's Emporium. Images of America: Early San Rafael, 59.*

[27] *City and County of San Francisco Planning Department, Neighborhood Commercial Buildings: Historic Context Statement 1865-1965-Draft for Public Review, February 17, 2016.*

movement, a reaction of the formal classical ideals in art and architecture that had been fashionable for about two hundred years.[28] The movement emphasized rambling, informal Italian farmhouses and town squares as models for Italian style villa architecture. More formal Italian models from the renaissance or ancient Rome had led to the formation of the previous era of classicism and remained a principal artistic source during the reaction against earlier ideals. Italianate houses in the United States follow the informal rural model of the picturesque movement, and were modified, adapted and embellished. The initial Italianate houses in the United States were popularized by the influential pattern book of Andrew Jackson Downing published in the 1840s and 850s. Other books for Italianate designs were Samuel Sloan's The Model Architect. Two chronological phases were distinguished in the development of the Italianate style in the United States, which include an earlier phase spanning the 1840s and 1850s with relatively simple detailing, and a later highly decorated phase from the 1860s through the 1870s (High Victorian Italianate).

The Italianate style was particularly common in the design of buildings in the expanding towns and cities of the Midwest and for the earlier towns near San Francisco. The style is generally characterized by "two or three story, low pitched roof with moderate to widely overhanging eaves having decorative brackets beneath, tall, narrow windows, commonly arched or curved above windows, frequently with elaborated crowns, often of inverted U shape; many examples with square cupola or tower." Six subtypes of the style exist, with a multitude of variants and details."[29] The principal subtypes can be distinguished in simple hipped roof, centered gable, asymmetrical, towered, front-gabled roof, and town house. The principal areas of elaboration in Italianate houses are windows, cornices, porches, and doorways. Most examples comprise an intermixing of details derived from both informal rural models as well as formal Renaissance town homes.[30]



The oldest standing example of a commercial Italianate structure in San Rafael is at 1321 Fourth Street. Originally built in 1871 to house a business for local banker Upton Gordon, the building continued to be used for banking purposes through the early decades of the 20th century.[31] The building has gone through several renovations but retains Italianate detailing in the pedimented arched windows and decorative quoins.

[28] Viriginia Lee McAlester, A Field Guide to American Houses, (New York: Alfred A. Knopf, 2013), 282-302.
[29] Ibid.
[30] Ibid
[31] Department of Parks and Recreation Historic Resources Inventory form for 1321 Fourth Street, San Rafael. Recorded by Niki Simons (Charles Hall Page & Associates, Inc.), 1977.

Another prominent example of Italianate commercial architecture is the Landmark building at the corner of Fourth and B Street. The property was purchased by Patrick McDermott from William Coleman in 1883, and was built soon after as the "Mulberry House."[32] Although detail has been lost at the first story commercial storefront, the second story remains articulated with tall segmented windows with triangular pediments and brackets.

Second Empire

Second Empire was a popular style in the United States between 1855 and 1885. The style dominated residential homes in other regions between 1860 and 1880 but was rare on the West Coast. The Second Empire style was used for American civic buildings between 1869 and 1877 but fell out of fashion with an economic decline.[33]

The identifying features of the Second Empire style include a mansard roof, dormer windows, molded cornices, and decorative brackets.[34]



Originally known as the Mahon House, the building at 1330 Fourth Street first appears on the 1879 Sanborn Fire Insurance Map of San Rafael. The first floor of the building has continuously been occupied with commercial space, with apartments or hotel rooms on the second floor.[35]

Queen Anne

Elements of the Queen Anne style can be seen in a variety housing and commercial types over the turn of the twentieth century. Although there are several subtypes, Queen Anne style architecture is most identifiable through: steeply pitched roof or irregular shapes, often with a front-facing gable; articulated facades with details such as patterned shingles and cutaway bay windows; and asymmetrical facades.[36]

The most notable example of Queen Anne commercial style can be seen at 844-48 B Street (1890), and at 1240 Fourth Street (1893). Both buildings feature corner towers, cantilevered bay windows, and decorative cornices.

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[32] *San Rafael Landmark Nomination*
[33] *A Field Guide to American Houses, 242.*
[34] *Ibid., 241*
[35] *Department of Parks and Recreation Historic Resources Inventory form for 1330 Fourth Street, San Rafael. Recorded by Niki Simons (Charles Hall Page & Associates, Inc.), 1977.*
[36] *A Field Guide to American Houses, 242.*



French-born tailor and local proprietor Louis Peter built 1240 Fourth Street to operate his dry goods business, opened in 1893. As a prominent commercial anchor on Fourth Street.

Residential Growth

Although most of the residential growth during this period occurred in surrounding residential neighborhoods, several large residences and clusters of smaller residences were constructed in the Downtown area that are still present today.[37]

The largest residence, and possibly the oldest standing building in San Rafael, is the Coleman House at 1330 Mission Avenue. The original wood frame portion of the house was believed to have been constructed circa 1849-1852, by pioneer and Marin County district attorney Walter Skidmore.[38] In 1866 the house was purchased by William Tell Coleman as a summer home, and oversaw additions designed by architect John M. Curtis.[39]

Other early residences in the Downtown area include 823-825 Mission Avenue (1881, designed Heatherton and Pelton), and the Falkirk Mansion (1888, designed by Clinton Day). From the late 1800s well into the 20th century, most of the residences that were developed in Downtown were multi-family units built above ground-floor retail space. Residential hotels were also constructed, such as the "Butchart Hotel," now known as the La Casa Grande Apartments at 1330-1336 Fourth Street (see Mahon House above).

[37] *Images of America: Early San Rafael*
[38] *Ibid.*
[39] *Ibid.*

Increase in Civic Development

As the population of San Rafael increased, the needs of the residents began to change. San Rafael was being cemented as the central city in the County, providing varied resources to the local community. As residences were constructed at the edges of Downtown and in the surrounding neighborhoods, civic needs were centralized Downtown. Several individuals who had immigrated to California during the gold rush played a fundamental role in the civic development of San Rafael. William Tell Coleman, for example, who had moved to San Rafael in 1871, was one of the most influential personalities in the construction of the Marin County Courthouse, development of the water system, promotion of the railroad, and construction of the Hotel Rafael.[40]



View of early San Rafael, looking southwest from the Marin County Courthouse steps, undated (California History Section Picture Catalog, California State Library)



Civic pride was also gaining during this time, and many residents participated in a show of pride at the Grand Carnival Parade in 1908 (California History Section Picture Catalog, California State Library)

[40] *Ibid.*

Institutions

The first local school was built by pioneer James Miller in 1849 at the corner of Fourth and A Streets. Following in the direction of the increased residential development, private schools and academies were built outside of the Downtown core.[41] However, a push for more substantial public school options led to the completion of the first public schoolhouse in 1862.[42] The B Street School followed in 1870 and the Fourth Street Grammar School opened in 1886. In 1888 San Rafael High School opened, marking the construction of the first high school in Marin County.[43]

Along with schools and civic structures, religious institutions began to take shape where the Mission San Rafael Arcángel once stood. In 1869 St. Paul's Episcopal Church was constructed in the Victorian Gothic style, designed by architect W.A. Boyd. In 1923 the church was moved to its' current location at 1123 Court Street, at which time the gothic spire was removed and the shingles were covered with stucco.[44]



St. Raphael's School at Fifth Avenue and A Street, circa 1915 (Marin County Free Library. Anne T. Kent California Room)

[41] Images of America: Early San Rafael, 79.
[42] Ibid.
[43] Ibid, 92-98; and Marin: A History, 135
[44] Department of Parks and Recreation Historic Resources Inventory form for 1123 Court Street, San Rafael. Recorded by Niki Simons (Charles Hall Page & Associates, Inc.), 1977.



San Rafael High School at E Street between Third and Fourth Streets, circa 1922 (Marin County Free Library. Anne T. Kent California Room)

San Rafael Becomes a Recreation Destination

Although permanent residency increased in the late 19th century, the idyllic weather and rolling hills continued to attract vacationers and weekend visitors. Several hotels were constructed at this time, including the Central Hotel at 1222 Fourth Street (1859), and the Delmonico House Hotel at the southwest corner of B and Second Streets (1876).[45]



The most prominent fixture of the vacation industry was the San Rafael Hotel, which was located northeast of Downtown near Dominican University. Developed by the San Rafael Hotel Company in 1887, the hotel attracted visitors from around the Bay Area until it was lost to a catastrophic fire in 1928.[46] (Marin County Free Library. Anne T. Kent California Room)

[45] *Department of Parks and Recreation Historic Resources Inventory form for 1222 Fourth Street, San Rafael. Recorded by Ann Batman (Charles Hall Page & Associates, Inc.), 1977.*
[46] *Marin: A History, 134*

To entertain the residents and visitors in San Rafael, a need for local entertainment grew. Known for many years as Gordon's Opera House, the building at 1333 Fourth Street was constructed for Upton Gordon. The first floor served as space for commercial business, while the open upper floor held a variety of shows and entertainment and provided a venue for community gatherings.

Evolution in the 20th Century

In the later years of the 19th century San Rafael had begun to be seen by some San Franciscans as a desirable escape from city life. Wealthy San Franciscans such as AP Hotaling, John H. Reddington, and Robert Dollar began to relocate to San Rafael, after regular ferry services became available travel between the two cities. There was an influx of new residents following the San Francisco earthquake and fire in 1906.[47] The increase in population triggered new development in the residential neighborhoods on the borders of the new downtown. The expansion of these neighborhoods created a foundation for the mixed residential/commercial areas in what is now the West End as well as the residential neighborhoods immediately north of downtown. The early twentieth century also saw an increased interest in the civic life of San Rafael, with the establishment of a Marin County Board of Supervisors, a local National Guard company, and construction of new civic buildings.[48]

These changes were accelerated by the Japanese bombing of Pearl Harbor in December of 1941 and the entry of the United States into World War II. The Bay Area became a major hub for wartime industry, mainly shipping and arms production, bringing waves of migration and development to San Rafael. San Rafael's proximity to Point Richmond, the Mare Island shipyards and Marinship in Sausalito caused a severe housing shortage and the construction of many new homes, including the subdivision of existing housing. These events refocused new development to provide locally oriented goods and services to many working families now residing in San Rafael. The growth of nearby military installations such as Hamilton Army Air Base would also result in considerable impacts on downtown growth and commerce and set the stage for post-war suburban growth.

Even as the automobile became more ubiquitous, neighborhoods like the West End developed a "village" like character of small shops and residences.

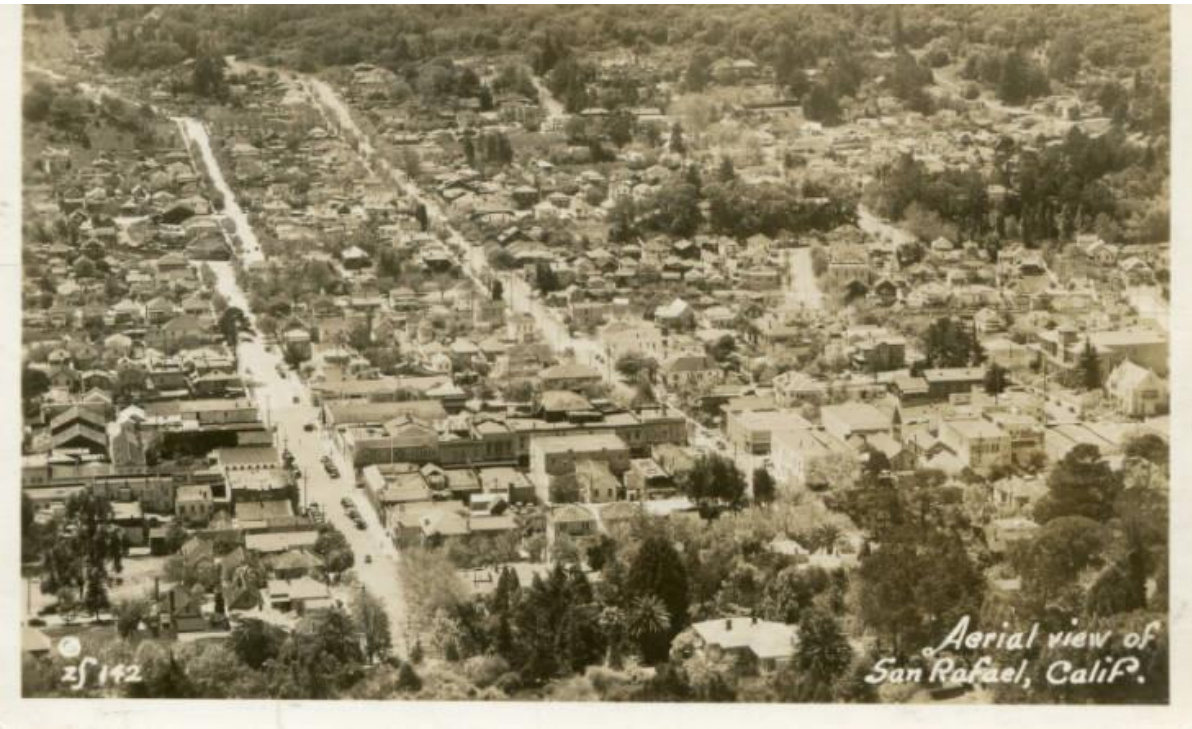
Opening of the Golden Gate Bridge and Bay Area Transportation

The early 20th century saw a transformation of transportation infrastructure in San Rafael, beginning with the relocation of passenger ferry service from Tiburon to Sausalito and the construction of the Northwestern Pacific electric interurban railway system from the Sausalito ferry terminal. The interurban system was soon providing commuter service from southern Marin, the Ross Valley and San Rafael to San Francisco.

[47] *In the early morning hours of April 18, 1906, a massive earthquake rattled the Bay Area, and ignited a catastrophic fire in San Francisco. Destruction from the fire displaced thousands of San Francisco residents, forcing relocation to surrounding cities such as San Rafael.*
[48] *Images of America: Early San Rafael*, 37.

As late as 1903, automobiles were banned from many Marin County roads, prohibited from night use, and limited to a 15 mile-per-hour speed. In 1909, a winding series of roads leading from Sausalito through the other towns of Marin County was designated a California state highway, an early step in the transformation of California's built environment around the personal automobile. Entering San Rafael from the west, the highway traveled along Fourth Street before turning north and leaving San Rafael via Lincoln Avenue. In 1915 the San Rafael-Richmond Ferry was constructed, offering automobile access from the east. In 1915 the railroad was still running, necessitating a new Northwestern Pacific Railroad Station.

The federal government had authorized the construction of US 101 in 1925, and by 1929 its Marin County route was under development. By the mid-1930s, US 101 was handling 1.5 million cars annually. Population growth and ever-increasing reliance on automobile transportation created demand for additional infrastructure, and federal funding made available by the New Deal allowed construction on the Golden Gate Bridge to begin in 1933.[49]



Aerial view of San Rafael looking west, 1934. (Marin County Free Library. Anne T. Kent California Room)

The opening of the Golden Gate Bridge in 1937, and the increasing popularity of the automobile, improved connectivity between Marin County and San Francisco, effectively ending the rail era. The last commuter train departed from San Rafael in 1941, the same year a viaduct for Highway 101 was completed over San Rafael Creek.[50] This raised freeway through the heart of the city created a visual and physical barrier between east and central San Rafael.

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[49] Jim Wood, History of a Highway, Marin Magazine, April 17, 2009, https://marinmagazine.com/community/history/history-of-a-highway/, accessed July 20, 2020.
[50] Marin County History Museum, Images of America: Modern San Rafael: 1940-2000, (Charleston, SC: Arcadia Publishing, 2008), 14.

While means of transportation were rapidly changing in the early 20th century, the need for rail stations persisted. The Spanish Colonial/Mission Revival "B Street Station" was constructed to replace an older structure in 1928. This era also saw the replacement of the 1890 railroad shed structure at Tamalpais Avenue with a Spanish Colonial/Mission Revival station in 1929. The station was designed by architect Frederick H. Meyer, who is credited with designing many "Mission Revival" stations throughout Marin County. The station has been significantly altered, but still stands in its original location.



The station originally stood behind the Flatiron building at Second and B Street, but was moved to its current location at A Street in 1930 (720 [728] A Street).

Changing Civic Needs

Examples of this period in San Rafael's urban development can be seen in the Classical Revival San Rafael Improvement Club which was built for the 1915 Panama-Pacific exhibition and floated across the bay from San Francisco. The building became the staging area for mosquito eradication programs and other projects. The Public Library, which still stands at the corner of Fifth and E Streets, is another prime example of civic architecture of the period.



Marin County Courthouse at Fourth and A Street, circa 1930 (Marin County Free Library. Anne T. Kent California Room)

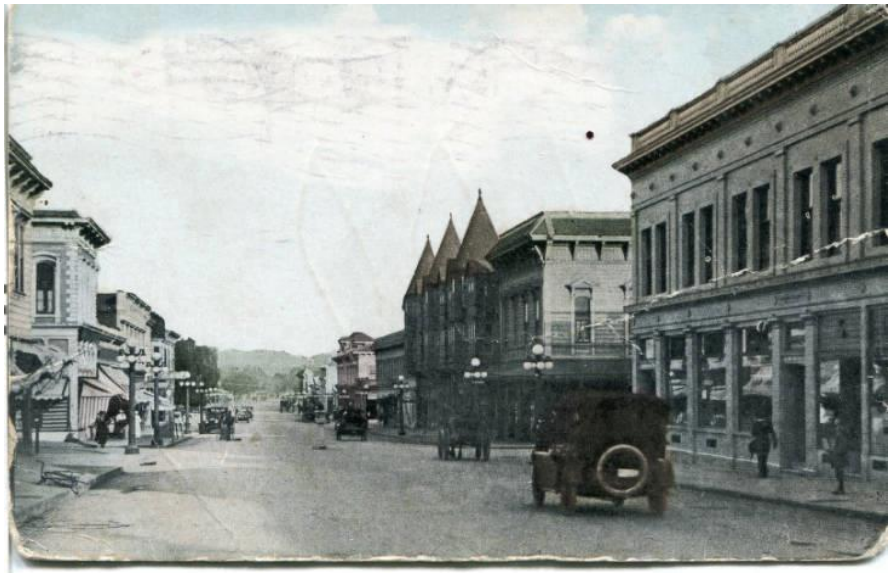


In 1905 Andrew Carnegie donated $25,000 to construct the San Rafael Public Library. This library was the first Carnegie Library in Marin and was dedicated in 1909.[51]

Institutions adapted to the changing needs of the San Rafael residents, and several new buildings were constructed into the early 1920s. The First Church of Christ Scientist, designed in the Neo-Classical style, was constructed in 1910; and St. Paul's Church was moved to E Street in 1924. Also, in 1924, the E Street School was constructed at the northwest corner of Second and E Streets.

Continuing Commercial Development

As the population of San Rafael grew in the early 20th century, so did Fourth Street as a commercial shopping, dining, and recreational center. Construction during this time continued to follow greater patterns of commercial storefront design, notably in examples of revival-style buildings.



Postcard of San Rafael looking west on Fourth Street near B Street, circa 1915 (Marin County Free Library. Anne T. Kent California Room)

[51] *Marin: A History, 187*



Postcard of San Rafael looking west down Fourth Street from A Street, circa 1920 (Marin County Free Library. Anne T. Kent California Room)



View looking east down Fourth Street, 1932 (Marin County Free Library. Anne T. Kent California Room)



View looking west down Fourth Street from Lootens Plaza, 1944 (Marin County Free Library. Anne T. Kent California Room)

Spanish Colonial Revival

In the Bay Area, the Spanish Colonial revival style gained popularity after being introduced during the 1915 Pan-Pacific International Exposition. Often also referred to as Mediterranean or Mission Revival, this style is characterized by tiled roof, parapets or coping; pent roof forms; exterior stucco cladding; arched windows and transoms; and decorative moldings.[52]

A primary example of Spanish Colonial Revival in San Rafael is 1200-26 Fourth Street/1009 B Street. Known also as the Aileen Apartments, this property was purchased in 1915 by Herzog and Rake and developed in 1917. An existing small brick building was incorporated into the structure to form a first floor of commercial shops and an upper story of apartment spaces.[53]

Another prominent example of this style is the corner building at 1447 Fourth Street. The property was developed in 1916 for the Pacific Gas & Electric Company and remained the company headquarters until 1963. The building was later used as the main branch for Redwood Bank.[54]

[52] *Neighborhood Commercial Buildings: Historic Context Statement 1865-1965-Draft for Public Review, February 17, 2016.*
[53] *Department of Parks and Recreation Historic Resources Inventory form for 1200-26 Fourth Street/1009 B Street, San Rafael. Recorded by Ann Batman (Charles Hall Page & Associates, Inc.), 1978.*
[54] *Department of Parks and Recreation Historic Resources Inventory form for 1447 Fourth Street, San Rafael. Recorded by Niki Simons (Charles Hall Page & Associates, Inc.), 1977.*



A principal example of Spanish Colonial Revival architecture in San Rafael is the Church of Saint Raphael / Mission San Rafael Arcángel. The buildings standing today were designed from research and findings by the Marin County Historical society to replicate the original Mission buildings as closely as possible. With financing from the Hearst Foundation, the structures were completed by 1949.[55] (California Historical Society Collection, 1860-1960, University of Southern California Digital Library)

Neoclassical

The Albert Building at 1010 B Street is the most prominent example of Neoclassical commercial architecture in Downtown San Rafael. Built for local merchant Jacob Henry Albert in 1920, the building is credited as being the first building classified as a skyscraper in Marin County. The building housed what was to be a chain of small goods stores, and was outfitted with modern conveniences of the time, including an elevator.[56]

[55] *Images of America: Modern San Rafael 1940-2000, 94.*
[56] *Department of Parks and Recreation Historic Resources Inventory form for 1447 Fourth Street, San Rafael. Recorded by Patricia P. Meyer (Charles Hall Page & Associates, Inc.), 1977.*



Theatres

In 1912 the California Motion Picture Corporation brought its studio to San Rafael, and with it a growing movie-going culture. Small nickelodeon theaters opened in existing storefront spaces in town, followed by larger movie palaces. The Orpheus Theatre on Fourth Street was built in 1920, marking the first building constructed specifically to show movies, specifically silent movies. The Orpheus Theatre burned in 1937 and was replaced by the Rafael Theatre which still stands today.[57]

The El Camino Theater was built in 1928, designed and constructed as an opulent movie palace. The El Camino Theater fell to the fate of similar movie palaces when the attention of the American viewer turned to television. Eventually the theater was stripped and converted to a JC Penney store in 1953.

[57] *Images of America, Early San Rafael, 116-7*



View of the El Camino Theater on Fourth Street, 1932 (Marin County Free Library. Anne T. Kent California Room)

Change in a Post-War World

As the country changed following the profound impacts of World War II, so did the City of San Rafael. Supporting industries for the war ceased function, and workers sought alternate opportunities. This period saw the beginnings of larger auto-focused developments, like those seen east of the freeway in Montecito Plaza.[58] Following the war, housing needs started to increase, and the Sun Valley, Terra Linda, Glenwood, Peacock Gap and Marinwood neighborhoods were developed on former ranch lands from 1953 through the 1970s. Industries around San Rafael Canal also continued well into the 1950's including petroleum sales for other local industries.

Suburban Migration

During the postwar years, especially between 1953 and 1955, the construction of San Rafael's housing stock rapidly increased. The development of the Terra Linda and Marinwood neighborhoods on former ranch lands are just one example of San Rafael's expansion at this time. Ferry strikes beginning in the late 1940s led to construction of the Richmond-San Rafael Bridge in 1956, and the demise of ferry service between San Rafael and Richmond.

Rapid construction of many inexpensive commercial buildings took place on recently drained lands that had been the marshy floor of the San Rafael Valley, expanding the town's footprint into previously open space. Other notable examples of construction during this period can be found in the Eichler homes in the Terra Linda and Marinwood neighborhoods.

New Commercial Opportunities Downtown

In the years immediately after the war, Fourth Street remained the commercial and cultural center of Marin County. San Rafael's downtown continued to prosper, as department stores, restaurants, the County Courthouse, City Hall and even the first Kaiser Permanente clinic in town, combined with churches, nearby residences, and emerging postwar industries to define the modern city. The explosive growth occurring in San Rafael at the time can be seen in shifts of building materials, techniques and location during the post war period. Auto repair shops and auto showrooms also flourished, and a reliance on auto-oriented transportation dominated the region.

New opportunities also brought many changes to Downtown, as standing business transitioned to new industry and existing buildings were replaced. For example, Albert's Emporium became a Macy's in 1952, and the El Camino Theater was replaced with JC Penney's and was later razed.

[58] *Images of America: Early San Rafael, 37; and, Images of America: Modern San Rafael: 1940-2000, 9.*



Postcard of San Rafael looking east down Fourth Street from B Street, circa 1947 (Marin County Free Library. Anne T. Kent California Room)



Postcard of San Rafael looking east down Fourth Street from A Street, circa 1948 (Marin County Free Library. Anne T. Kent California Room)

In July of 1957 a massive fire destroyed the buildings on the block of Fourth Street between D and E Streets. The block was redeveloped soon after, beginning a new era of mid-century modern commercial development in Downtown.

On the site where “The Wonder” once stood, the Wells Fargo Bank at 1203 Fourth Street was constructed in 1964. An impressive example of mid-century bank architecture, the building stands in stark contrast to the surrounding buildings representing the late-19th and early-20th century development.



View looking west down Fourth Street from A Street, circa 1956 (Marin County Free Library. Anne T. Kent California Room)

A Postmodern Plan to Move Forward

Development of large department stores anchored new regional shopping centers at Northgate in Terra Linda and the Village in Corte Madera in the 1960s and 1970s, and eroded Downtown San Rafael's dominance as the County's retail destination. In 1962, completion of the Marin County Civic Center several miles to the north negated the need for a Downtown County building. The 1872 courthouse was destroyed by an arsonist in 1971.[59]

Major changes in Downtown continued into the 1970s, provoking a desire for historic preservation. In 1975 the City Council approved Chapter 2.18 – Historic Preservation in the San Rafael Municipal Code and established the Cultural Affairs Commission. In 1978 (updated 1986) the first survey of historic resources in San Rafael was completed and a number of landmark properties were identified Downtown. At this same time the San Rafael Redevelopment Agency formed, spearheading a campaign to restore and revitalize the aging buildings of Downtown.

Historic preservation efforts have continued in recent decades and are reflected in the Downtown Vision Plan adopted in 1993 and the General Plan 2020 adopted in 2004. This context has been developed in conjunction with the General Plan 2040, which will continue to advance efforts to preserve the built heritage of San Rafael.

Downtown Economic Decline and the Formation of the San Rafael Redevelopment Agency

By the late 1960's, Downtown experienced an economic decline in its retail businesses. This decline was largely attributed to the growing consumer draw of suburban shopping centers. Northgate Mall opened in 1964-1965 with the original anchor tenants being the Emporium and Sears.[60] Northgate represented the typical "everywhere suburbia" experience offering shopping in an open mall setting with acres of free and ample parking. The Downtown setting and smaller home-grown businesses could not complete with the larger department and chain stores that were drawn to the shopping centers.

During this time, many cities were taking advantage of the new State laws promoting redevelopment. These laws allowed cities like San Rafael to form a "Redevelopment Agency" to boost and finance urban renewal projects in areas experiencing decline or blight. The formation of a Redevelopment Agency provided a tool to issue tax allocation bonds, which are payable from property taxes that are collected from within a "project area." Promoting redevelopment within a "project area" results in an increased assessed valuation of properties within this area, further stimulating investment.

In June 1972, the City formed the "San Rafael Redevelopment Agency" (RDA). The "project area" for the RDA covered 1,770 acres (1,945 parcels), including Downtown (Central Business District), extending southeastward to the Canal neighborhood, the retail and industrial areas of Francisco Boulevard East and Francisco Boulevard West to the Richmond/San Rafael Bridge.

[59] *Images of America: Modern San Rafael 1940-2000, 69.*
[60] *Northgate Mall has also been named Northgate Fashion Mall, the Mall at Northgate*



Central San Rafael Redevelopment Plan Area, 1972

By November 1972, the Redevelopment Plan was completed and adopted (Ordinance 1079). The Redevelopment Plan introduced a land use map and four Redevelopment Activity Areas, which focused on recommendations for areas and properties suitable for: a) redevelopment and new development; b) rehabilitation and infill; c) conservation; and d) open space. For Downtown, the Redevelopment Plan presented a series of actions including, among others, investing in public realm improvements (street tree planting, pedestrian pavement and street corner improvements, and new parking facilities). The "New Commercial" Action focused on development sites such as the 15.5-acre PG&E property south of Second Street (now the San Rafael Corporate Center, BioMarin campus) and redevelopment of underdeveloped or blighted sites. The Redevelopment Plan included a Financial Program, which estimated project costs and sources of funding.

Following adoption of the Redevelopment Plan, the RDA was instrumental in molding many changes to Downtown San Rafael without significantly changing its historic "bones." The RDA used resources such as State and Federal funds, grants, and loan programs coupled with bond proceeds to implement the Development Plan over the next 45 years. One example is the pedestrian and streetscape improvement program, which resulted in bulb-outs with tree planting at intersections and brick sidewalk pavers along Fourth Street. This initial program was installed along Fourth Street from Grand Avenue to E Street as well as some selected side streets (see below).



Illustrative of Fourth/Court St Improvements, Redevelopment Plan, 1972



Current, built improvements at Fourth and Court Streets

A subsequent Fourth Street tree planting program was funded and implemented through the RDA in the 1990's, which resulted in the development of the current, regimented tree canopy. To replicate the pedestrian and streetscape program of landscape bulb-outs and brick sidewalk pavement along Fourth Street, in the early 2000's funding was secured to extend this program on Fourth Street from E Street to the Miracle Mile.

In the early 1980's, the RDA administered a very informal incentive program that offered advice to property owners and businesses on storefront improvements. The primary goal of the program was to seek business compliance with the City's sign ordinance but to also offer design advice on storefront design and restoration. While most of storefront improvements that were implemented involved new signage, awning additions and painting, some property owners opted to restore their storefronts to near original design. One example is 919 Fourth Street.



919 Fourth Street with restored transom and glass/upper storefront

Common tools such as property purchase and assemblage fostered redevelopment of key properties in Downtown from the late 1970's until the RDA was dissolved in 2012. Once property was negotiated and assembled, the RDA would employ measures such as a developer request for proposal or a direct partnership with a single developer. The following are key redevelopment projects that were built from the early 1980's through the early 2000's.

The May Building located at the southeast corner of Fourth and A Streets was destroyed by fire in 1979. The RDA coordinated a site redevelopment. This being a key intersection in Downtown, developers participated in a design competition for the rights to develop the site.

The initially preferred concept design called for placing a seven-story building stepping back from Fourth & A Streets but it was deemed too imposing (schematic below). Ultimately, the City opted to approve a more conventional building design with the building offering two levels of retail below two levels of office (built project below). The two levels of retail offered by this design was an attractive incentive, but the split-level storefront has been marginally successful.



Original Redevelopment Proposal – Fourth and A Streets



Built project at Fourth and A Streets

As recommended by the Redevelopment Plan, the RDA invested in the development of a new, multi-level parking garage located at the corner of 3rd and B Streets. Like the Fourth and A Street project, the parking garage design was selected as part of a developer competition. Although the parking structure design would win no design awards, this developer was selected because the project included a street level storefront of retail space along the A Street frontage. This retail space is the home of Il Davide Restaurant and Duxiana Mattress and Bedding (see storefront photo).



A Street retail and 3rd & B Street parking garage

Until the mid-1990's, Pacific Gas & Electric (PG &E) Company had a prominent presence in the southeast portion of Downtown San Rafael. Occupying 15-20 acres south of 3rd Street, PG &E utilized the area for service operations (including gas processing in the early 20th century). Most of the operations were moved to PG &E property on Andersen Drive or phased-out, which freed-up this land for redevelopment. The Redevelopment Plan called for an office and parking uses, then subsequently changed to a retail shopping center. In the mid-1990's the RDA worked with PG &E to negotiate a sale of the holdings south of 2nd Street. Fair Isaac Corporation obtained approval to build a 400,000 square foot office campus. The office campus has been built is and now owned and occupied by BioMarin Phamecuitcal, a biotechnology company.



BioMarin Campus – San Rafael Corporate Center

By the mid-1980's, Macy's closed its doors and became the last casualty of the department stores that once occupied and thrived in Downtown. However, the RDA was swift in negotiating purchase of the property with the owner, and ultimately the site sold to a local developer. The Rafael Town Center, a six-story mixed use development was constructed, and Court Street was redeveloped as a pedestrian plaza.



Macy's at Fourth and Court Streets, 1972



Fourth and Court Streets, 2020



Rafael Town Center, 2020

Due to major changes and cuts in the State budget, all Redevelopment Agencies were dissolved by 2012. Most of the roles and responsibilities of the San Rafael RDA were taken over by a newly formed Successor Agency (City Council), but much of the funding and grant programs that were linked to redevelopment were no longer available.

Representational Property Types

Transportation

Railroad Buildings
720 (728) A Street – Northwestern Pacific Railroad Station (1915-1928)
930 Tamalpais – Northwest Pacific Railroad Depot – (1929)

Automobile-Related
866 Fourth Street (1921)

Spanish Colonial Revival
827-831 Fourth Street (1923)

Mid-Century Modern Auto
1848 Fourth Street (1947)
1714 Fourth Street (1951)
1531 Fourth Street (demonstrates the clear shift towards auto oriented construction in San Rafael) (1930)
740 A Street
707 C Street (1952)

Institutional

Religious
Victorian Gothic
1123 Court Street – St. Paul's Episcopal Church, W.A. Boyd, architect (1869)

Neo-Classical Revival
1618 Fifth Avenue (1910)

Spanish Colonial Revival
San Rafael Mission Arcángel – recreation – (1949)

Education
901 E Street - E Street School (1936)

Civic

Carnegie Library – San Rafael Public Library (1904-09)
1800 Fifth Avenue – San Rafael Improvement Club (c. 1915)

Commercial

Vernacular
1221 Fourth Street (1872)

844-48 B Street (1890)
802-6 Fourth Street (1892)
1325 Third Street (1910) – Originally farm house and barn
1200-16 Fourth Street – 1009 B Street (1917) – Aileen Apartments
1553 Fourth Street (1920-25)
1203 Fourth Street – Wells Fargo (1964)

Italianate
1321 Fourth Street (1871)
1225 Fourth Street (1875-85)
1310 Fourth Street (1880)
1149 Fourth Street/938 B Street (1883)
810 B Street (1894)
924 B Street (1898)

Eastlake (Stick-Eastlake)
840 B Street (1881)
724 B Street - Flatiron (1883) (1886- DPR)
709 Fourth Street (1889)

Second Empire
1330 Fourth Street (1879)

Spanish Colonial Revival
801 Fourth Street (1900)
1447 Fourth Street (1916)
917-921 Fourth Street (1920)
1850 Fourth Street (1925)
927 Tamalpais – Barrel House (1925)

Queen Anne
1240 Fourth Street (1893)

Neo-Classical
881 Fourth Street (1905)
1010 B Street – Albert Building – (1920)
1300 Fourth Street (1928) – Bank of Italy/Bank of America - Oscar Mohr (Architect), David Paganini (Builder)

Renaissance
813-819 Fourth Street (1908)

Mission Revival
California was the birthplace of the Mission style. The earliest examples were built in the 1890s, and the style spread westward in the 1900s. The style appears in house plan books such as

those of Sears Roebuck and Co. that sold plans for Mission style called the Alhambra (1910). Identifying features of the Mission style include: "Mission-shaped dormer or roof parapet; commonly red tile roof covering, widely overhanging eaves, usually open porch roofs supported by large, square piers, commonly arched above, wall surface usually smooth stucco."[61] Principal subtypes are distinguishable in the symmetrical and asymmetrical. Variants and details include shaped dormers and parapets mimicking those found on Spanish Colonial Mission buildings, prominent one-story porches, and arched roof supports to simulate the arcades of Hispanic buildings. Occasionally Mission-like bell towers occurred on some examples. Windows are usually double-hung and grouped together. Some examples have visor roofs that most commonly occur beneath the parapets of flat roofs.[62]

1533 Fourth Street
1852 Fourth Street - The style appears in house plan books such as those of Sears Roebuck and Co. that sold plans for Mission style called the Alhambra (1910)
1605 Fourth Street
1555 Fourth Street
926 Fourth Street
926-930 B Street (1914)
812 Fourth Street (1920)

Hotels
1222 Fourth Street – The Central Hotel (1859)
901 B Street – Delmonico House Hotel (1876-77)

Mid-Century
1030 Third Street - is a classic example of Modern Commercial architecture designed and constructed by John Carl Warnecke (1963)

Recreation/entertainment
1118 Fourth Street – Rafael Theatre – (1938)

Residential
1130 (1120) Mission Avenue – "Coleman House" (1849-52)
1627 Fifth Avenue (Victorian Village)
1623 Fifth Avenue (Victorian Village)

Queen Anne (1880-1910)
Characterized by asymmetric massing, steeply pitched roofs with irregular form, projecting porches, and a profusion of decorative detail. Scrolled brackets, turned porch posts, shingle siding in a variety of shapes, and cutaway window bays were among the styles most common ornamental features.

[61] Viriginia Lee McAlester, *A Field Guide to American Houses*, (New York: Alfred A. Knopf, 2013), 510-518.
[62] Ibid.

710 Mission Avenue (c. 1900)
823-825 Mission Avenue (1881)
1135 Mission Avenue (1891)
637 Fifth Avenue (1892 – 94)
633 Fifth Avenue (1892)

Queen Anne Cottage
808 A Street (c. 1890)
1011 Irwin Street (1907)
810 E Street (1910

Transitional Queen Anne (Late Queen Anne/Shingle)
918 Fifth Avenue (1896)

Shingle
1505 Fifth Avenue (1903)
1110 Lincoln Avenue (1907)
705 Mission Avenue (1904-06)

"Bay Area Shingle"
1635 Fifth Avenue (1903)

Stick/Eastlake
907 Mission Ave (1880)
828 Mission Ave (1884)
1607 Fifth Avenue (1883)
1517 Fifth Avenue (1889)

Colonial Revival
1104 Lincoln Avenue (1906)

Gothic Revival
1629 Fifth Avenue (1850s - 1875)

Tudor Revival (rare in San Rafael)
1539 Fifth Avenue (1923)

Craftsman
30 Latham Street (1928)

Hipped Roof Cottage
1301 Second Street (1907)
1215 Second Street (1916)

3. Methodology

Overview

This section of the Historic Resources Report describes the methodology used to complete the 2019-2020 Survey. It includes the criteria used to evaluate properties and describes the field surveys completed through this effort.

Evaluation Criteria

The criteria used to evaluate Downtown resources align with the Criteria for Designation established by the California Register of Historic Resources (CRHR). These include:

- Criterion 1: Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- Criterion 2: Associated with the lives of persons important to local, California or national history
- Criterion 3: Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.
- Criterion 4: Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The survey focus was on Criterion 3 since the field work was structured to document visual conditions. Where archival records and research documents were available on Criteria 1, 2, and 4, these factors also were considered.

The Survey

The starting point for the historic resources survey was the *San Rafael Historical/Architectural Survey* published in 1986. That report updated a 1977 inventory and identified 305 properties throughout the City, including the street address, the common name of the property or building, and a classification of the resource as good, excellent, or exceptional. Ninety-two of the 305 properties in the Survey are within the boundary of the Downtown Precise Plan Area.

There are 14 properties in the Precise Plan area that currently have landmark status.[1] Of this total, six properties are listed as individual local historic landmarks, seven fall within two

[1] There is a discrepancy in the roster of local landmarks, as the Chisolm House and Schlosser-Cole House are identified (with different addresses) as being on the same parcel. The Chisolm House is noted as 1505 Fifth Avenue and the Schlosser-Cole House as 1023 E Street. 1505 Fifth Avenue was formally re-addressed as 1099 E Street (corner of 5th and E) and was landmarked in December 1979. It is the Schlosser-Cole House. Christopher Chisolm resided at 1517 Fifth Avenue, which has never been formally landmarked.

designated historic districts (French Quarter and Victorian Village), and one (Mission San Rafael Arcangel) is a California Historical Landmark that is not on the local or national registers. Two of the individual local landmarks are also on the National Register of Historic Places (Boyd House and San Rafael Improvement Club). It is worth noting that a number of National Register landmarks and several locally designated landmarks fall just outside the Precise Plan boundary, including the Falkirk Mansion.

Properties that currently have landmark status were excluded from the survey, as they already have protected status. As noted in Chapter 1 and illustrated in Figure 1-2, several geographic areas were excluded from the survey due to limited resources and the fact that changes in these areas are unlikely in the next 20 years. In the event future projects are proposed in these areas, further evaluation of historic resources may be required.

These exclusions left a balance of 572 properties within the Precise Plan boundary, including:

- 79 properties already listed in the San Rafael Historical/Architectural Survey (Survey), 41 of which were determined to need re-evaluation
- 344 properties with listed construction dates of 1969 or earlier
- 149 properties without listed construction dates, for which additional research was required

A field assessment was made for each property, documenting its apparent build date, condition and level of integrity. Of the 572 properties surveyed, 97 were identified as vacant lots or recent construction and were eliminated from further consideration. This left 475 properties for further evaluation.

Archival research was performed by City staff for roughly 400 of the 475 properties. The focus of this research was to determine the date of construction where this information was unavailable, and to review building permit records and other property records. These records indicate the extent to which buildings have been altered over time, including historic photos, blueprints and plans, and staff reports prepared over the past several decades. Information was recorded in Excel spreadsheets. This work generally took place in December 2019.

At approximately the same time, field survey work took place under the leadership of Garavglia Associates. The consultant provided training to several volunteers from San Rafael Heritage and accompanied the volunteers on walking surveys of Downtown blocks. All survey work was done on foot and considered the exterior of the building only. Notes and digital photographs were taken as needed for each property.

Using both the archival records and the field survey, a shortlist of 160 properties was created for further assessment. These properties were identified as having some degree of historic integrity, and the potential to be historic landmarks or district contributors. Limited research was provided for each structure.

Notable concentrations of historic resources in geographic proximity to each other were evaluated for their eligibility as historic "districts." Where a potential district was identified, properties within that district were identified as individual resources, contributing resources, or non-contributing resources. Contributing resources fall within the period(s) of significance identified for the district, and present character-defining features unique to the property and district.

A project professional reviewed the survey forms and accompanying digital photographs, evaluating each property for its significance and integrity. The project professional also assessed whether each resource appears to potentially contribute to a historic district nomination or multiple resource nomination to the California Register of Historic Places, or appears to be potentially eligible individually under one of the California Register criterion. She assigned each resource an internal classification as follows:

"A" was assigned to structures that were deemed individually eligible as resources
"B" was assigned to structures deemed to be contributors (within an area eligible for listing as a district)
"C" was assigned to properties where additional research was needed
"D" was assigned to properties that appeared not to meet eligibility criteria
"E" was assigned to properties determined to be ineligible as historic resources

Many of the structures given "D" and "E" ratings date to the late 19th Century. However, these structures have diminished historic integrity due to unsympathetic additions and alterations. They generally fail to meet Secretary of the Interior criteria.

The findings of this evaluation are reported in Chapter 4. A total of 48 new resources (i.e., resources not currently listed on the 1977/1986 inventory) were identified as eligible. In addition, two areas with concentrations of multiple historic resources were identified as eligible historic districts. Properties within each district were further identified as individual resources, contributors, or non-contributors.

A "fact sheet" was developed for each of the 160 properties on the shortlist. The fact sheets are presented as Chapter 5 of this report. It is important to note that the fact sheets include properties determined to be eligible (e.g., the "A"s and "B"s), and properties found to need more research (the "C"s) or ineligible (the "D"s, and "E"s). About 57 percent of the properties in the fact sheets were found eligible as either individual resources or contributing resources.

Garavaglia Associates prepared California Department of Parks and Recreation Primary Records and Building Records (DPR523A and DPR523B forms) for selected properties in the surveyed area, including a written evaluation of potential individual and district eligibility. Of the properties for which DPR forms were prepared, 28 are in the Transit Station area, 31 are in the Downtown Core, 10 are in the West End Village and none are in the Montecito Commercial area.

The DPR forms are included as Appendix “B” to this report. As noted in Chapter 1, forms were primarily prepared for resources that had not been catalogued as eligible in the 1977/1986 surveys, although a few of these properties were resurveyed.

4. Survey Findings

Overview

This section of the Historic Resources Report presents the findings of the Historic Resources Survey, including tabular listings of the properties in several different resource categories and in different geographic areas. Figures 4-2 through 4-5 show the information spatially for the four subareas that comprise the Plan Area.[1] Accurate and consistent tallies of the number of resources are complicated by the fact that some parcels contain multiple structures. Some parcels contain more than one eligible historic resource and others contain a combination of eligible and non-eligible resources. Parcel lines have also been adjusted over time, and numerous properties have been re-addressed.

Categories

The Survey Findings are presented using the following categories:

a. Previously Designated Historic Landmarks (7 structures, 9 parcels)
b. Previously Designated Historic Districts (7 structures, 2 parcels)
c. Eligible New Historic Districts (2 districts)
    i. Individual Resources (28 structures, 28 parcels)
    ii. Contributing Resources (20 structures, 19 parcels)
d. Individual Resources Outside of Potential Historic Districts (38 structures, 38 parcels)
e. Resources Requiring Additional Research
f. Structures Removed from 1977/1986 Inventory
g. Parcels With no Historic Resources

The properties in categories "c" and "d" above are further divided into those that were identified as historic resources in 1977/1986 and those that were newly added in 2019-2020.

Previously Designated Historic Landmarks

Table 4-1 indicates previously designated historic landmarks in Downtown San Rafael. There are two properties on the National Register of Historic Places: the Boyd House (1125 B Street) and the San Rafael Improvement Club (1800 5th Ave).[2] There is one property that is a designated California Historic Landmark—Mission San Rafael Arcangel (1104 5th Ave). The Boyd House and San Rafael Improvement Club are also locally listed—the Mission is not.

[1] As noted in Chapter 3, a few small areas of Downtown were not surveyed (see Figure 1-2). Resources identified in the 1986 Survey are shown in these areas, but additional resources may be present in these areas. Projects in these areas may be subject to requirements to provide additional documentation on historic resources.
[2] The Bradford House and Falkirk Mansion/ Robert Dollar Estate are just outside the Plan Area boundary.

Four other Downtown properties were listed by the City of San Rafael in the 1970s and 1980s but are not formally listed at the state or national levels. These are the Mulberry House/ McDermott Building at 1149 Fourth Street/938 B Street (listed 1984); the Chisolm Residence (see footnote at bottom of page); the Cole-Schlosser Residence (originally shown to be 1023 E Street but re-addressed as 1099 E Street, listed 1979), and the Flatiron Building (724 B Street, listed 1982).

Table 4-1: Previously Designated Historic Landmarks in Downtown San Rafael([3])

	APN	Address	Common Name	National Register	California Landmark	San Rafael Landmark
1	011-131-03	1125 B St	Boyd House	X		Listed 1974
2	010-291-16	1801 Fifth Av	San Rafael Improvement Club	X		Listed 1980
3	011-213-12 011-213-16 011-213-19	1100-1104 Fifth Av	Mission San Rafael Arcangel		X	Not Listed
4	011-261-01	1149 Fourth St	Mulberry House/McDermott			Listed 1984
5	011-202-06	1099 E St	Schlosser-Cole Residence			Listed 1979
6	See note below		Chisolm Residence			Status Unclear
7	013-011-05	724 B St	Flatiron Building			Listed 1982

Previously Designated Historic Districts

There are two locally-designated historic districts in the Plan Area. Each of these districts consists of a single tax assessor parcel with multiple structures:

- French Quarter consists of five listed structures (901, 903, 905, 907-09, 911 Irwin Street) on a single parcel (APN 014-122-14). Structures were observed as being in good condition.

- Victorian Village consists of two listed structures (originally addressed as 1623 and 1627 Fifth Avenue but subsequently re-addressed as 1623, Units 1-4 through a condominium map filing). Structures were observed as being in excellent condition.

Eligible Historic District: West Downtown Core

Through the 2019-20 survey, a concentrated area of historic resources was identified in an irregularly shaped area of San Rafael's Downtown Core roughly extending from 2nd and B Street

[3] *There are conflicting records for Item 6 on this list. The 1977/86 inventory identifies the Chisolm Residence as being at 1505 Fifth Ave. That property was subsequently readdressed as 1099 E Street, which is the Schlosser-Cole Residence. The Chisolm property is potentially 1517 5th Avenue (APN 011-202-04), former home of Christopher Chisolm. However, the 1977/86 survey rated that property as "Good" rather than "Excellent" or "Exceptional" which would have made it ineligible for landmark status.*

to 5th and E Street. This area is shown in Figure 4-1. The District includes 87 parcels. Of this total:

- 4 parcels contain existing landmarked buildings
- 18 contain individually eligible resources
    - 13 of these resources were initially identified in the 1977/1986 survey
    - 5 of these resources were newly identified as eligible in the 2019 survey
- 16 contain contributing resources
    - 7 of these resources were initially identified in the 1977/1986 survey
    - 9 of these resources were newly identified as eligible in the 2019 survey[4]
- 8 contain resources that were identified as good or excellent in 1977/1986 but no longer meet eligibility criteria
- 42 contain non-contributing resources or are undeveloped

The area was determined to be eligible as a Commercial/ Civic Historic District under Secretary of the Interior Criterion 1/A for its historical associations and under Criterion C/3 for its architecture. Its "Period of Significance" spans a period of seven decades beginning in the mid-1880s, when construction began on its Victorian-era commercial buildings as well as substantial nearby residences. These buildings were frequently architect-designed and were both larger and more impressive than San Rafael's earliest stores and houses. Commercial buildings were usually designed with two stories and features like corner towers and main facade parapets to make them appear taller. Decorative elements such as cornices with elaborate brackets and dentil molding and expensive materials like brick conveyed San Rafael's regional importance. The area's buildings reinforced the city's position as the county seat to residents who traveled there from all over Marin County to shop and conduct official business. San Rafael's predominance among other nearby towns created wealth, allowing merchants, hoteliers, and saloon-keepers to construct large, architecturally significant residences on the edges of Downtown.

San Rafael retained a position of regional importance in the early 20th Century. Architectural styles changed, while the City's growth accelerated after an influx of refugees from the San Francisco Earthquake of 1906. Important early twentieth-century commercial buildings include the four-story Classical Revival Albert Department Store, the first high-rise in San Rafael. Substantial residential buildings from the period are as carefully designed as their Victorian-period counterparts while exhibiting new residential styles such as Craftsman.

San Rafael became more automobile-oriented and connected to San Francisco with the opening of the Golden Gate Bridge in 1937. Notable buildings from the post-bridge era include the Art Deco Rafael Theater. Modernist commercial buildings of the early postwar era convey Downtown San Rafael's transition to a more localized center as its residential neighborhoods expanded and the County Courthouse and administrative functions moved to North San Rafael.

Table 4-2 indicates the status the parcels within the boundaries. Where appropriate, the table notes where a DPR 523 form has been prepared as part of the 2019-2020 survey.

[4] Two of the contributing resources are individual buildings on parcels with more than one structure.

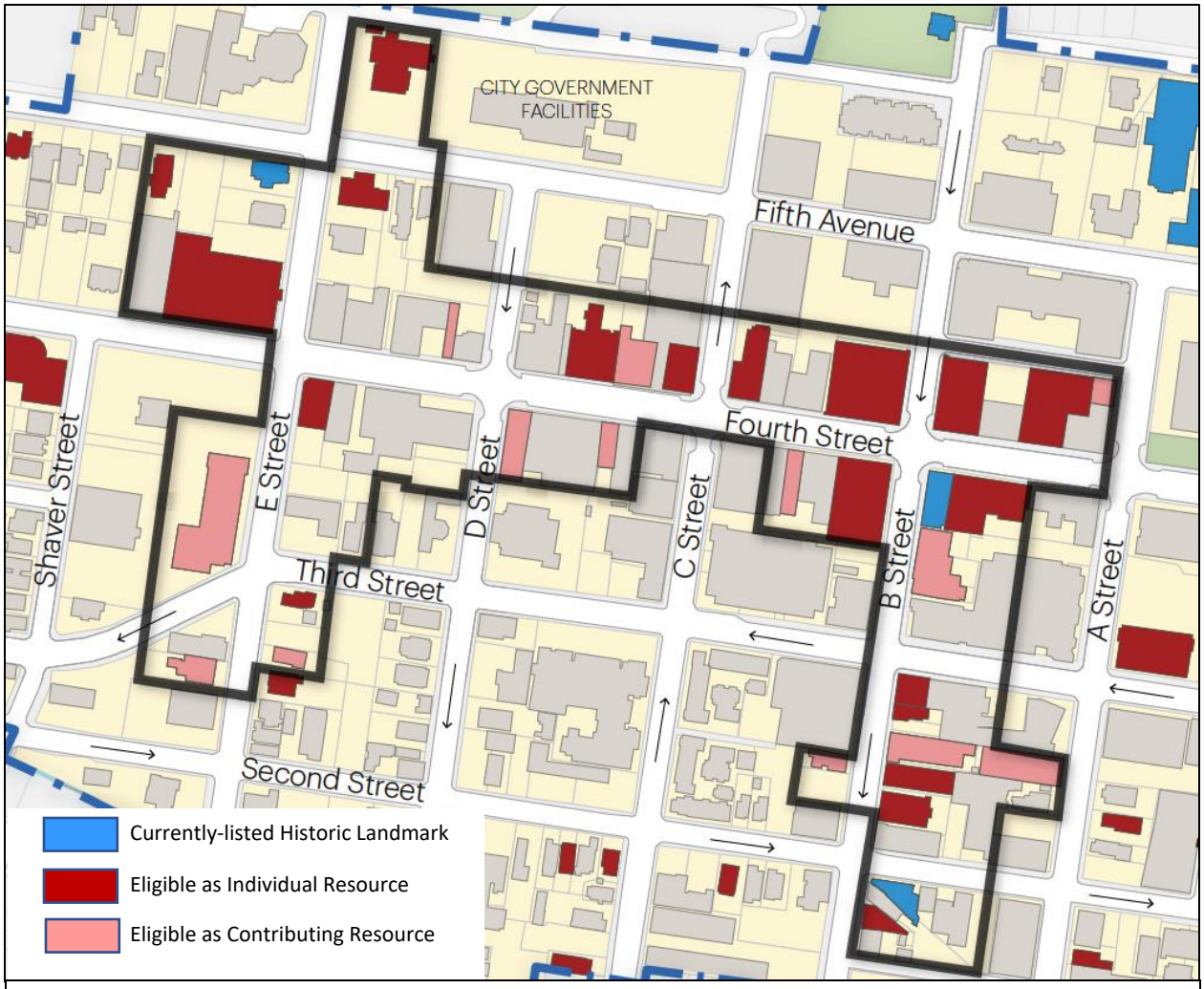


Figure 4-1:

Eligible West Downtown Core Historic District

Table 4-2: Status of Parcels within the Historic West Downtown Core Area

#	APN	Address	Common Name/ Notes	Rating in 1977/1986 Survey	Newly Added Through 2019 Survey?
Existing Landmarks (listed in Table 4:1): (1) Mulberry House/McDermott Bldg; (2) Chisolm Residence—see footnote on Page 4-2; (3) Cole-Schlosser Residence; (4) Flatiron Building					
Eligible as Individual Resource					
5	011-204-01	1022 E St	Keaton's Funeral Home	Good	--
6	011-202-14	1504-1512 Fourth/ 1009 E	Retail Fourth and E NW corner	*	Yes, with DPR
7	011-203-01	1100 Fifth Av	Public Library	*	Yes
8	011-251-11	1447 Fourth St	Gathering Thyme/ Tam Vista Dentistry	Good	--
9	011-205-11	1330 Fourth St	Mahon House (retail@ground)	Exceptional	--
10	011-205-08	1300 Fourth St	Bank of Italy/Tam Commons	Exceptional	--
11	011-212-14	1000-1016 C, 1240-44 Fourth	Amicis/ Peters Bldg	Exceptional	--
12	011-212-05	1200-1212 Fourth/ 1009 B	Scandinavian Design	Good	DPR Prepared
13	011-255-23	1203 Fourth St	Wells Fargo	*	Yes, with DPR
14	011-215-01	1130-1136 4th/ 1010-1018 B	Albert Building	Good	--
15	011-215-04	1118 Fourth St	Rafael Theater	Exceptional	--
16	011-261-31	1121-1139 Fourth St	Wilkins Hotel/ retail	*	Yes
17	011-262-01	842-848 B/ 1117 3rd	Spitfire/ Mini-Market	Excellent	DPR Prepared
18	011-262-21	836-840 B St	Players Guitars	Excellent	--
19	011-262-15	820-822 B St	St. Vincent De Paul	Good	--
20	011-262-14	810-816 B St	Amber Kitchen/Antiques	Excellent	--
21	013-011-02	720 B St	Saigon Village	*	Yes, with DPR
22	011-252-21	824 E St	Polaris Greystone Financial	Excellent	--
Eligible as a Contributing Resource					
23	011-204-09	1408 Fourth St	Café del Soul/ Office	*	Yes
24	011-245-27	901 E St	Converted School/Office	*	Yes
25	011-246-08	807-811 E St	Residential	Good	--
26	011-252-27	814 E St	Residential	Excellent	--
27	011-253-01	1345 Fourth St	T&B Sports	*	Yes
28	011-253-03	1321 Fourth St	Folk Art Gallery	Exceptional	--
29	011-205-10	1314-1318 Fourth St	Shoe repair/Coffee roaster	*	Yes
30	011-261-01	936 B(same parcel as 1149 4th)	Nail salon/ same parcel as Mulberry	*	Yes
31	011-261-13	930 B St	Garzoli Gallery	Good	--
32	011-261-12	920-924 B St	Libation Taproom	Good	--
33	011-261-20	916 B St	El Perol Restaurant	*	Yes
34	011-256-09	821-823 B St	Uchiwa Ramen	Good	--
35	011-262-16	826-832 B St	Haircuts/ Residential	Good	--

Table 4-2, continued

#	APN	Address	Common Name/ Notes	Rating in 1977/1986 Survey	Newly Added Through 2019 Survey?
Eligible as Contributing Resource, Continued					
36	011-262-06	813-819 A St	Foam Store	*	Yes
37	011-255-28	1219-1225 Fourth St	Gamescape, etc (multiple buildings on parcel. 1219-1221 not included)	Good	--
38	011-215-05	1007-1011 A St	Office/ spa (multiple buildings on parcel; this is the A St structure only)	Good	--
Listed as Eligible in 1977/86, but not in 2019					
39	011-204-16	1018 E St	House converted to office	Good	Rated "E"
40	011-204-19	1415 Fifth Av	Belrose Theater	Good	Rated "E"
41	011-253-02	1325-1335 Fourth St	Artworks/former Gordon Opera	Exceptional	Rated "D"
42	011-205-09	1310 Fourth St	Pleasures of the Heart Retail	Excellent	Rated "E"
43	011-212-06	1222-1230 Fourth St	Central Hotel/MyThai	Good	Rated "E"
44	013-011-06	1115 Second St	BBC Construction	Good	Rated "E"
45	011-253-04	1313-1315 Fourth St	Tenkuyu Restaurant	Good	Bldg Replaced
46	011-262-03	802-804 B St	Law offices	"Demolished"	Bldg Replaced

Notes: (*)= Not shown as eligible in 1977/86

Eligible Historic District: East Downtown Core

Through the 2019-20 survey, a second concentrated area of historic resources was identified in a rectangular shaped area of San Rafael's Downtown Core roughly extending from Court Street to Lincoln Avenue along both sides of Fourth Street. This area is shown in Figure 4-3. The District includes 26 parcels. Of this total:

- 10 contain individually eligible resources
  - 6 of these resources were initially identified in the 1977/1986 survey
  - 4 of these resources were newly identified as eligible in the 2019 survey
- 4 contain contributing resources
  - 1 of these resources was initially identified in the 1977/1986 survey
  - 3 of these resources were newly identified as eligible in the 2019 survey[5]
- 1 contains resources that were identified in 1977/1986 but no longer meet eligibility criteria
- 11 contain non-contributing resources

[5] *Two of the contributing resources are individual buildings on parcels with more than one structure.*

Table 4-3 indicates the status the parcels within the boundaries. Where appropriate, the table indicates where a DPR 523 form has been prepared as part of the 2019-2020 survey.

The East Downtown Core area is eligible under Secretary of the Interior Criterion 1/A for its historical associations and under Criterion C/3 for its architecture. Its "Period of Significance"—1898 to 1930—reflects the gradual expansion of San Rafael as commercial activity radiated outward from the Mission and Courthouse areas. Commercial buildings in this area were frequently architect-designed; they are one or two stories and occupy their entire lots. Several late Victorian-era storefront buildings are interspersed with more numerous examples of early twentieth century styles, predominantly Mission and Art Deco. Some of the later buildings feature built-in garage doors reflecting San Rafael's shift toward the automobile after 1920.



Figure 4-2:

Eligible East Downtown Core Historic District

Table 4-3: Status of Parcels within the Historic East Downtown Core Area

#	APN	Address	Common Name/ Notes	Rating in 1977/1986 Survey	Newly Added Through 2019 Survey?
Eligible as Individual Resource					
1	011-224-18	1010 Lootens, 882-890 Fourth	Masonic Bldg (res over retail)	Needs Study	DPR Prepared
2	011-224-11	812 Fourth St	Former Pizza Orgasmica	Good	--
3	011-273-04	813-819 Fourth St	Theresa and Johnny's/ other retail	Good	--
4	011-273-02	827-831 Fourth St	Fencing Academy/ Jewelers	Good	DPR Prepared
5	011-271-04	877 Fourth St	Angel Antiques/ Sacred Tibet	*	Yes, with DPR
6	011-271-03	881-83 Fourth St	Vin Antico	Good	DPR Prepared
7	011-271-02	885-87 Fourth St	Zhu Restaurant	*	Yes, with DPR
8	011-263-08	917-921 Fourth St	Fenix Nightclub	*	Yes
9	011-263-07	923-925 Fourth St	Boiadeirus Brazilian Steakhouse	Good	DPR Prepared
10	011-263-06	931-941 Fourth St	San Rafael Joe's	*	Yes
Eligible as a Contributing Resource					
11	011-224-15	846-850 Fourth St	Pottery (Glaze and Confused Gallery)	*	Yes, with DPR
12	011-224-14	842 Fourth St	George's Night Club	*	Yes, with DPR
13	011-224-13	836 Fourth St	Mike's Bikes	*	Yes, with DPR
14	011-224-10	806 Fourth/ 1001-05 Lincoln Av	Residential above market	Good	DPR Prepared
Listed as Eligible in 1977/86, but not in 2019					
15	011-224-20	854-866 Fourth St	1986 survey noted Fifth Av façade was eligible, but that is outside the District	Good	Rated "E"

Notes: (*)= Not shown as eligible in 1977/86

Individual Resources Outside of Eligible Historic Districts

For analysis purposes, the remaining areas of Downtown are discussed in three geographic areas: West End Village, Downtown Core (outside Districts), and the Transit Gateway area (particularly 5th Avenue, Mission Avenue, and cross-streets in the SMART rail station area).

West End Village

As noted earlier, West End Village includes a National Register Historic Landmark (the San Rafael Improvement Club at 1800 Fifth Avenue) and a designated local historic district (Victorian Village at 1623-1627 Fifth Avenue). The 2019-20 historic survey identified 13 additional individually eligible historic resources in this area. Of this total, four had been previously identified in the 1977/1986 survey and nine are newly identified. This subarea also includes four properties that were listed in the 1977/1986 survey that are in excluded from the survey.

Table 4-4 summarizes historic resource in the West End Village, including properties for which DPR forms were prepared in 2019. Figure 4-3 below shows the location of these resources.

Table 4-4: West End Village Historic Resources (excluding landmarks listed in Table 4-1)*

#	APN	Address	Common Name/ Notes	Rating in 1977/1986 Survey	Newly Added Through 2019 Survey?
1	011-194-01	1629 Fifth Ave	Residence	Good	--
2	011-194-02	1637 Fifth Ave	Residence	Excellent	--
3	011-196-05	1539 Fifth Ave	Residence	*	Yes, with DPR
4	011-242-11	1531 Fourth St	Cains Tire	*	Yes, with DPR
5	011-242-10	1533 Fourth St	Mayflower Pub	*	Yes, with DPR
6	011-242-04	1553-57 Fourth St	Ground floor stores/ apts above	Good	DPR Prepared
7	011-241-32	1605-09 Fourth St	LaCrosse, Flooring, Salon, Bookstore	*	Yes, with DPR
8	011-241-01	1617 Fourth St	Johnny's Doughnuts	*	Yes, with DPR
9	011-232-03	1701 Fourth St	Red Dragon Yoga	*	Yes, with DPR
10	011-192-08	1714 Fourth St	Jack Hunt Auto	*	Yes, with DPR
11	010-291-35	1848 Fourth St	Pond Farm	*	Yes, with DPR
12	010-291-57	1850-1852 Fourth St	Office / gr floor store	Good	DPR Prepared
13	011-242-22	30 Latham St	Residence	*	Yes, with DPR
West End Village Properties Inventoried in 1977/1986 Survey, Located in Areas Not Surveyed in 2019					
14	011-243-03	11 Latham St	Residence	Good	Not Listed
15	011-241-26	6 G Street	Residence	Good	Not Listed
16	011-232-07	11 G Street (prev 3 G)	Arriverdici Restaurant	Good	Not Listed
17	011-196-02	1607 Fifth Av	residence	Good	Not Listed

Notes: (*)= Not shown as eligible in 1977/86; *Table excludes properties outside Precise Plan boundary, incl. north side of Fifth Av*

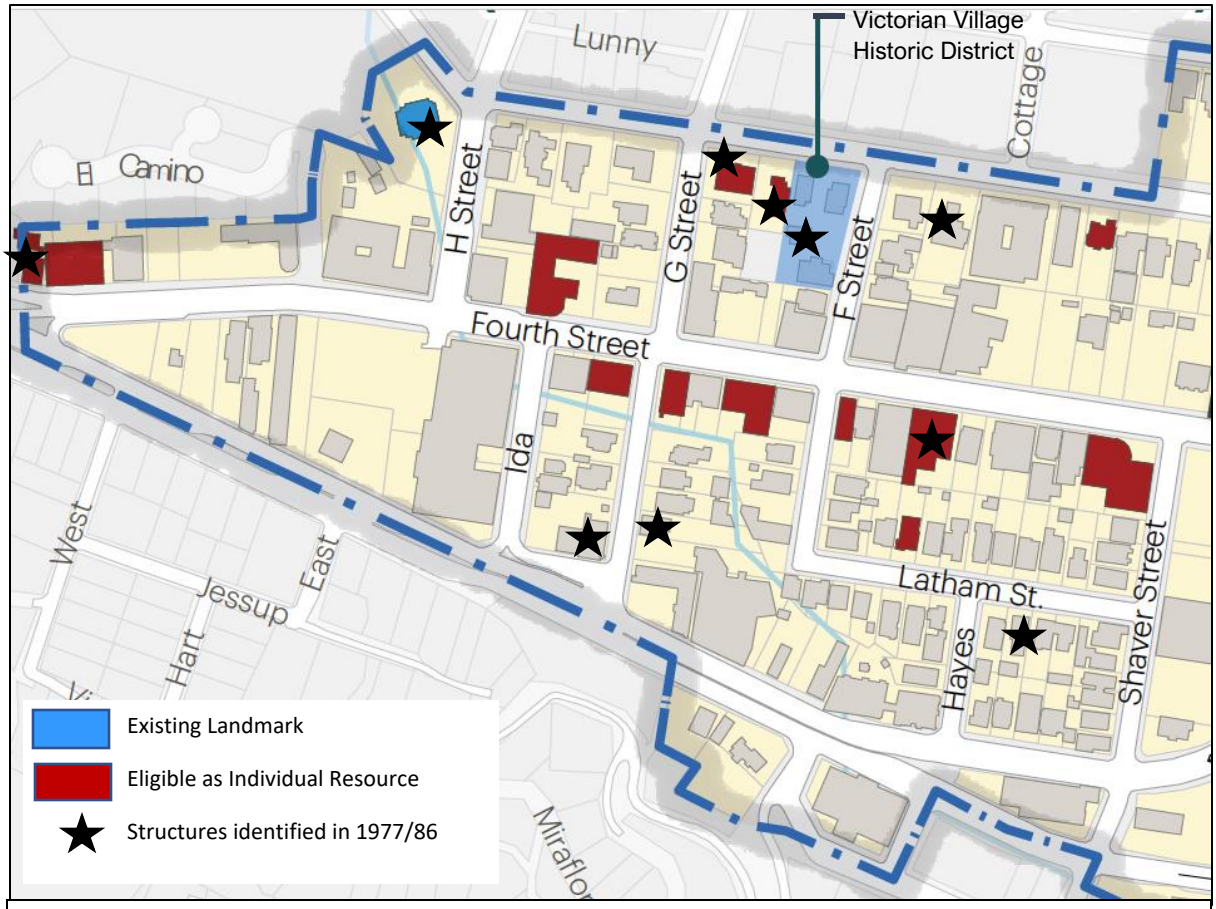


Figure 4-3:

Historic Resources in West End Village

Downtown Core, Outside Districts

The historic resources survey identified ten (10) individually eligible resources in the Downtown Core area outside of the eligible historic districts described earlier. These properties are all located between E Street on the West, A Street on the east, 4th Street on the North, and 1st Street on the South. Resources in this area are shown in Figure 4-4 and are listed in Table 4-5. Most of these properties are residences; a few are commercial buildings.

Two of the 10 properties in this area were initially identified in the 1977/1986 survey and eight are newly eligible. Figure 4-4 and Table 4-5 also include four properties that had been included in the 1977/1986 survey but were determined to be ineligible during the 2019/20 survey.

Table 4-5: Downtown Core Historic Resources outside of Eligible Districts (excludes Landmarks)

#	APN	Address	Common Name/ Notes	Rating in 1977/1986 Survey	Newly Added Through 2019 Survey?
1	012-073-07	1301 Second St	Residence	*	Yes, with DPR
2	012-075-03	1215 Second St	Residence	*	Yes, with DPR
3	013-012-20	740 A St	Drummers Tradition (store)	*	Yes, with DPR
4	011-264-07	808 A St	Residence	*	Yes, with DPR
5	011-252-14	810 E St	Residence--add to western district?	*	Yes, with DPR
6	012-073-11	707 C St	Residence	*	Yes, with DPR
7	011-263-21	1030 Third St	First Federal Savings Bank	*	Yes, with DPR
8	011-251-09	1410 Third St	Residence—add to western district?	*	Yes, with DPR
9	013-012-05	720 (728) A St	Relocated NWP rail depot	Good	--
10	012-073-05	1307 Second St	Residence	Good	--
Downtown Core Properties Outside Districts Inventoried in 1977/1986 Survey, Rated as Not Eligible in 2019/20 Survey					
11	011-252-11	1416-20 Second St	Residence	Good	Rated “E”
12	011-253-10	1301-1311 Fourth St	Le Comptoir Wine Bistro; Hayes Building (identified as not original)—add to western district?	Good	Rated “E”
13	011-254-01	1321-1325 Third/ 822 D St	Prandi Property Management; also known as Guenther Bldg	Good	Not Listed
14	012-75-06	1201 Second / 747 B St	Pacifics Baseball Club/ Cosmopolitan Hotel	Good	Rated “D”

Notes: (*)= Not shown as eligible in 1977/86

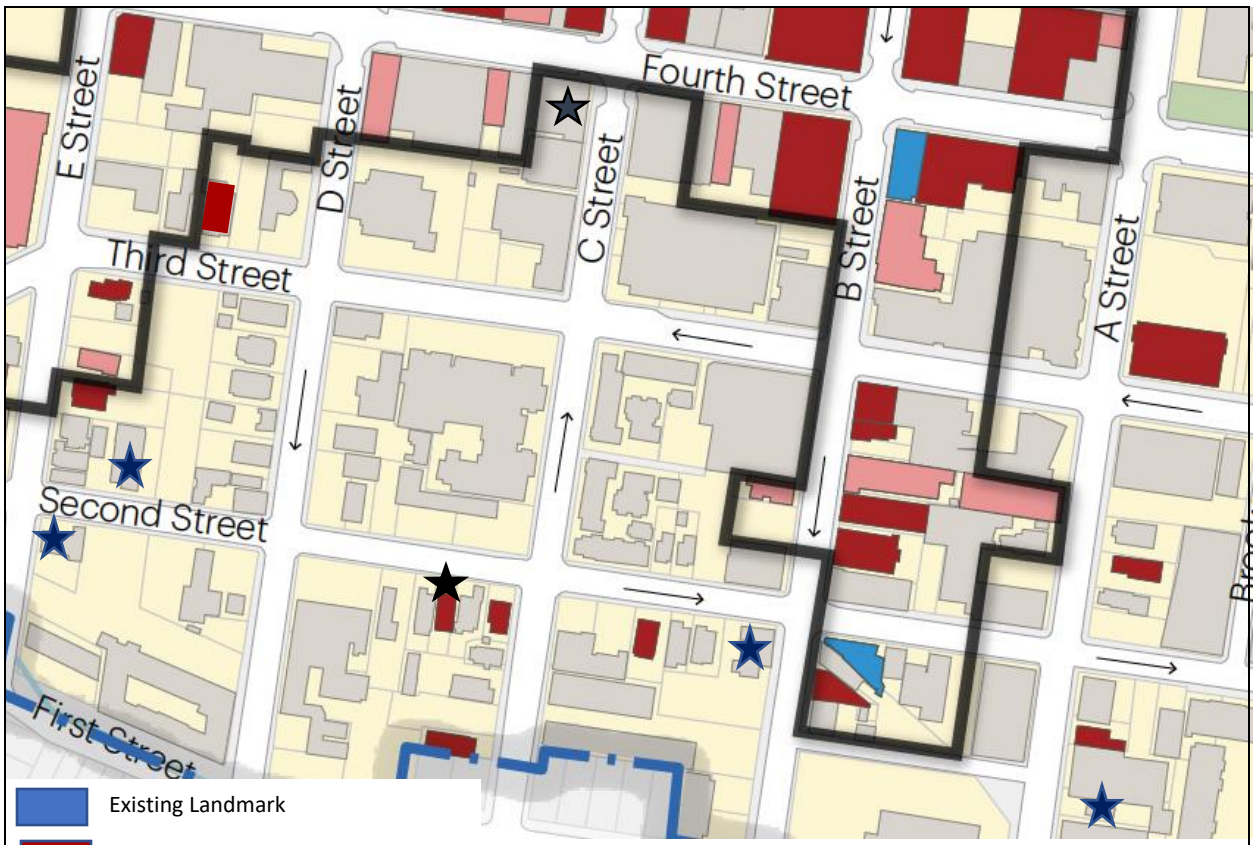


Figure 4-4
Historic Resources in Southern Downtown Core

Gateway Area

The historic resources survey identified 15 individually eligible resources in the Gateway area of Downtown, generally located along Fifth Avenue and Mission Avenue east of the Mission San Rafael Arcangel, and in the area around the SMART Rail station. This area is shown in Figure 4-5. Individual historic resources within this area are listed in Table 4-6. Twelve of the resources in this area were also identified in the 1977/86 survey. Three structures were newly added through the 2019-2020 survey and are covered by DPR Forms in Appendix B.

Additionally, four structures in this area were listed in the 1977/86 survey but were not carried forward or were not re-surveyed. These include the Whistlestop Building, which was deemed ineligible (see Chapter 5 fact sheet).

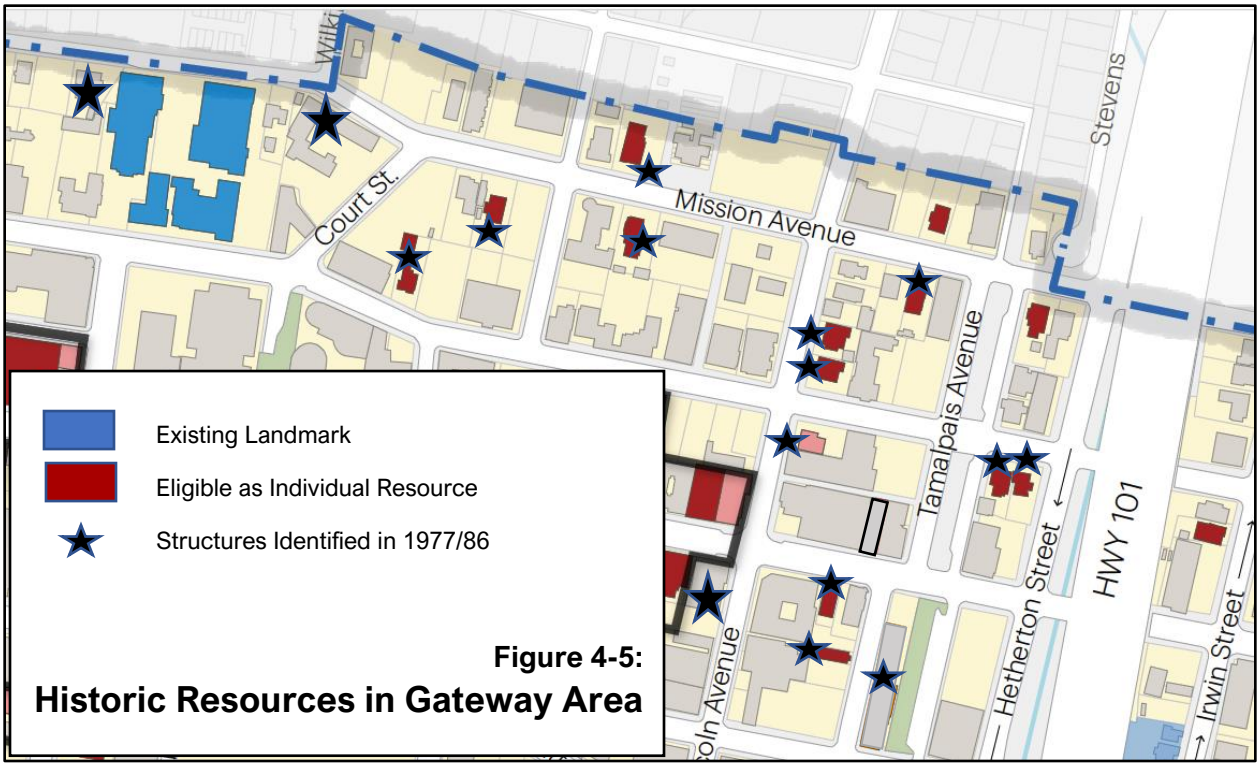


Figure 4-5:
Historic Resources in Gateway Area

Table 4-6: Gateway Area Historic Resources outside of Eligible Districts (excludes Landmarks)

#	APN	Address	Common Name/ Notes	Rating in 1977/1986 Survey	Newly Added Through 2019 Survey?
1	011-275-02	709 Fourth St	Tavern on Fourth	Excellent	--
2	014-084-02	633 Fifth Av	Resid. to Office/ Kaufman Assoc	Good	--
3	014-084-13	637 Fifth Av	Resid. to Office/VMI Architects	Good	--
4	011-221-08	918 Fifth Av	Residence	Good	--
5	014-081-01	637 Mission	Residence	*	Yes, with DPR
6	011-186-10	710 Mission	Residential Conversion	*	Yes, with DPR
7	011-226-03	705 Mission	Residential Conversion	Good	--
8	011-223-02	823-25 Mission	Residence	Exceptional	--
9	011-184-10	828 Mission	Residential Conversion	Exceptional	--
10	011-221-03	907 Mission	Resid. to Office/ Nute Engineering	Excellent	--
11	011-275-04	927 Tamalpais	Trevors Pub	Good	--
12	011-227-01	1016 Lincoln	Resid. To Office/ Jaret & Jaret	Good	--
13	011-226-07	1104 Lincoln	Residence	Good	--
14	011-226-08	1110 Lincoln	Residence	Good	--
15	014-085-10	1011 Irwin	Residence	*	Yes, with DPR
Downtown Core Properties Outside Districts Inventoried in 1977/1986 Survey, Not Listed in 2019/20 Survey					
16	011-213-18	1123 Court Street	St Paul's Episcopal	Good	Rated “D”
17	011-213-04	1135 Mission	DeCourtiex House	Good	Rated “Not Individually Eligible”
18	011-273-06	801 4th Street	Luna Travel/Boost Mobile/Office above	Good	Rated “E”
19	011-277-01	930 Tamalpais	Whistlestop	Good	Rated “E”

Notes: (*)= Not shown as eligible in 1977/86

Resources Requiring Additional Research

The 2019-2020 survey provides a comprehensive inventory for about 80 percent of the Precise Plan area. A number of resources may require additional research:

- **Chisolm and Schlosser-Cole Residences.** As noted on Page 4-3, changes in property addresses have created confusion around the landmark status of two properties in the 5th and E vicinity. The Schlosser-Cole Residence (1099 E Street, at the southwest corner of 5th and E) was landmarked in 1979; the Chisolm Residence is noted as being landmarked, but its location is given at 1023 E Street, which does not exist. Archived City files from the 1970s for this address contain photos of Schlosser-Cole Residence. City files indicate the residence at 1517 Fifth Avenue was built by Christopher Chisolm. This structure was deemed ineligible in the 1977 survey (rated "good" but not "excellent or exceptional"). The 2019/20 survey found it was eligible as an individual resource.

- ***930 Tamalpais (Northwestern Railroad Depot, aka "Whistlestop").*** The Depot played a role in the development of transportation in Marin County and is regarded as a potential opportunity for adaptive reuse and restoration. The current owner (Vivalon) uses the building as a senior center but will be relocating to a new facility a few blocks away. Past studies of the building's historic importance have reached different conclusions; the 2019-2020 Precise Plan Historic Resources Survey found that the building's integrity had been compromised by prior alterations and additions, making it ineligible for landmark status.

- ***Unsurveyed Areas***. As noted earlier, the Latham Street area was excluded from the 2019-2020 Historic Resources Survey since it is not being rezoned and has limited potential for land use change and development. Parts of the Fifth Avenue area were excluded from the 2019-2020 survey, as this area has limited potential for land use change and development. Given the limited resources available for the Downtown survey, the focus was on areas with the potential for more significant infill development and redevelopment. To get a fuller picture of historic resources, a survey of Latham Street (including Hayes Street, and the unit blocks of F Street, G Street, and Ida Street) should be conducted as funding allows. More comprehensive study of historic resources along Fifth Avenue also may be warranted. Finally, additional effort may be needed to survey the portion of Downtown east of Irwin Street, particularly along Fourth Street.

- ***Events and Individuals.*** Additional research is recommended to identify eligible historic resources associated with past events and important individuals; the 2019-2020 survey included archival research on these topics but was principally focused on architecture.

- ***District Designations***. The boundaries of the areas eligible for historic districts as displayed in this report are intended for California Environmental Quality Act (CEQA) analysis. The City does not intend to formally designate "historic districts" at this time. In the event formal designations are proposed, the boundaries indicated in this report may be refined and

potentially contracted (or expanded, as appropriate) based on consultation with property owners, businesses, and others.

- ***Mid-Century Buildings.*** A number of mid-20th Century buildings (such as 711 D Street) were identified in the survey as warranting further consideration as the 50-year "look back" period increases in length. These structures may not be eligible based on their architectural qualities now, but they may become more important as they age.

- ***Structures with "C" ratings in Chapter 5.*** The 2019-20 survey identified several structures as needing additional research (noted with a "C" in the Chapter 5 inventory). These buildings span a variety of ages and styles; subsequent research may result in some of these structures moving to the "eligible" list and others being removed.

- ***Additional DPR Forms.*** Because of funding limitations, the 2019-2020 survey focused on DPR 523 forms for newly identified historic resources, rather than those identified in 1977/1986. While a few of the new DPR forms cover previously inventoried buildings, the focus was on those for which no prior data existed. Many of the resources initially identified in the 1977/1986 survey already had DPR forms available. However, these forms are old, with photos that do not reflect current conditions and information that may be difficult to read. As resources allow, DPR forms should be updated for the approximately 50 properties that were previously surveyed in the 1970s and 80s, and confirmed in 2019/20 to still be eligible landmarks.

Structures Removed From the 1977/1986 Inventory

At least four structures were removed from the 1977/1986 survey due to demolition. These include:

- 1203 Lincoln (former El Camino Hotel), which is now planned for assisted living
- 1212 Second Street (now under construction with a 41-unit multi-family housing project)
- 1313 Fifth Avenue (on the site of the San Rafael Public Safety Center)
- 706 Third Street (former Salute site, now used as a parking lot for Whistlestop)

In addition, about a dozen structures rated as "Good", "Excellent," or "Exceptional" in 1977/1986 were revisited in 2019/20 and determined to have diminished integrity based on field observations. Over the past 40 years, these structures have either deteriorated in quality or have had unsympathetic alterations or additions that have reduced their eligibility as historic resources. These properties were generally rated as "E" in the 2019/20 resource survey; they are highlighted in Tables 4-2 through 4-6 of this chapter. More detail on these structures, including the rationale for their "E" ratings, may be found in Chapter 5 of this report.

Parcels with No Historic Resources

Approximately 400 parcels in the Downtown Precise Plan Area boundary were found not to contain historic resources or were not included in the survey. These are listed in Appendix A.

5. Preliminary Assessment of Architectural Significance

Chapter 5 provides field survey forms for approximately 160 properties in Downtown San Rafael that were determined to warrant further study based on the initial screening of historic properties in 2019. The field survey preceded the preparation of DPR forms and was used to determine which properties were potentially eligible as landmarks and which were likely ineligible based on Secretary of the Interior standards. The Fact Sheets represent an intermediate product in the work effort and do not necessarily represent the final determination for each property. A number of properties (such as Mission San Rafael Arcangel) were excluded from the Fact Sheets because their significance had already been established.

Each of the 160 properties was given a letter rating of A through E as follows:

Eligible (Landmark)	Eligible (Contributor, not Landmark)	May be eligible, needs research	Probably ineligible	Ineligible
A	B	C	D	E

These ratings do not specifically apply to the quality or "letter grade" of the resource, but rather are an indicator of eligibility as a historic resource. Buildings with "A" ratings are eligible for consideration as historic landmarks. Buildings with "B" ratings would likely not be eligible individually but could be considered eligible as contributing resources in a historic district. Buildings with "C" ratings require additional research. Buildings with "D" ratings were deemed probably ineligible, but not definitively. Buildings with "E" ratings were determined to be ineligible as landmarks. The survey forms provide an explanation as to why. As appropriate, buildings were also assigned California Historic Resource Status Codes, which is a classification system used to further identify the status of individual resources. A key to these status codes is included at the end of this chapter.

Each survey form includes basic locational information (Address, Assessor Parcel Number, etc), structural information (architectural style, year of construction, use), a description of defining qualities, an assessment of historic integrity, and a conclusion regarding historic significance. Structures are listed alphabetically by street.

A summary of all properties and their letter grades is included in Table 5-1. In total, there were 37 "A" properties (including three A-minus), 55 "B" properties (including four "B-plus"), 15 "C" properties, 10 "D" properties, and 60 "E" properties.

Table 5-1: Properties Covered by Chapter 5 Fact Sheets

ID#	Assessor Parcel	Street Address	Common Name/ Use	Classification
1	013-012-05	720 (728) A Street	NW Pacific Rail (relocated)	A
2	013-012-20	740 A Street	Drummers Tradition	B
3	011-264-07	808 A Street	residence	B
4	011-264-08	812 A Street	residence	E
5	011-262-06	813 A Street	Foam Store	B
6	013-011-02	720 B Street	Saigon Village Restaurant	C
7	013-011-05	724 B Street	Flatiron Building	A
8	013-011-56	747 B St/ 1201 Second St	Cosmpolitan Hotel (Pacifics)	D
9	011-262-14	810-814 B Street	Worldwide Antiques/Grocery	A
10	011-262-16	826 B Street	Albion House/Hotel Carmel	C
11	011-262-22	834-840 B Street	Players Guitars	A
12	011-262-01	844-848 B Street	Milani Building	A
13	011-261-13	926-930 B Street	Garatti Grocery	D
14	011-212-05	1009 B/ 1200-1212 Fourth	Aileen Apts/ Scandinavian Des.	A
15	011-215-01/-04	1010 B/ 1138-1146 Fourth	Albert Building	A
16	011-261-01	938 B/ 1143 Fourth	McDermott Bldg/ Mulberry Hse	B+
17	012-073-11	707 C Street	offices	A-
18	012-075-17	710-714 C Street	offices	E
19	011-253-06	917 C Street	Youth in Arts	E
20	011-213-18	1123 Court Street	St Paul's Episcopal	D
21	012-071-17	711 D Street	Marin Medical Ctr	C
22	011-254-22	812 D Street	residence	E
23	011-252-06	813 D Street	residence	C
24	011-252-05	817 D Street	residence	C
25	011-253-09	910 D Street	Post Office	E
26	011-246-08	809-11 E Street	residence	C
27	011-252-14	810 E Street	residence	A
28	011-245-27	901 E Street	E Street Grammar School	C
29	011-204-01	1022 E Street	Keaton's Funeral Home	A-
30	011-194-06	105 F Street	residence	E
31	014-084-02	633 Fifth Ave	residence	A
32	014-084-13	637 Fifth Ave	residence	A
33	014-081-08	634 Fifth Ave		E
34	014-081-09	638 Fifth Ave		E
35	011-227-02	709 Fifth Ave	Juice Beauty	E
36	011-224-21	835 Fifth Ave	Merrills Drugs	D
37	011-224-01	845 Fifth Ave	Apartments	D
38	011-221-08	918 Fifth Ave	residence	A
39	011-204-18	1409 Fifth Ave	residence	E
40	011-202-04	1517 Fifth Ave	residence	A

ID#	Assessor Parcel	Street Address	Common Name/ Use	Classification
41	011-196-05	1539 Fifth Ave	residence	B+
42	011-320-01-to-02	1623-1627 Fifth Ave	Victorian Village	B
43	011-194-01	1637 Fifth Ave	residence	A
44	011-194-02	1629 Fifth Ave	Thomas Morris House	A
45	011-192-01	1721 Fifth Ave	offices	E
46	010-291-16	1800 (01) Fifth Ave	San Rafael Impr. Club	A
47	011-226-06	712 Fifth Ave		E
48	012-054-02	455 1st/ 1621 Second		E
49	014-123-09	505 Fourth St		E
50	014-086-26	532 Fourth St	Thai Smile	E
51	011-275-03	705 Fourth St	Extreme Pizza	E
52	011-227-04	710 Fourth St	Marin Ctr for Independent Living	E
53	011-275-02	709-11 Fourth St	Tavern on Fourth	A
54	011-227-05	716 Fourth St		E
55	011-227-06	718-24 Fourth St	Bayside Marin	E
56	011-273-06	801-05 Fourth St	Old San Rafael Mall	E
57	011-273-05	807 Fourth St		E
58	011-224-11	812 Fourth St	Pizza Orgasmica/Redhill Imports	B
59	011-273-02	827-831 Fourth St	Rafael Florist/Gold Rush Jewelers	A
60	011-224-13	836 Fourth St	Mikes Bikes	B
61	011-214-14	846 Fourth St	Glaze and Confused Pottery	B
62	011-214-14	842 Fourth St	George's Night Club	B
63	011-224-20	866 Fourth St		E
64	011-224-17	874 Fourth St	MMWD with new façade	E
65	011-224-18	882-84 Fourth/ 1010 Lootens	Masonic Bldg	B
66	011-271-03	881-883 Fourth St		A
67	011-271-02	885-87 Fourth St	Vin Antico	A
68	011-271-01	889-91 Fourth St		E
69	011-222-05	900 Fourth St	former EL Camino Theater	E
70	011-263-08	917 Fourth St	California Bakery/Fenix	A
71	011-263-07	925 Fourth St	Boiadeirus Steakhouse	B
72	011-215-04	1118 Fourth St	Rafael Theater	A
73	011-215-02	1122-1132 Fourth St	State Room	E
74	011-261-31	1125-1139 Fourth St	Wilkins Hotel	C
75	011-255-28	1219-1223 Fourth St	Rare Coin/ Cherry Blossom Salon	E
76	011-255-28	1225 Fourth St	Gamescape	A
77	011-212-06	1222-1230 Fourth St	Central Hotel	E
78	011-212-14	1242-1244 Fourth St	Peters Bldg	A
79	011-205-08	1300 Fourth St	Bank of Italy	A
80	011-253-10	1301 Fourth St	Hayes Bldg (replica)	E

ID#	Assessor Parcel	Street Address	Common Name/ Use	Classification
81	011-253-04	1313-1317 Fourth St	Tenkuyu (replica)	E
82	011-205-09	1310 Fourth St	Pleasures of the Heart	E
83	011-253-03	1321 Fourth St	Folk Art Gallery	B
84	011-253-02	1327-1337 Fourth St	Artworks/Gordon Opera House	D
85	011-205-11	1322-1328 Fourth St	Mahon House/ Butchart Bldg	A
86	011-253-01	1345 Fourth St	T&B Sports	B
87	011-205-13	1344-46 Fourth St		E
88	011-205-14	1350 Fourth/ 1040 D St		D
89	011-204-08	1400 Fourth St		E
90	011-204-17	1414 Fourth St		E
91	011-204-15	1444-1446 Fourth St	Bombay Grill	E
92	011-251-01	1447 Fourth St	former Redwood Bank	A
93	011-202-14	1504-1512 Fourth St	Former Istanbul Rug	B
94	011-202-11	1508-1522 Fourth St		E
95	011-242-11	1531 Fourth St	Cains Tire	B+
96	011-242-10	1533 Fourth St	Mayflower	B
97	011-242-09	1538 Fourth St		E
98	011-242-07	1545 Fourth St		E
99	011-242-04	1553-1555 Fourth St		B
100	011-196-11	1560 Fourth St		E
101	011-242-01	1569 Fourth St		E
102	011-241-32	1605-1611 Fourth St		B
103	011-241-01	1617 Fourth St		B
104	011-232-03	1701 Fourth St		C
105	011-192-08	1714 Fourth St		C
106	010-291-35	1848 Fourth St	Pond Farm	B
107	010-291-57	1850-52 Fourth St		A
108	014-123-10	963-977 Grand Av		D
109	010-291-69	1H St/ 1820 4th St		D
110	014-123-21	914 Irwin St		E
111	014-085-10	1011 Irwin St	residence	B
112	014-085-11	1015 Irwin St		E
113	011-242-22	30 Latham St	residence	B
114	011-273-12	901 Lincoln Av	Sol Food	E
115	011-227-01	1016 Lincoln Av		C
116	011-225-04	1103 Lincoln Av		D
117	011-226-07	1104 Lincoln Av	San Rafael House	B
118	011-226-08	1110 Lincoln Av	residence	B
119	011-226-13	1116 Lincoln Av	residence	E
120	011-226-10	1118 Lincoln Av	residence	C

ID#	Assessor Parcel	Street Address	Common Name/ Use	Classification
121	011-226-01	1120 Lincoln Av	residence	*B*
122	014-081-02	633 Mission Av		E
123	011-081-01	637 Mission Av		*B*
124	011-226-03	705 Mission Av		A
125	011-186-10	710 Mission Av		A
126	011-223-02	823-25 Mission Av		A
127	011-184-10	828 Mission Av	residence	A
128	011-221-03	907 Mission Av	residence	A-
129	011-174-11	1012 Mission Av	residence	E
130	011-213-04	1135 Mission Av	De Courtiex House	*B*
131	011-186-11	1145 Mission Av	residence	*E*
132	011-272-04	16 Ritter St		*E*
133	011-272-10	826 Second St		*E*
134	013-011-06	1115 Second St	Mackey Frames	E
135	012-075-05	1209 Second St		E
136	012-075-04	1211 Second St		C
137	012-075-03	1215 Second St	residence	B
138	012-073-07	1301 Second St	residence	B+
139	012-073-06	1305 Second St		E
140	012-073-05	1307 Second St	residence	B
141	012-073-04	1309 Second St	residence	E
142	012-073-03	1315 Second St		E
143	011-252-11	1416-1420 Second St	residence	E
144	014-011-15	3 Stevens Pl	residence	C
145	011-275-04	927 Tamalpais Av	Barrel House	B
146	011-277-01	930 Tamalpais Av	NWP Rail Depot/ Whistlestop	E
147	014-122-14	610 Third St	French Quarter	E
148	011-263-21	1030 Third St	First Federal Savings and Loan	A
149	011-251-09	1410 Third St		A
150	011-251-11	1414 Third St	residence	E
151	011-243-11	1532 Third St	residence	B
152	014-086-15	514 Fourth St	Marin Shakespeare	E
153	011-227-10	704 Fourth St	Lotus Restaurant	E
154	011-255-23	1203 Fourth St	Wells Fargo	C
155	011-224-10	1001 Lincoln Av		B
156	011-202-06	1099 E St	Chisolm Residence	B
157	011-203-01	1100 E St	San Rafael Public Library	A
158	011-320-03	1623 Fifth Av, Building C	Victorian Village	B
159	011-320-04	1623 Fifth Av, Building D	Victorian Village	B



Address/code	**720 A Street (728 A Street)**	7N	**A**
APN	013-012-05		
Building Name	Northwestern Pacific Railroad Station		
Year Built	1929 (https://annetkent.kontribune.com/articles/5656), c1960 moved		
Original Use	Railroad station		
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The diminutive one-story rectangular plan building is set back on its parcel in a neighborhood of taller buildings sited immediately adjacent to the sidewalk. It has a cross-gabled Tile roof with exposed purlins and rafter tails. Cladding is smooth plaster stucco. Large arched windows are fitted with multi-light steel sash. There is a decorative medallion with the railroad logo at the gable end.		
Integrity	Retains integrity despite being moved		
Significance	Individually eligible under A and C, also local contributor		
Notes	*This is not the original Depot location, building appears to have been moved to site from original B St location when Safeway was developed early 1960s*		



Address/code	740 A Street		B
APN	013-012-20		
Building Name	A Drummer's Tradition (drum store)		
Year Built	1948		
Original Use	Retail		
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The one-story commercial building is rectangular in plan with its main façade immediately adjacent to the sidewalk. It has a simple stepped parapet and two storefronts with entrances left of display windows. Storefronts slant outward from recessed doors creating a zig-zag façade. The building has glass block bulkheads and metal window and door trim. Cladding is stucco. There is a small wood-clad volume at the rear of the main building with a shed roof.		
Integrity	Appears to retain integrity, may have been altered 1950s		
Significance	Potential local district contributor if a sufficient concentration of postwar commercial resources is present, not individually eligible at any level		
Notes	*Bulkhead and trim match the adjacent building to the north (742-744 A), probably both were remodeled in the 1950s as other details differ. Both buildings should probably be included or not included in potential district*		



Address/code	**808 A Street**		**B**
APN	011-264-07		
Building Name			
Year Built	C1890 (Sanborn Maps)		
Original Use	Residence		
Architectural Style	Queen Anne Cottage		
Architect/Builder			
Description	The 1.5 story house has a roughly rectangular plan and a raised basement. It has a steeply pitched front-gabled roof. It is clad in drop wood siding and has a combination of double-hung wood sash and replacement windows. Decorative features include ornamental scrolls at the main façade gable end and a paneled frieze. Porch supports and balustrade are wrought iron.		
Integrity	Retains integrity despite replacement of some windows and original wood porch details		
Significance	Local district contributor, not individually eligible for architecture due to alterations		
Notes			



Address/code	**812 A Street**		**E**
APN	011-264-08		
Building Name			
Year Built	Before 1887 (Sanborn Maps)		
Original Use	Multi-family Residence		
Architectural Style	Folk Victorian Duplex		
Architect/Builder			
Description	The one story duplex has a rectangular plan and a slightly raised basement. Its front wing has a steeply pyramidal roof; the rear of the building has a lower shed roof. Front doors are side by side in the symmetrical main façade. The building is clad in drop wood siding with vertical groove plywood at the basement level and has vinyl replacement windows. A partial width projecting porch has a low pitch gabled roof, concrete steps with open risers, and a balustrade are wrought iron. The building lacks decorative features		
Integrity	Lacks integrity due to replacement of windows and original full-width porch, basement siding, and installation of inappropriate porch steps and balustrade		
Significance	Not eligible under any criterion due to loss of integrity		
Notes			



Address/code	**813 A Street**		**B**
APN	011-262-06		
Building Name	Foam Store		
Year Built	1951 (Sanborn Maps, aerials)		
Original Use	Commercial		
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The two story commercial building has a rectangular plan with storefronts on the ground floor and offices above. It has a flat roof with a heavy soffit on the upper floor. It is clad in brick with small areas of stucco. Upstairs windows are three-part steel casement. Decorative grooved moulding separates upper and lower stories. The storefront in the south third of the building is adjacent to the sidewalk, while the north end storefront and entrances are recessed behind heavy brick pillars and are fitted with contemporary replacement aluminum frame doors and windows.		
Integrity	Retains integrity despite storefront replacement.		
Significance	Potential local district contributor if a sufficient concentration of postwar commercial resources is present, not individually eligible at any level		
Notes			



Address/code	**720 B Street**		**C**
APN	013-011-02		
Building Name	Saigon Village Restaurant, Historic San Rafael House restaurant/saloon/lodging		
Year Built	Before 1887 (Sanborn Maps)		
Original Use	Saloon/restaurant with hotel upstairs		
Architectural Style	American Foursquare		
Architect/Builder			
Description	The two story residential-style building has a triangular plan to conform to the railroad tracks to its northeast. It features a medium pitch hipped roof in front with a flat-roofed addition at the rear. Cladding is stucco, windows are a combination of double-hung wood sash and fixed multi-light. The entrance is fitted with a fully-glazed aluminum frame commercial-style door. There are commercial buildings immediately adjacent to its side elevations.		
Integrity	Current appearance probably c1905, door modern, requires more study		
Significance	Potential local district contributor as extant nineteenth century restaurant/hotel. Not eligible for its architecture.		
Notes			



Address/code	724 B Street	7N	A
APN	013-011-05		
Building Name	Flatiron Building		
Year Built	1883		
Original Use	Saloon/residential		
Architectural Style	Queen Anne Commercial		
Architect/Builder			
Description	The two story commercial building has a triangular plan with a bar and grill on the ground floor and apartments above. It has a flat roof and cornice elaborated with ornamental brackets and frieze. It is clad in drop wood siding and has double-hung wood sash windows. Its northwest corner features a highly decorative projecting bay above the main entrance which features decorative spandrel panels above multi-light stained-glass windows. Windows and doorways on the north elevation feature pedimented hoods. Entrances are fitted with wood-frame French doors, and there is a historic painted beer sign.		
Integrity	Retains integrity, only doors appear to have been altered		
Significance	Individually NRHP eligible under C and potentially A, also local contributor		
Notes	*Designated as Local Landmark in 1982, decorative features may have been added during the nineteenth century based on historic photographs*		



Address/code	**747 B Street (1201 Second Street)**	**N/A**	**D**
APN	013-011-056		
Building Name	Cosmopolitan Hotel		
Year Built	Before 1887 (Sanborn Maps)		
Original Use	Hotel		
Architectural Style			
Architect/Builder			
Description	The two story hotel building has an irregular plan with moderate pitch hipped roof and ornamental brackets at the cornice. Cladding is stucco and the building has vinyl replacement windows. There is a small wood frame storefront at its northwest corner. The balance of the lower north elevation lacks fenestration.		
Integrity	Does not appear to retain integrity, more study needed but stucco, windows, storefront, blank wall all appear to be alterations		
Significance	Unlikely to be eligible, lack of integrity		
Notes			



Address/code	810-814 B Street	3S	A
APN	01011-262-14		
Building Name	World Wide Antiques/Victory Grocery		
Year Built	Before 1894 (Sanborn Maps)		
Original Use	Retail storefront		
Architectural Style			
Architect/Builder			
Description	The two story commercial building has a rectangular plan with flat roof and parapet. Cladding is brick with ornamental features including dentil moulding, upper floor pilasters, and window hoods also executed in brick. Two projecting wood upstairs bays have decorative frieze and window hoods. Window openings are arched and fitted with wood sash. Ground floor pilasters have Corinthian capitals flanking multiple light transoms above storefronts. A metal awning projects from the façade just below the capitals. Bulkheads and pilasters have been stuccoed below the awning. Ground floor doors are residential-type paneled wood doors on the north and a contemporary aluminum frame glazed door on the south.		
Integrity	Retains integrity despite ground floor alterations		
Significance	Individually NRHP eligible under C, also local contributor		
Notes			



Address/code	826 B Street (830 B St)	5S2	C
APN	01011-262-16		
Building Name	Albion House, Hotel Carmel		
Year Built	1887 Albion Hotel, 2 story, smaller footprint; 1894 Cypress Villa Hotel, expanded footprint; 1907/1924 unchanged; 1950 Hotel Carmel current footprint (Sanborn Maps) c1930 current façade (spreadsheet)		
Original Use	Retail storefront/hotel		
Architectural Style			
Architect/Builder			
Description	The three story building is rectangular in plan with a lower-height volumes at the rear. Its main façade is immediately adjacent to the sidewalk. The roof is flat with a shaped parapet. Four slanted bays project from the upper stories; each is topped with a tile roof. Fenestration consists of vinyl replacement windows. There is a fire escape with exits at the center of the façade. A metal awning below multiple-light transoms shades the ground floor storefronts. Upper floors are stuccoed while the ground floor is clad in tile. Storefront entrances, one of which is recessed, are fitted with partially glazed paneled wood doors.		
Integrity	May retain integrity to c1930 façade, more research needed		
Significance	Potential local contributor, not individually eligible		
Notes			



Address/code	834-840 B Street	3S	A
APN	01011-262-22		
Building Name	Players Guitars		
Year Built	1885 per DPR, c1895 (between 1894 and 1907 Sanborn Maps)		
Original Use	Retail storefront (shoe and boot store)		
Architectural Style	Stick Eastlake		
Architect/Builder			
Description	The two story commercial building is rectangular in plan with a mansard roof. The façade is asymmetrical with has one projecting square bay on the upper floor. Cladding is drop siding. Tall vertical windows separated by stylized pilasters are fitted with vinyl replacement sash. Ornamental features include cornice with decorative brackets and elaborate paneled frieze as well as bird's eye moulding above windows. Rare original storefronts have multiple-light display windows and transoms. There is a set of original double wooden doors flanked by decorative round columns. Doors at the south end of the storefront have been replaced or boarded up.		
Integrity	Retains integrity despite windows and door replacement, extraordinarily well-preserved Victorian-era storefront (see following page for 1970s photo)		
Significance	Eligible under Criterion C as an individual landmark and as contributor		
Notes			



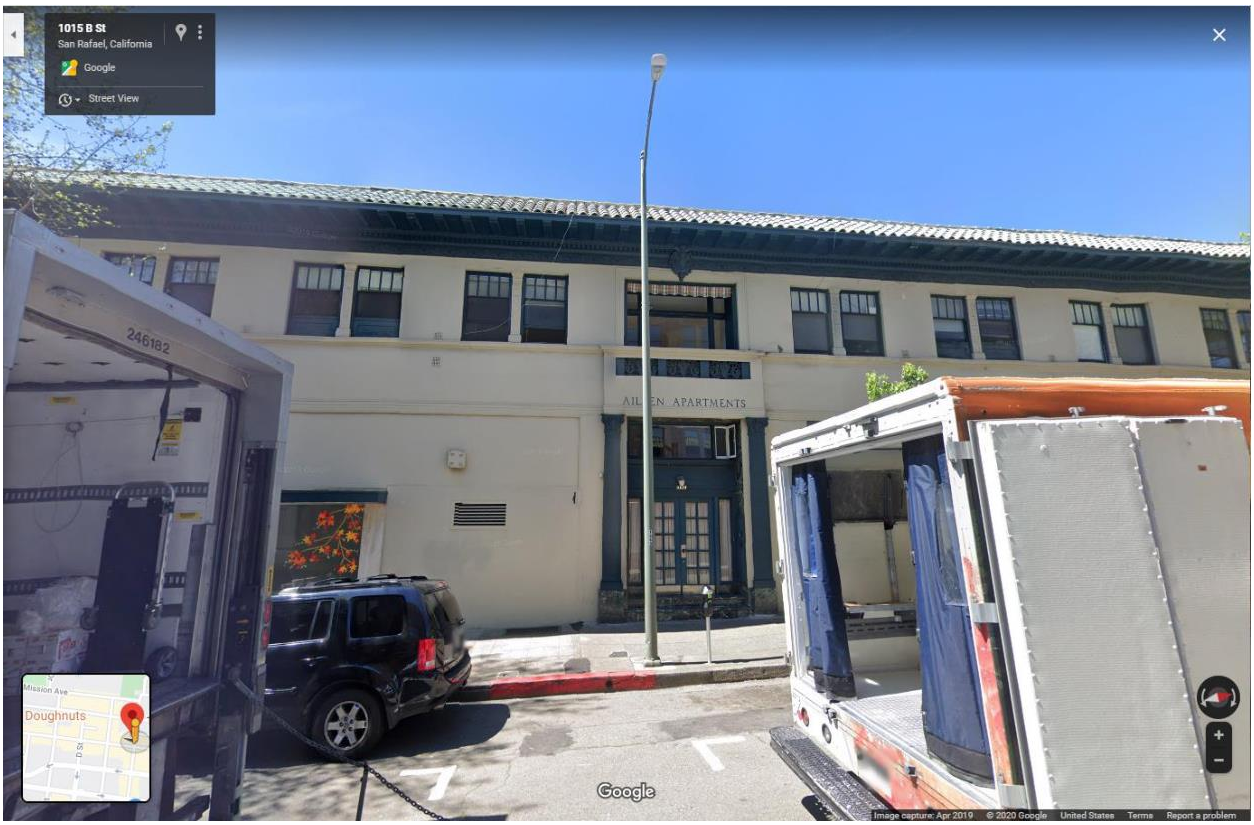


Address/code	844-848 B Street	3S	A
APN	011-262-01		
Building Name	Milani Building		
Year Built	Between 1887 and 1894 (Sanborn Maps)		
Original Use	Retail storefront grocery/saloon, residential upstairs		
Architectural Style	Queen Anne Commercial		
Description	The two story building is rectangular in plan with facades on B and Third Street and a mansard roof with metal tiles. Its focal point is a projecting bay at the corner with peaked hexagonal roof. There are three projecting upper floor bays on the B Street façade and two on Third Street, all are capped with diminutive hipped roofs and feature a cornice with scrolled brackets. Cladding is drop siding with vertical-groove plywood above and below windows. Windows are double-hung wood sash. There are two original storefronts at the south end of the west façade similar to those on 834-840, with multi-light stained glass transoms. The northernmost storefront has been boarded up except for a hexagonal window. An entrance facing the corner is fitted with double partially glazed doors. Storefront bays on Third Street have been modernized with large panes of glass.		
Integrity	Retains integrity despite storefront and cladding alterations, well-preserved Victorian-era storefronts (1970s photo above)		
Significance	Eligible as an individual landmark and as contributor		
Notes	*Alterations to north storefront are likely to have been performed between 1930 and 1950 and may be historic.*		





Address/code	926-930 B Street	7N	D
APN	011-261-13		
Building Name	Garatti Grocery		
Year Built	1912 (spreadsheet)		
Original Use	Retail storefront grocery		
Architectural Style	Mission		
Architect/Builder			
Description	The one story commercial building is rectangular in plan with a decorative shaped parapet and entablature with dentil moulding above the storefront level. Replacement storefronts are divided by heavy wooden moulding. Cladding is stucco. The entrance is fitted with a paneled wooden door.		
Integrity	Lacks integrity, major alterations since 1970s survey (see above)		
Significance	not eligible, combination of modest architecture and integrity problems		
Notes			



Address/code	**1009 B Street (1200-1212 4th)**	5S2	**A**
APN	011-212-05		
Building Name	Aileen Apartments		
Year Built	c1930? (architecture)		
Original Use	Retail storefront /apartment		
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The two story commercial/apartment building is square in plan with a tiled mansard roof and cornice with decorative rafter tails, dentil moulding, cartouche, and floral frieze. There are facades on B and Fourth streets. Cladding is stucco. Upper floor windows are paired double-hung 4-over-1 wood sash separated by pilasters elaborated with floral motifs. An upstairs balcony feature decorative plaster in floral patterns. The ground floor apartment entrance is flanked by Corinthian columns, topped by a transom, and has double French doors with sidelights. Storefront windows on the ground floor have been somewhat altered		
Integrity	Retains integrity despite storefront replacement		
Significance	Eligible as individual landmark and contributor		
Notes			





Address/code	1010 B Street (1138-1146 Fourth)	1S	A
APN	011-215-01		
Building Name	Albert Building		
Year Built	c1920 (DPR), 1930 (Patch Article)		
Original Use	Retail storefront /apartment		
Architectural Style	Chicago/Commercial		
Architect/Builder			
Description	The four story commercial/apartment building has an L-shaped plan with a flat roof and heavy decorative cornice. There are facades on B and Fourth streets. Cladding is brick with terra cotta decorative features and granite bulkheads. Upper floor windows are paired double-hung fitted with replacement windows. An upstairs balcony feature decorative plaster in floral patterns. The ground floor apartment entrance is flanked by Corinthian pilasters elaborated with decorative urns and inscribed with the building name. The door is deeply recessed and fitted with an original bronze door/sidelight/transom assemblage. Storefronts are separated by brick pilasters with terra cotta capitals. Most have original fully glazed wood doors and transoms. Contemporary awnings have been installed on storefronts		
Integrity	Retains integrity despite window replacement and some storefront alterations		
Significance	Eligible as individual landmark and contributor		
Notes			



Address/code	**938 B Street (1143 Fourth St)**	**6X**	**B+**
APN	011-261-01		
Building Name	McDermott Building		
Year Built	Prior to 1887 (Sanborn Maps)		
Original Use	Retail storefront (grocery)/apartment		
Architectural Style	Italianate/Second Empire		
Architect/Builder			
Description	The two story commercial/apartment building has a rectangular plan with a flat roof and minimal cornice. There are facades on B and Fourth streets. Cladding is drop wood siding. Upper floor windows are tall double-hung wood sash with decorative pedimented hoods elaborated with brackets and diamond shingles. . The ground floor storefronts have paneled frieze bulkheads.		
Integrity	Appears to retain integrity despite some storefront alterations, spreadsheet says cornice removed		
Significance	Eligible as contributor and possibly as individual landmark		
Notes			



Address/code	707 C Street		A-
APN	012-073-11		
Building Name			
Year Built	1952 (spreadsheet)		
Original Use			
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The one story commercial building is recessed behind a parking area. It has a rectangular plan with a flat roof that projects over its deeply recessed entry, which is at the south end of its main (east) façade. The building is clad in brick with stucco accents and features clerestory windows on its main façade. There are built-in brick planters in front of the building and along the south property line.		
Integrity	Retains integrity, low visibility because of shrubbery		
Significance	Eligible as contributor and possibly as individual landmark for its Modern architecture		
Notes			



Address/code	**710-714 C Street**		**E**
APN	012-075-17		
Building Name			
Year Built	1954 (spreadsheet)		
Original Use	Apartment		
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The two story apartment building (now used for offices) has two rectangular-plan flat-roofed buildings facing a central courtyard. Cladding is board and batten on the ground floor and stucco above. Windows are narrow frame metal casement. The overhanging second story on the courtyard-facing elevations is supported by plain metal poles and forms a sort of loggia sheltering apartment entrances. There are brick planters along the street-facing (west) elevations.		
Integrity	Retains integrity		
Significance	Not eligible individually or as district contributor		
Notes	*Common example of inexpensive midcentury architecture*		



Address/code	**917 C Street**		**E**
APN	011-253-06		
Building Name	Youth in Arts		
Year Built	1880 (spreadsheet) /c1950		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two story commercial building has a rectangular plan and sawtooth roof disguised by a parapet on the main (east) façade. The main façade upper story is stuccoed and lacks fenestration. There is a projecting v-shaped bay centered on the main façade. The ground floor has large aluminum frame storefront windows and split-face rock columns and bulkheads. The entrance has fully glazed aluminum frame double doors with transom and sidelights. Sides and rear elevations have steel sash windows in vertical openings.		
Integrity	Lacks integrity to 1880 construction, not a good example of a 1950s building		
Significance	Not eligible individually or as district contributor		
Notes	*19th century industrial origins of buildings displayed by roof form and side/rear elevations. Partial c1950 façade remodel created an oddly hybrid building that is not a good example of either era. 917 C St (adjacent south) is a better example of a midcentury commercial building*		



Address/code	**1123 Court Street**		**D**
APN	011-213-18		
Building Name	St Paul's Episcopal Church		
Year Built	1927 (church website), 1920 (DIJ 1949, Sanborn Maps)		
Original Use	Religious		
Architectural Style	Gothic Revival / Classical Revival		
Architect/Builder			
Description	The church sanctuary building is rectangular in plan with a steeply pitched gabled roof. It is connected to other church buildings to form a U-shaped compound building. The sanctuary has a rose window on the south elevation and pointed arch stained glass on the sides. It is clad in smooth stucco (may be reinforced concrete construction) with decorative buttresses. The main entrance is in a projecting volume near the east corner of the north elevation and features a pointed arch doorway under a pedimented gable.		
Integrity	unknown		
Significance	Unlikely to be eligible, requires more study, entrance apparently altered		
Notes	*Sources vary but building footprint dates from c1920. Main façade may have been on Mission St (north), entrance is on north but obscured from view by additions (1952-1964)*		



Address/code	**711 D Street**		**C**
APN	012-071-17		
Building Name	Marin Medical Center		
Year Built	Before 1952 (aerials)		
Original Use	Commercial		
Architectural Style	Mid-century Modern		
Architect/Builder			
Description	The commercial building is trapezoidal in plan with an interior courtyard and main facades on the east (D Street) and north (parking lot) elevations. The primary roof is flat with a low pitch gable over the courtyard entrance on D Street, which features large expanses of glass and brick cladding. The east façade has wood cladding and clerestory windows. A large second story addition on the east side of the building has low pitch roof and metal casement windows.		
Integrity	Research required to determine date of second story		
Significance	May be district contributor, not individually eligible		
Notes	*Second story may have been added within the historic period but does not fit Modernist aesthetic of other building elements. May be important as an early example of auto-oriented commercial architecture*		



Address/code	812 D Street		E
APN	011-254-22		
Building Name			
Year Built	1930s (spreadsheet) 1908-1923 (Sanborn Maps) 1906 (real estate ads)		
Original Use	Residential		
Architectural Style	Hip roof cottage (Foursquare)		
Architect/Builder			
Description	The rectangular plan residence is 1.5 stories and exhibits a hybrid appearance with a pyramidal roof, large dormers, and double-hung dormer windows dating from the building's original construction the first decade of the twentieth century. Arched window and door openings, flagstone door surround, and stucco cladding appear to date from a later addition.		
Integrity	Lacks integrity due to stucco, arched windows, etc.		
Significance	Not eligible individually or as contributor		
Notes			



Address/code	**813 D Street**		**C**
APN	011-252-06		
Building Name			
Year Built	1882 (spreadsheet)		
Original Use	Residential		
Architectural Style	Folk Victorian		
Architect/Builder			
Description	The rectangular plan residence is single story with a hipped roof. It has a plain cornice with boxed eaves and full-width porch with simple balustrade. A canvas awning, likely a replacement for an original porch roof, shelters the porch. Windows are double hung wood sash and cladding is drop siding. The ground floor sits above a raised basement and is accessed via a wide set of wooden steps.		
Integrity	More research required, porch roof appears to have been removed and there may be additional alterations.		
Significance	Potentially eligible as contributor		
Notes	*Good example of a folk house if integrity is present*		



Address/code	**817 D Street**		**C**
APN	011-252-05		
Building Name			
Year Built	1884 (spreadsheet)		
Original Use	Residential		
Architectural Style	Folk Victorian		
Architect/Builder			
Description	The rectangular plan residence is single story with a hipped roof. It has a cornice with boxed eaves, ornamental brackets, and paneled frieze. Its full-width porch has a replacement balustrade and an unusual mansard roof. Windows are double hung wood sash with a projecting bay on the main (east) façade. Cladding is drop siding. The ground floor sits above a raised basement and is accessed via a wide set of wooden steps. The front of the house at the basement level is clad in lattice.		
Integrity	More research required, porch appears altered, porch roof may not be original		
Significance	Potentially eligible as contributor		
Notes	*Good example of a folk house, appears related to 813 D next door*		



Address/code	910 D Street		E
APN	011-253-09		
Building Name	San Rafael Post Office		
Year Built	1936		
Original Use	Post office		
Architectural Style			
Architect/Builder			
Description			
Integrity	Lacks integrity		
Significance	Not eligible		
Notes	*City should contact USPS, Tetra Tech looked at it in 2013 and recommended it lacked integrity due to Modernist addition*		



Address/code	**809-11 E Street**		**C**
APN	011-246-08		
Building Name			
Year Built	1885 (spreadsheet)		
Original Use	Residence (duplex)		
Architectural Style	Italianate		
Architect/Builder			
Description	The rectangular plan residence is two story with a hipped roof from which two decorative brick chimneys project. It has a cornice with boxed eaves, ornamental brackets, and paneled frieze. Its partial-width porch has a shed roof and square supports elaborated by scrolled brackets. Replacement windows of different types have been fitted into window openings, some of which have been altered. Cladding drop siding. Side-by-side original partially glazed doors with octagonal panels topped with transoms are accessed via a wide set of wooden steps. A low concrete wall enclosing the property is adorned with abalone shells.		
Integrity	Appears to retain sufficient integrity for district contributor status, more study needed.		
Significance	Good example of Italianate/vernacular duplex, potentially eligible as district Contributor		
Notes	*Appears related to 817 and 813 D, all built around the same time*		



Address/code	**810 E Street**		**A**
APN	011-252-14		
Building Name			
Year Built	1910 (spreadsheet)		
Original Use	Residence		
Architectural Style	Hipped roof cottage		
Architect/Builder			
Description	The rectangular plan residence is single story with a hipped roof from with a large gable over the partial-width porch. The gable end has a louvered vent in an arched opening and is clad in shingles. Boxed eaves have decorative shaped rafter tails. Porch supports are Tuscan columns a top a balustrade of narrowly spaced turned balusters. The front door is fitted with a paneled partially glazed wood door and accessed via a set of wooden steps. Windows are double-hung wood with at least one decorative cottage window on the main (east) façade. The main floor sits atop a raised basement		
Integrity	Retains integrity despite possible replacement of balustrade.		
Significance	Excellent example of vernacular hipped roof cottage, eligible landmark and contributor		
Notes	*Transitional Victorian/craftsman features*		



Address/code	901 E Street		C
APN	011-245-27		
Building Name	E Street Grammar School		
Year Built	1932-1946 (aerials)		
Original Use	School		
Architectural Style	Classical/Mediterranean Revival		
Architect/Builder			
Description	The single story building is roughly rectangular in plan with a hipped roof main volume and a smaller gable roof volume at the south. Large windows are fitted with multiple light windows. The main entrance on E Street has an assemblage of wood multiple light doors, sidelights and transoms. There are decorative quoins flanking the entrance. Cladding is spray-on stucco. There is a basement at the south end of the building.		
Integrity	May retain integrity despite modern stucco, more research needed.		
Significance	Good example of a 1930s school building, appears eligible as a contributor, lacks the distinction of an architectural landmark.		
Notes			





Address/code	1022 E Street		A-
APN	011-204-01		
Building Name	Keaton's funeral Home		
Year Built	1924 (spreadsheet)		
Original Use	Residence		
Architectural Style	Mediterranean Revival with Classical details		
Architect/Builder			
Description	The two story house is roughly rectangular in plan with a tiled mansard roof roof main volume and a smaller gable roof volume at the south. There are similar diminutive roof forms on the projecting porte cochere and partial width front porch, both of which are supported by decorative columns. The recessed entrance is fitted with a wood panel partially glazed door with matching transom and side lights. Porch landing and wide steps are granite. The porte cochere is partially infilled. Cladding is smooth stucco. Windows are double hung wood sash with various sizes and configurations.		
Integrity	Retains integrity despite porte cochere alterations (see 1970s photo)		
Significance	Good example of a Mediterranean Revival house, eligible as a contributor and may also qualify as an individual landmark.		



Address/code	**105 F Street**		**E**
APN	011-194-06		
Building Name			
Year Built	1893 (spreadsheet)		
Original Use	Residence		
Architectural Style	Folk Victorian		
Architect/ Builder			
Description	The single story house is roughly rectangular in plan with a gable on hip roof and full width porch under its own hipped roof. It is clad in drop siding and has tall window openings fitted with replacement windows. The south end of the porch has been enclosed.		
Integrity	Lacks integrity, odd roof form may be alteration, enclosed porch		
Significance	Not eligible		
Notes			



Address/code	**633 Fifth Ave**		**A**
APN	014-084-02		
Building Name			
Year Built	1898 (spreadsheet)		
Original Use	Residence		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The two story house is roughly rectangular in plan with a gable roof. There are projecting two-story bays at the main (north) and west elevations. They are topped with pedimented gables with multiple light windows and fishscale siding. Primary cladding is drop wood siding, with fishscale shingles separating upper and lower window bays. Multiple light windows are fitted into tall openings. The main entrance is roughly centered in the north façade and fitted with a partially glazed paneled wood door. It is sheltered by a partial-width porch with hipped roof and turned posts. A small area at the west end of the porch has been filled in and has a second entrance fitted with a paneled wood door.		
Integrity	Retains integrity despite porch alterations		
Significance	Eligible as district contributor and individual landmark		
Notes	*Pair with adjacent house at 637 Fifth*		



Address/code	**637 Fifth Ave**		**A**
APN	014--084-13		
Building Name			
Year Built	1954 (spreadsheet) c1895 plausible		
Original Use	Residence		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The two story house is roughly rectangular in plan with a gable roof. There are projecting two-story bays at the main (north) and east elevations. They are topped with pedimented gables with multiple light windows and fishscale siding. Primary cladding is drop wood siding, with fishscale shingles separating upper and lower window bays. Multiple light windows are fitted into tall openings. The main entrance is roughly centered in the north façade and fitted with a glazed wood door. It is sheltered by an integral porch with hipped roof and turned posts. There is an exterior staircase at the rear leading to upper floor entrance		
Integrity	Retains integrity despite porch alterations		
Significance	Eligible as district contributor and individual landmark		
Notes	*Pair with adjacent house at 633 Fifth*		



Address/code	634 Fifth Ave		E
APN	014--081-08		
Building Name			
Year Built	1948 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Utilitarian		
Architect/Builder			
Description	The single story commercial building is rectangular in plan with a flat roof. Windows are steel multiple light casement. The centered entrance has double partially glazed wood doors topped with a transom and flanked by wood pilasters. East and north elevations lack fenestration		
Integrity	Retains integrity		
Significance	Not eligible a landmark or contributor		
Notes			



Address/code	638 Fifth Ave		E
APN	014-081-09		
Building Name			
Year Built	1910 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Hipped Roof Cottage with Queen Anne details		
Architect/Builder			
Description	The single story residential building is rectangular in plan with a hipped roof and hipped dormers. There is a bay with hexagonal roof at its southeast corner. The main floor is raised over a basement with a set of wooden steps from the side. Windows are various shapes and materials of replacement windows.		
Integrity	Lacks integrity, windows, porch, other alterations		
Significance	Not eligible as a landmark or contributor due to lack of integrity		
Notes			



Address/code	709 Fifth Ave		E
APN	011-227-02		
Building Name			
Year Built	1941 (spreadsheet)		
Original Use	Supermarket		
Architectural Style	Utilitarian		
Architect/Builder			
Description	The single story commercial building is rectangular in plan with a gabled roof hidden by a parapet. Windows are steel multiple light casement. The main (north) façade is occupied by large divided storefront windows and flanked by square pillars. Main façade cladding is stucco, the balance of the building is board form concrete. The off center entrance has double glazed doors.		
Integrity	Lacks integrity		
Significance	Not eligible as landmark or contributor due to lack of significance and integrity		
Notes			





Address/code	835 Fifth Ave		D
APN	011-224-21		
Building Name	Merrill's Drug and Discount		
Year Built	1921 (DPR)		
Original Use	Commercial		
Architectural Style	Mission		
Architect/Builder			
Description	The single story commercial building is rectangular in plan with a gabled roof hidden by a shaped parapet. The main (north) façade is occupied by large contemporary storefront windows with one roll up vehicle door. Cladding is brick with stuccoed areas. The off center entrance has a contemporary glazed door.		
Integrity	Lacks integrity (see 1970s photo above)		
Significance	Not eligible as landmark or contributor due to marginal significance and lack of integrity		
Notes	*Very similar to 819 Fifth/836 Fourth*		



Address/code	**845 Fifth Ave**		**D**
APN	011-224-01		
Building Name			
Year Built	1920 (spreadsheet)		
Original Use	Multi-family residential		
Architectural Style	Mediterranean Revival		
Architect/Builder			
Description	The three story apartment building is U-shaped in plan with a flat roof and hipped tile parapet with decorative cornice featuring shaped rafter tails. There is a floral frieze below the cornice and decorative swags on spandrel panels. The building is clad in stucco with decorative stone wainscoting and arched main entrance. The recessed door is wood frame and fully glazed with sidelights and decorative fanlights. Fenestration is vertical openings with replacement windows. There is a fire escape on the main (north) façade.		
Integrity	Apparently lacks integrity, replacement windows and wainscoting, more research needed		
Significance	Not likely to be eligible as landmark or contributor due to marginal significance and lack of integrity		
Notes			





Address/code	918 Fifth Ave	7N	**A**
APN	011-221-08		
Building Name			
Year Built	c1900 (DPR)		
Original Use	Multi-family residential		
Architectural Style	Transitional Queen Anne		
Architect/Builder			
Description	The 2.5 story house is roughly rectangular in plan with a gable on hip roof. It is clad in unpainted shingles with clapboard wood siding on the ground floor. Windows are double hung wood sash with a cutaway bay on the main (south) façade. A partial width porch adjacent to the window bay has a shed roof and solid balustrade with Tuscan columns. The wood door has a diamond shaped window and there is a lozenge shaped window adjacent to the door. The ground floor is set atop a raised basement and accessed via a set of wooden steps. A low stone wall encloses the front yard.		
Integrity	Retains integrity (see 1970s photo above)		
Significance	Eligible as landmark and contributor		
Notes			



Address/code	**1409 Fifth Ave**		**E**
APN	011-204-18		
Building Name			
Year Built	1888/1949 (spreadsheet)		
Original Use	Multi-family residential		
Architectural Style			
Architect/Builder			
Description	The two story house is roughly rectangular in plan with a hipped roof. It is clad in shingles and drop siding wood siding. Double hung wood sash windows and some decorative elements reveal nineteenth century origin of building, but its original style and form are unknown. Converted to 5 apartments 1949.		
Integrity	Lacks integrity, specific alterations unknown but not a good example of any historic residential style		
Significance	Not eligible as landmark or contributor due to lack of integrity		
Notes			



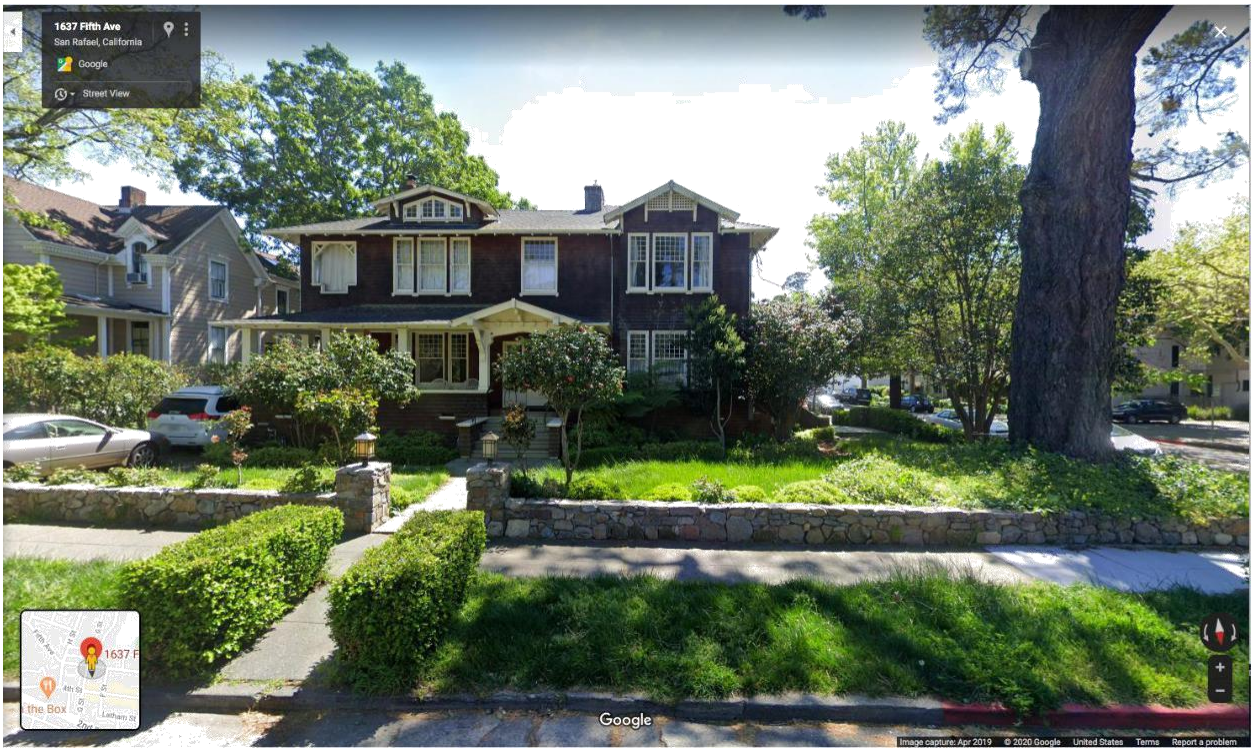
Address/code	**1517 Fifth Ave**	**7N**	**A**
APN	011-202-04		
Building Name			
Year Built	1890/1920 (spreadsheet)		
Original Use	Residential		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The 2.5 story raised basement house is roughly rectangular in plan with a gabled roof. It is clad in narrow clapboard and wide horizontal wood siding. Windows are double hung wood sash. A full-width porch has a hipped roof projecting from the main (north) façade and its east end is enclosed in multiple-light wood windows. Ornamental details include decorative window assemblage with diminutive shed roof on the pedimented front gable, cornice with scrolled bracket and decorative frieze, turned posts and elaborate trim on the porch, and projecting second floor square window bay.		
Integrity	Retains integrity		
Significance	Eligible as landmark and contributor		
Notes			



Address/code	1539 Fifth Ave		B+
APN	011-196-05		
Building Name			
Year Built	1935 (spreadsheet)		
Original Use	Residential		
Architectural Style	Tudor		
Architect/Builder			
Description	The single story raised basement house is U-shaped in plan with a steeply pitched cross-gabled roof. It is constructed of brick with a slate roof and has two decorative brick chimneys. Windows feature leaded diamond panes. The entrance is fitted with a wide paneled wood door.		
Integrity	Retains integrity		
Significance	Eligible as contributor, potentially eligible as landmark		
Notes			



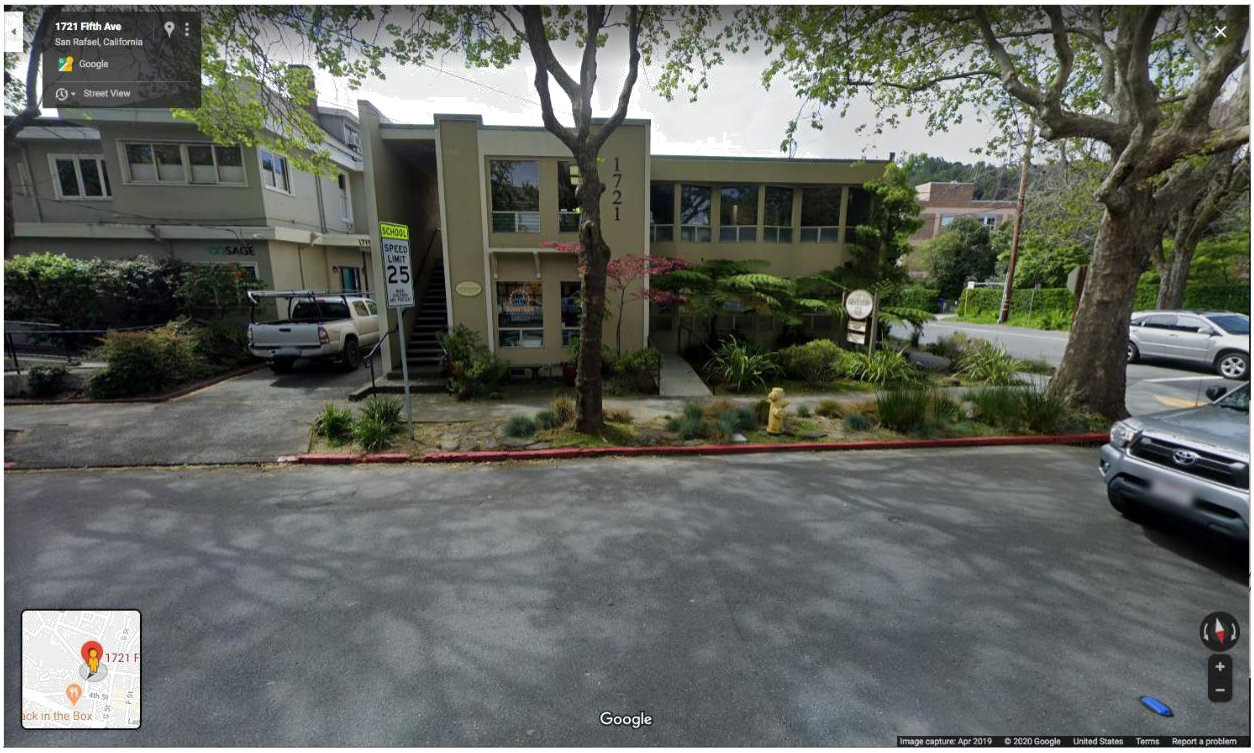
Address/code	1623-1627 Fifth Ave	7N	B
APN	011-320-01 -02 -03 -04		
Building Name			
Year Built	ND		
Original Use	Residential		
Architectural Style	Shingle, Folk Victorian		
Architect/Builder			
Description	Multiple buildings, difficult to decipher Address/code /age etc.		
Integrity	Retain integrity		
Significance	Buildings remain eligible as district contributors		
Notes			



Address/code	1637 Fifth Ave	3S	A
APN	011-194-01		
Building Name			
Year Built	1913/1990 (spreadsheet)		
Original Use	Residential		
Architectural Style	Craftsman		
Architect/Builder			
Description	The two story house is rectangular in plan with hipped roof and large decorative gabled dormers. The house is clad in natural wood shingles. A projecting partial width porch has its own hipped roof and solid parapet. Lavish craftsman-style ornament includes gable-end vents, shaped knee braces, arched porch openings, battered porch columns, and multiple-light cottage windows. The front yard is enclosed in a low stone wall.		
Integrity	Retains integrity		
Significance	Excellent example of Craftsman architecture. Eligible individually and as district contributor		
Notes			



Address/code	1629 Fifth Ave	7N	A
APN	011-194-02		
Building Name	Thomas Morris House		
Year Built	1878 (spreadsheet)		
Original Use	Residential		
Architectural Style			
Architect/Builder	Queen Anne Cottage		
Description	The 1.5 story house is roughly rectangular in plan with steeply pitched cross-gabled roof and decorative gabled dormers. The house is clad in natural wood shingles. A full-width porch has its own hipped roof. The building is obscured by vegetation on available images and details are unclear.		
Integrity	Appears to retain integrity, field photography needed		
Significance	Eligible individually and as district contributor if field visit reveals integrity		
Notes			



Address/code	**1721 Fifth Ave**		**E**
APN	011-192-01		
Building Name			
Year Built	1939 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder	Midcentury Modern		
Description	The two story commercial building has an L-shaped plan with flat roof. The house is clad in natural wood shingles. Its street facades are dominated by ribbon bands of windows, other elevations lack fenestration. Windows are large fixed squares smaller rectangular jalousies below. The main (north) façade is zigzag with a staircase to the second floor in a projecting volume at its east end.		
Integrity	Does not retain integrity to 1939.		
Significance	Not eligible as a contributor or landmark due to lack of significance/integrity		
Notes	*Does not display integrity to 1939, is a common example of a c1960 building*		



Address/code	1800 (1801) Fifth Ave	1S	A
APN	010-291-16		
Building Name	San Rafael Improvement Club		
Year Built	1915/1916 (NRHP)		
Original Use	Panama-Pacific Exhibition Building/local clubhouse		
Architectural Style	Classical Revival		
Architect/Builder	William B. Faville		
Description	The single story building has a roughly square plan and flat/domed roof. Cladding is smooth plaster stucco or concrete. Classical revival ornament includes fluted plasters, cornice and frieze, and formal pediments. The building is obscured by vegetation on available images and details are unclear.		
Integrity	Appears to retain integrity, dome was added after 1983, field photography needed		
Significance	eligible as landmark and contributor		
Notes	*Listed on the NRHP 1984*		



Address/code	712 Fifth Ave		E
APN	011-226-06		
Building Name			
Year Built	1940/1970/1994 (spreadsheet)		
Original Use			
Architectural Style	Minimal Traditional		
Architect/Builder			
Description	The single story building has a T-shaped plan and low pitch hipped roof. It is clad in stucco with brick quoins around the recessed entry. The partially glazed metal replacement door has sidelights and transom and is accessed via an accessible ramp. Windows are double hung two over two wood sash.		
Integrity	Appears to retain integrity despite replacement door and ramp addition.		
Significance	Lacks architectural significance, not eligible as landmark or contributor		
Notes			



Address/code	455 First St /1621 Second St		E
APN	012-054-02		
Building Name			
Year Built	1950 (spreadsheet), appears to be c1900 house converted to multi-unit		
Original Use	residential		
Architectural Style			
Architect/Builder			
Description	The single story building has a roughly rectangular plan and steeply pitched gabled roof with shed dormers. It is clad cement shingle and has replacement windows in vertical openings. The north elevation has been remodeled into apartments with an exterior staircase to the second floor		
Integrity	Lacks integrity		
Significance	Not eligible as landmark or contributor		
Notes			



Address/Code	505 Fourth Street		E
APN	014-123-09		
Building Name	Residence		
Year Built	1924/1930 (spreadsheet),		
Original Use	residential		
Architectural Style	Craftsman		
Architect/Builder			
Description	The single story house has a roughly rectangular plan and medium pitched multi-gabled roof with shed dormers. It is wood clapboard with stucco on the main (north) façade. There is a projecting partial-width porch with battered supports and shaped opening adjacent to a projecting window bay. A shed roof carport projects from the west side of the house.		
Integrity	Lacks integrity, replacement windows, carport, probably stucco over original wood, large neighboring building affects setting		
Significance	Not eligible as landmark or contributor due to marginal significance and lack of integrity		
Notes			



Address/code	**532 Fourth Street**		**E**
APN	014-086-26		
Building Name			
Year Built	1965 (spreadsheet),		
Original Use			
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The two story storefront commercial building is rectangular in plan with flat roof, ground floor retail, and second floor office space. The two storefronts are separated by a driveway that leads under the second floor to the rear parking lot. Cladding is stucco with manufactured stone on the east storefront. Fixed windows are vertical with aluminum frames and doors are fully glazed aluminum frame.		
Integrity	Probably lacks integrity, stone facing, upstairs balustrade, windows appear to be replacements		
Significance	Not eligible as landmark or contributor due to marginal significance and lack of integrity		
Notes			



Address/code	705 Fourth Street		E
APN	011-275-03		
Building Name			
Year Built	1898/1991/2008 (spreadsheet)		
Original Use			
Architectural Style	Queen Anne		
Architect/Builder			
Description	The two story house is roughly rectangular in plan with a gable on hip roof and projecting bays at the north, east, and corner. It is clad in stucco and upper floor windows have been replaced. East and north elevations have been converted to storefront on the ground floor.		
Integrity	Lacks integrity, roof form and decorative window casings are only remnants of original		
Significance	Not eligible as landmark or contributor due to lack of integrity		
Notes			



Address/code	**710 Fourth Street**		**E**
APN	011-227-04		
Building Name	Marin Center for Independent Living		
Year Built	1950s? (spreadsheet), c1930 (aerials)		
Original Use	residential		
Architectural Style	Minimal Traditional/Commercial		
Architect/Builder			
Description	Historic aerials suggest that the southwest portion of the building with cross-gabled roof was originally a small house constructed about 1930. Additions were constructed over the decades, resulting in a hybrid building with multiple roof forms and both horizontal and vertical window shapes. Brick cladding is unlikely to be original		
Integrity	Lacks integrity to 1930		
Significance	Not eligible as landmark or contributor, not a recognizable example of a historic style		
Notes			



Address/code	709-711 Fourth Street	7N	A
APN	011-275-02		
Building Name			
Year Built	1898 (spreadsheet)		
Original Use	Storefront/residential		
Architectural Style	Italianate		
Architect/Builder			
Description	The two story building is rectangular in plan with ground floor retail and upper floor residential. Its mansard roof has a cornice with elaborate shaped brackets. Upper floor windows are tall two over two double hung wood sash and elaborated with decorative hoods and casings. There is a projecting square bay. Cladding is drop siding. A decorative frieze separates the storefront from the upper floor. An original partially glazed wood panel door at the east end of the main (north) façade leads to a staircase to the second floor. Storefronts and storefront entrance are contemporary.		
Integrity	Retains integrity despite modernization of storefront		
Significance	Excellent example of Italianate commercial/residential architecture, eligible as landmark and contributor.		
Notes			



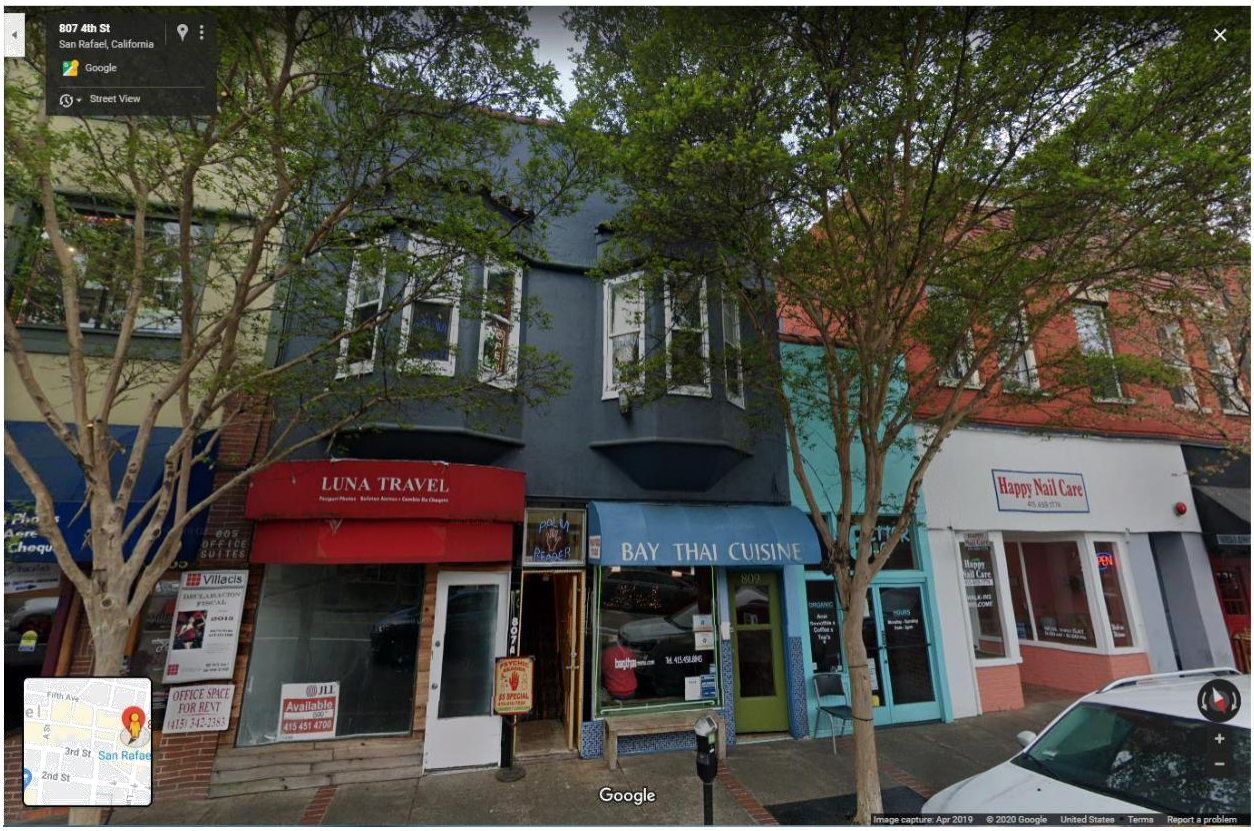
Address/code	**716 Fourth Street**		**E**
APN	011-227-05		
Building Name			
Year Built	1908/1949/1983 (spreadsheet)		
Original Use	Storefront/residential		
Architectural Style			
Architect/Builder			
Description	The two story building is rectangular in plan with ground floor retail and upper floor residential or offices. It is clad in stucco and has a pointed parapet. Tall original window openings on the upper floor are fitted with replacement windows. The ground floor has storefront windows and a rounded streamline modern entrance and awning.		
Integrity	Lacks integrity		
Significance	Hybrid architecture from various eras, not a good example of any historic style, not eligible		
Notes			



Address/code	718-24 Fourth Street		E
APN	011-227-06		
Building Name	Bayside Marin		
Year Built	1918 (spreadsheet)		
Original Use	Storefront		
Architectural Style			
Architect/Builder			
Description	The large single story building is rectangular in plan with a tall shaped parapet and divided storefront windows. The projecting entrance has a gabled roof with plastic tile and shaped knee braces. The building is clad in stucco.		
Integrity	Lacks integrity		
Significance	Not a good example of any historic style, not eligible		
Notes			



Address/code	801-805 Fourth Street	5S2	E
APN	011-273-06		
Building Name	Old San Rafael Mall		
Year Built	1878 (spreadsheet)		
Original Use	Storefront		
Architectural Style			
Architect/Builder			
Description	The three story corner commercial building has storefronts on ground floor Fourth St and Lincoln Ave facades with apartments above. The building is clad in stucco with Roman brick bulkheads. Windows have been replaced and most window openings altered. A projecting second and third floor bay at the corner is the only recognizable element of the building's nineteenth century origins.		
Integrity	Lacks integrity		
Significance	Not a good example of any historic style, not eligible		
Notes			



Address/code	**807 Fourth Street**		**E**
APN	011-273-05		
Building Name			
Year Built	1903 (spreadsheet)		
Original Use	Storefront		
Architectural Style			
Architect/Builder			
Description	The two story commercial building is rectangular in plan with gabled roof concealed by parapet and storefronts on ground floor with apartments above. The building is clad in stucco. Tall windows in upper floor bays are fitted with metal windows. Bays are topped with tile roofs A projecting second and third floor bay at the corner is the only recognizable element of the building's nineteenth century origins.		
Integrity	Lacks integrity		
Significance	Not a good example of any historic style, not eligible		
Notes			



Address/code	812 Fourth Street	5S2	B
APN	011-224-11		
Building Name	Redhill Imports		
Year Built	1920/1950/1971 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Mission		
Architect/Builder			
Description	The one story storefront commercial building is rectangular in plan with arched roof and shaped parapet. Its recessed main entrance has an arched door flanked by arched multiple light wood windows. Divided storefront windows are contemporary.		
Integrity	Appears to retain integrity, more research needed		
Significance	Good if modest example of Mission commercial architecture, not a landmark, potentially a district contributor		
Notes	*Adjacent building to the east (806) apparent district contributor does not appear on any spreadsheet tab is not in exclusion area*		



Address/code	827-831 Fourth Street	3S	A
APN	011-273-02		
Building Name	Rafael Florist/Gold Rush Jewelers		
Year Built	Before 1924 (Sanborn Maps)		
Original Use	Commercial (auto showroom)		
Architectural Style	Mission		
Architect/Builder			
Description	The one story storefront commercial building is rectangular in plan with gabled roof concealed by a parapet. The building is stucco with terracotta ornament including cartouche and arch motif at parapet corners. Storefront windows are topped by floral frieze and large multiple light transoms with decorative turned posts and scrolled moulding. The partially glazed wood door is topped by a transom and set in an elaborately shaped arch. A cartouche with ornate floral and candle motifs tops the door. 827 Fourth originally had a vehicle door leading to a repair area behind the showroom and retains scrolled moulding and parapet that matches the primary building.		
Integrity	Retains integrity		
Significance	Excellent example of Mission architecture, eligible as landmark and district contributor		
Notes			



Address/code	**836 Fourth Street**		**B**
APN	011-224-13		
Building Name			
Year Built	1924 (spreadsheet, Sanborns)		
Original Use	Commercial , auto showroom		
Architectural Style	Mission		
Architect/Builder			
Description	The single story commercial building is rectangular in plan with a gabled roof hidden by a shaped parapet. The main (south) façade is occupied by large contemporary storefront windows and centered entrance. Cladding is brick with stuccoed areas. Decorative corbelling is also executed in brick.		
Integrity	Retains integrity		
Significance	Good simple example of Mission architecture, potential district contributor		
Notes	*Similar to 831 Fifth but better example of the style*		



Address/code	**846 Fourth Street**		B
APN	011-224-14		
Building Name			
Year Built	1908-1924 (Sanborn Maps)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The two story commercial building is rectangular in plan with a flat roof and parapet and decorative tiled shed roof with shaped rafter tails. The main (south) façade is occupied by large contemporary storefront windows and centered entrance. Cladding is glazed brick with decorative tile bulkhead. Decorative frieze separating ground and second stories is also executed in brick. Tripartate upstairs windows are fitted with replacements. The recessed entrance is flanked by slanted storefronts and fitted with a fully glazed wood panel door. There are divided light transoms above the storefront. The entrance to the upstairs is fitted with a replacement door.		
Integrity	Retains integrity		
Significance	Good example early twentieth century commercial storefront, potential district contributor		
Notes	*Same parcel as 842 Fourth*		



Address/code	**842 Fourth Street**		**B**
APN	011-224-14		
Building Name			
Year Built	1929 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Mission		
Architect/Builder			
Description	The single story commercial building is L-shaped in plan with a flat roof and stepped parapet. The main (south) façade is occupied by small windows above a paneled bulkhead and two entrances at its west end. A metal awning with a small marquee projects from the façade above the storefront level. Transoms above the awning appear to have been partially covered. There is a cornice between transoms and parapet. The building is clad in brick with columns articulated in contrasting color brick and tile column bases		
Integrity	Retains integrity, probable alterations to storefront level are sympathetic		
Significance	Good example of Mission architecture, potential district contributor		
Notes	*Same parcel as 842 Fourth*		



Address/code	866 Fourth Street	5S2	E
APN	011-224-20		
Building Name			
Year Built	1953 (spreadsheet)		
Original Use	Commercial		
Architectural Style			
Architect/Builder			
Description	The single story commercial building is rectangular in plan with arched roof and flat parapet. Three storefront bays are divided by concrete beams. The building is clad in stucco. Storefront windows and doors are contemporary.		
Integrity	Integrity unknown		
Significance	Not eligible, not a good example of any historic architectural style		
Notes			



Address/code	874 Fourth Street		**E**
APN	011-224-17		
Building Name	Marin Municipal Water Department		
Year Built	1903 (spreadsheet)		
Original Use	Water Department		
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The municipal/commercial building has a two story 1903 municipal building set back on the lot with a single story storefront addition adjacent to the sidewalk. The original building has a side-gabled roof and stucco cladding with highly decorative terra cotta ornament. The storefront is also stucco and has a shed tile roof at the center entrance, but it is contemporary in character.		
Integrity	Lacks Integrity, intrusive main façade addition 1951-1964.		
Significance	Architecturally significant original building ineligible, lack of integrity		
Notes			

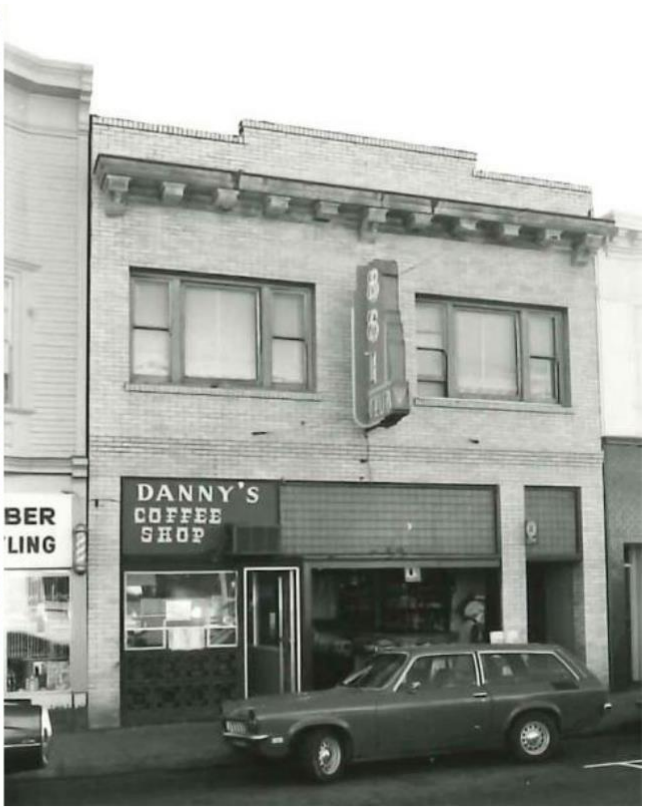


Address/code	882-884 Fourth Street (1010 Lootens)	7N	B
APN	011-224-18		
Building Name	Masonic Building		
Year Built	1910 (spreadsheet)		
Original Use	Lodge/Storefront Commercial		
Architectural Style	Classical Revival		
Architect/Builder			
Description	The lodge/commercial building is two story and rectangular in plan with a flat roof. The building is clad in brick and has facades on Fourth and Lootens. The heavy cornice features decorative brackets and dentil moulding, there is also decorative moulding separating upper and lower floors. Storefronts and doors have been replaced, and original transoms are covered except over the central entrance on Fourth Street leading to the lodge rooms.		
Integrity	Retains sufficient integrity for listing as district contributor despite replacement windows and storefronts.		
Significance	Eligible as district contributor, lacks integrity for landmark status		
Notes			



Address/code	881-883 Fourth Street	7N	A
APN	011-271-03		
Building Name			
Year Built	1905 (DPR)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The commercial building is two story and rectangular in plan with a flat roof and stepped parapet. The building is clad in narrow wood siding with stucco at the ground floor. The cornice features decorative rafter tails and dentil moulding. Projecting upstairs bays have tripartite replacement windows Replacement storefronts are contemporary and not sympathetic.		
Integrity	Retains integrity		
Significance	Eligible as district contributor and landmark		
Notes	*881 Fourth right frame, adjacent building 877 Fourth (center frame) appears to be contributor but was eliminated, different building described in initial condition assessment*		





Address/code	885-887 Fourth Street		**A**
APN	011-271-02		
Building Name			
Year Built	1910/1975 (spreadsheet)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The commercial building is two story and rectangular in plan with a flat roof. It has a stepped parapet and heavy wood cornice with decorative rafter tails. Tripartite upstairs windows have been fitted with fairly sympathetic replacement windows. The building is clad in brick with mouldings and windows sills also executed in brick. Original obscure transom has been retained above the door to the upstairs. Replacement storefront and doors are sympathetic.		
Integrity	Retains integrity despite replacement window and storefront, appearance similar to 1970s photo		
Significance	Eligible as landmark and contributor		
Notes			



Address/code	889-891 Fourth Street		**E**
APN	011-271-01		
Building Name			
Year Built	1908/1956 (spreadsheet)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The commercial building is two story and rectangular in plan with a flat roof and heavy plain cornice. There is a rounded upper bay at the corner and a slanted bay on Lootens. Cladding is stucco. Some upper windows have been replaced and some are double hung wood sash. Terrazzo flooring and storefront configuration suggest it was installed in 1956		
Integrity	Lacks integrity		
Significance	Not a good example of any historic building type, not eligible for listing		
Notes			





Address/code	900 Fourth Street		**E**
APN	011-222-05		
Building Name	El Camino Theatre		
Year Built	1925-30 (Sanborns/aerials)		
Original Use	Cinema		
Architectural Style	Art Deco?		
Architect/Builder			
Description	The large commercial building is two story and rectangular in plan with a flat roof. It is clad in stucco with continuous windows along upper and ground floors on Fourth Street. Some remnants of Art Deco details can be discerned at sides and rear but building is missing ornate tower, marquee, and other character-defining elements		
Integrity	Lacks integrity, does not convey significance		
Significance	Not eligible because of lack of integrity		
Notes			



Address/code	917 Fourth Street	7N	A
APN	011-263-08		
Building Name	California Bakery		
Year Built	c1920 (spreadsheet)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The commercial building is one story and rectangular in plan with a flat roof. It is clad in stucco and has ornate terracotta decorative cornice and moulding on its tall parapet. It has a paneled frieze and shell, Grecian urn, and botanical motifs. The transom has shaped openings divided by diminutive turned posts and fitted with multiple-light windows. There is a small marquee on the upper façade. The storefront is contemporary		
Integrity	Retains sufficient integrity to qualify as district contributor and landmark		
Significance	Excellent example of 1920s commercial architecture, eligible as district contributor and landmark		
Notes			



Address/code	925 Fourth Street		B
APN	011-263-07		
Building Name			
Year Built	1928 (spreadsheet)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The commercial building is two story and rectangular in plan with a flat roof. It is clad in stucco and has ornate terracotta decorative surrounds on vertical upstairs windows, which are fitted with vinyl replacement sash. A decorative balconet at the mezzanine level has a shaped opening and is flanked by transom divided by diminutive turned posts. The storefront is contemporary		
Integrity	Retains sufficient integrity to qualify as district contributor but not as landmark		
Significance	Good example of 1920s commercial architecture, eligible as district contributor		
Notes			



Address/code	1118 Fourth Street	3S	**A**
APN	011-215-04		
Building Name	Orpheus/Rafael Theatre		
Year Built	1920/1938 (spreadsheet/Cinema Treasures)		
Original Use	Cinema		
Architectural Style	Streamline Moderne		
Architect/Builder			
Description	The small theater building occupies a single parcel. Its façade is dominated by a tall pylon marquee with neon letters spelling “Rafael” and the curved horizontal motif that characterizes Streamline Moderne architecture. The building’s parapet is stepped up to the pylon sign. There is a marquee with streamline neon atop a curved awning with the same motif. The original entrance and ticket booth have been removed and replaced with a recessed contemporary entrance. Original terrazzo sidewalks have been preserved.		
Integrity	Retains integrity despite entrance replacement		
Significance	Good example of 1930s cinema architecture, eligible as landmark and district contributor		
Notes			



Address/code	**1122-1132 Fourth St**		**E**
APN	011-215-02		
Building Name			
Year Built	1916 (spreadsheet)		
Original Use	Storefront Commercial/apartments		
Architectural Style	Art Deco		
Architect/Builder			
Description	The five story building is rectangular in plan with a flat roof. Upper floor windows are paired and have been fitted with a combination of hung replacement windows and horizontal sliding sash. They are separated by restrained pilasters that reference Art Deco architecture, as does the minimalist decoration at the cornice. Panels between floors have grooved moulding. There are pilasters with stylized Corinthian capitals at the storefront level; other elements of the ground floor are unsympathetic replacements including a projecting storefront		
Integrity	Lacks integrity, windows, projecting storefront		
Significance	Not eligible for listing		
Notes	*Closely related to Albert building next door at 1010 B Street (1138-1146 Fourth)* NOT INCLUDED IN GROUP OF 160 BUT WAS LOOKED AT BECAUSE IT WAS PART OF PHOTO SET		



Address/code	**1125-1139 Fourth St**		**C**
APN	011-261-31		
Building Name			
Year Built	1892/1893/1920 (spreadsheet)		
Original Use	Storefront Commercial/apartments		
Architectural Style			
Architect/Builder			
Description	The two story building is rectangular in plan with a flat roof and parapet with decorative tiled shed roof. It is clad in stucco with nine bays divided by stylized pilasters. Upper floor windows are paired and have been fitted with vinyl replacement windows. There is a decorative frieze with building/sunrise/tree motif above each window. Historic storefronts at the center of the building have wooden doors and divided transoms. Storefronts at either end are contemporary		
Integrity	Probably retains integrity despite window/storefront replacement, more research needed		
Significance	Appears eligible as landmark and district contributor, unusually detailed frieze		
Notes			





Address/code	**1219-1223 Fourth St**		**E**
	1225 Fourth St	**5S2**	**A**
APN	011-255-28		
Building Name	Grosjean & Co.		
Year Built	Prior to 1887 (Sanborns)		
Original Use	Storefront Commercial		
Architectural Style			
Architect/Builder			
Description	The parcel has three single-story rectangular plan storefront commercial buildings. The two buildings at the east are clad in stucco and have terracotta ornament with large ceramic tile at the bulkhead. 1225 Fourth Street at the west end of the parcel has a wooden cornice elaborated with ornate brackets, paneled frieze, dentil moulding and decorative pediment above Wood siding on the upper façade is rusticated and there are divided light transoms above the storefront. Storefront is contemporary		
Integrity	East end does not retain integrity (upper photo). West end retains integrity (lower photo).		
Significance	eligible as landmark and district contributor, unusual example of nineteenth century wood commercial facade		
Notes			



Address/code	1222-1230 Fourth Street	5S2	**E**
APN	011-212-06		

Building Name	Central Hotel
Year Built	1864 (spreadsheet)
Original Use	Hotel
Architectural Style	
Architect/Builder	
Description	The three story rectangular plan storefront commercial building has a flat roof with simple cornice. It is clad in smooth plaster stucco with steel casement windows. Storefronts are contemporary.
Integrity	Lacks integrity, building does not resemble historic Central Hotel
Significance	Not eligible as landmark or district contributor, nothing is left of the Central Hotel building and its c1930 current appearance is undistinguished.
Notes	



Address/code	1242-1244 Fourth Street		**A**
APN	011-212-14		
Building Name	Peter Building		
Year Built	1893 (spreadsheet)		
Original Use	Commercial		
Architectural Style			
Architect/Builder			
Description	The two story rectangular plan storefront commercial building has a flat roof with decorative cornice and peaked roof on projecting corner bay. The building is brick with projecting bays on both C and Fourth Street facades executed in wood. Window openings are vertical and fitted with unsympathetic replacements. Window bays have their own cornices with dentil moulding and paneled frieze, and one is topped with an ornamental pediment. A single arched window near the west end of the south façade has a decorative blind transom. Storefronts are separated by round brick pilasters which appear originally to have been plastered and are topped with obscured glass transoms. Storefronts are contemporary.		
Integrity	Retains integrity despite window replacement		
Significance	eligible as landmark and district contributor, excellent example of nineteenth century commerical building		
Notes			



Address/code	1300 Fourth Street	3S	**A**
APN	011-205-08		
Building Name	Bank of Italy		
Year Built	1928 (spreadsheet)		
Original Use	Bank		
Architectural Style	Art Deco/Spanish Revival		
Architect/Builder			
Description	The tall single story building is rectangular in plan with a hipped tile roof. Its large window bays are separated by heavy stylized fluted pilasters topped with ornate capitals featuring an eagle motif. Shaped window openings have elaborately scrolled moulding. The main (Fourth Street) façade has medallions with the Bank of Italy's sailing ship emblem. The carved Bank of Italy name over the main entrance has been removed. Original sconces flank the main entrance. Windows and doors are contemporary.		
Integrity	Retains integrity despite window replacement		
Significance	Unique example of a bank building, eligible as landmark and contributor		
Notes			



Address/code	1301 Fourth Street	5S2	E
APN	011-253-10		
Building Name	Hayes		
Year Built	1987 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	Per spreadsheet 1987 replacement of nineteenth century building. Architecture displays nods to historic period building design but is not a replica of a historic building		
Integrity	Not historic		
Significance	Not historic		
Notes			



Address/code	1313-1317 Fourth Street	7N	E
APN	011-253-04		
Building Name	Hayes		
Year Built	1987 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	Adjacent to 1301 Fourth St. Per spreadsheet 1987 replacement of nineteenth century building. Architecture displays nods to historic period building design but is not a replica of a historic building		
Integrity	Not historic		
Significance	Not historic		
Notes			



Address/code	1310 Fourth Street	7N	E
APN	011-205-09		
Building Name			
Year Built	before 1894 (Sanborns)		
Original Use	Commercial		
Architectural Style			
Architect/Builder			
Description	The single story building is rectangular in plan with a gabled roof hidden by a stepped parapet. Tall upper floor windows are fitted with replacement windows and have decorative crowns. The building is clad in stucco. The storefront and entrance are contemporary.		
Integrity	Lacks integrity, window replacement, stucco, storefront		
Significance	Not eligible, modest example lacking integrity		
Notes			



Address/code	1321 Fourth Street	7N	B
APN	011-253-03		
Building Name			
Year Built	c1871 (DPR)		
Original Use	Commercial		
Architectural Style	Italianate		
Architect/Builder			
Description	The two story building is rectangular in plan with a flat roof. Tall upper floor windows are fitted with double hung wood sash and feature highly decorative surrounds and crowns. The building is clad in rusticated smooth plaster stucco with decorative quoins at the corners. The contemporary storefront has a paneled frieze and is sympathetically designed.		
Integrity	Retains sufficient integrity for district despite loss of original cornice		
Significance	Eligible as district contributor, lacks integrity required for landmark status		
Notes			



Address/code	**1327-1337 Fourth Street**		**D**
APN	011-253-02		
Building Name	Gordon's Opera House		
Year Built	1989 (spreadsheet) but architecture reveals a historic period building		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two story building is rectangular in plan with a flat roof and stepped parapet. Tall upper floor windows are fitted with vinyl replacement windows decorative surrounds and crowns. The building is clad in stucco and has minimal decorative features. Most storefront fabric is contemporary although two have original transoms under awning.		
Integrity	Lacks integrity		
Significance	May be historically significant but in its current form it is not a good example of a historic architectural style.		
Notes			



Address/code	1322-1328 Fourth St	3S	A
APN	011-205-11		
Building Name	Mahon House, Butchart Building		
Year Built	1869 (spreadsheet)		
Original Use	Storefront/Hotel		
Architectural Style	Second Empire		
Architect/Builder			
Description	The two story building is rectangular in plan with a mansard roof and arched roof dormers. Tall upper floor windows are fitted with vinyl replacement windows and have highly decorative surrounds and crowns. The building is brick. Storefront bays are separated by pilasters with Corinthian capitals. The centered entry to the second floor is fitted with fully glazed wood door, transom, and sidelights. Most storefront fabric is contemporary.		
Integrity	Retains integrity despite window and storefront replacement.		
Significance	Eligible as landmark and district contributor		
Notes			



Address/code	**1345 Fourth Street**		**B**
APN	011-253-01		
Building Name			
Year Built	1930 (spreadsheet)		
Original Use	Storefront		
Architectural Style	Art Deco		
Architect/Builder			
Description	The single story building is rectangular in plan with a flat roof and stepped parapet. The building is clad in stucco. Fluted columns and cornice exhibit typical Art Deco style. Storefront and door are contemporary		
Integrity	Retains integrity despite storefront replacement.		
Significance	Eligible as district contributor, not sufficiently distinguished for landmark status		
Notes			



Address/code	1344-46 Fourth Street		E
APN	011-205-13		
Building Name			
Year Built	1904/1967 (spreadsheet)		
Original Use	Storefront		
Architectural Style	Art Deco		
Architect/Builder			
Description	The single story building is rectangular in plan with a flat roof and parapet. Projecting upstairs window bays are topped by a cornice. The building is clad in stucco. Fluted columns and cornice exhibit typical Art Deco style. Storefront and door are contemporary		
Integrity	lacks integrity		
Significance	Not Eligible, lack of significance/integrity		
Notes			



Address/code	1350 Fourth St (1040 D St)		D
APN	011-205-14		
Building Name			
Year Built	1903 (spreadsheet)		
Original Use	Storefront		
Architectural Style	Mission		
Architect/Builder			
Description	The two story building is rectangular in plan with a flat roof with decorative hipped roof at the south end of the building. Upper floor windows have divided lights in arched openings. The building is clad in stucco. Storefront and door are contemporary		
Integrity	Lacks integrity, roof appears to have lost tile and decorative features, bulkhead altered		
Significance	Appears ineligible, lack of significance/integrity		
Notes			



Address/code	**1400 Fourth Street**		**E**
APN	011-204-08		
Building Name			
Year Built	1958 (spreadsheet)		
Original Use	Storefront		
Architectural Style	Midcentury Utilitarian		
Architect/Builder			
Description	The two story building is rectangular in plan with a flat roof. The building is constructed of concrete masonry units and lacks decorative features. Upper floor windows are square steel casement. Aluminum frame doors and storefronts appear original. A heavy soffit/awning has been installed above the storefronts.		
Integrity			
Significance	Undistinguished midcentury building, Not Eligible, lack of significance		
Notes	*This was subsequently dropped, and 1408 Fourth was added for consideration. It provides a better example of modernism than 1400 or 1414*		



Address/code	**1414 Fourth Street**		**E**
APN	011-204-17		
Building Name			
Year Built	1958 (spreadsheet)		
Original Use	Storefront/office		
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The building is L-shaped in plan in plan with a single story volume near the street and a two story volume recessed behind a parking lot. It has flat roof and is constructed of concrete masonry units. It lacks decorative features. Upper floor windows are rectangular. Aluminum frame doors and storefronts appear original. A heavy soffit/awning has been installed above one of the storefronts.		
Integrity			
Significance	Undistinguished midcentury building, Not Eligible, lack of significance		
Notes	*1408 Fourth not included, better example of modernism than 1400 or 1414*		



Address/code	**1444- 1446 Fourth Street**		**E**
APN	011-204-15		
Building Name			
Year Built	1915/1965 (spreadsheet)		
Original Use	Storefront		
Architectural Style			
Architect/Builder			
Description	Two adjacent storefront buildings on the parcel are nearly identical in form, style and plan. They feature tall parapets, stucco cladding, brick bulkheads, and contemporary storefronts. They exhibit the typical plan and form of an early twentieth century storefront building but no architectural details associated with that era. Nor are they good examples of midcentury architecture.		
Integrity			
Significance	Undistinguished buildings not eligible as landmarks or contributors.		
Notes			





Address/code	1447 Fourth Street	7N	A
APN	011-251-01		
Building Name			
Year Built	c1916 (DPR)		
Original Use			
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The tall single story building is rectangular in plan with a mansard tile roof and exposed rafter tails. It is clad in stucco with terracotta ornament including paneled frieze with floral motif and turned posts. Storefront bays are separated by wide pilasters with granite bases. Their tall rectangular windows are topped with arched transoms with wood frame divided lights and decorative brackets. Two recessed entrances have been created at the original corner entrance.		
Integrity	Retains integrity (see 1970s photo above)		
Significance	Excellent example of Spanish Revival Commercial architecture, eligible as landmark and contributor.		
Notes			



Address/code	**1504-1512 Fourth St**		**B**
APN	011-202-14		
Building Name			
Year Built	1929 (spreadsheet)		
Original Use			
Architectural Style	Art Deco/Spanish Revival		
Architect/Builder			
Description	The large single story building is rectangular in plan with flat roof. It is clad in stucco with terracotta ornament including ornate floral frieze and lions' heads flanking the main entrance. Storefront bays are separated by minimalist pilasters with granite bases. Original transoms have been covered. Bulkhead is tile, and storefronts are contemporary.		
Integrity	Retains sufficient integrity for district contributor status because of well-preserved ornate frieze		
Significance	eligible as contributor, lacks integrity required for landmark		
Notes			



Address/code	**1508-1522 Fourth Street**		**E**
APN	011-202-11		
Building Name			
Year Built	1928 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	The single story storefront commercial building is rectangular in plan with stepped parapet. It is clad in stucco and has aluminum frame storefronts and glazed doors. It exhibits no characteristics of historic architecture		
Integrity			
Significance	Not eligible as contributor or landmark		
Notes			



Address/code	**1531 Fourth Street**		**B+**
APN	011-242-11		
Building Name			
Year Built	1931 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	The single story auto-oriented commercial building is rectangular in plan with a rounded volume projecting from its main (north) facade. It is clad in stucco and has industrial sash windows on its east elevation. There are three large vehicle openings at the north and east of the rectangular volume. The rounded volume is almost completely glazed, with a fully glazed double door near its junction with the main building.		
Integrity	Retains integrity		
Significance	Eligible as contributor and possibly landmark, good example of early auto-oriented building		
Notes			



Address/code	**1533 Fourth Street**		**B**
APN	011-242-10		
Building Name			
Year Built	1925 (spreadsheet)		
Original Use			
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The two story commercial building is rectangular in plan with decorative shed roof at the main (north) façade. The building is clad in stucco and has terracotta ornament with floral and shield motif. Upper story windows are fitted with multiple light wood sash and topped with ornamental hoods. The central entrance had a large arched surround with Romanesque moulding. Vertical wood cladding and small windows have replaced what were likely originally storefronts.		
Integrity	Retains integrity despite storefront alterations, highly decorative features have been retained.		
Significance	Eligible as contributor and possibly landmark, good example of Spanish/Mediterranean architecture		
Notes			



Address/code	**1539 Fourth Street**		**E**
APN	011-242-09		
Building Name			
Year Built	1923/1961 (spreadsheet) probably older (drop siding with historic advertising side elevation		
Original Use			
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The two story commercial building is rectangular in plan with decorative shed roof at the main (north) façade. The building is clad in stucco tripartite upper story windows fitted with vinyl sash. Storefronts are contemporary.		
Integrity			
Significance	Lacks architectural significance, not eligible		
Notes			



Address/code	**1545 Fourth Street**		**E**
APN	011-242-07		
Building Name			
Year Built	1947 (spreadsheet)		
Original Use			
Architectural Style	Streamline Moderne		
Architect/Builder			
Description	The two story commercial building is rectangular in plan with flat roof. The building is clad in stucco tripartite upper story windows fitted with vinyl sash. Simple grooved columns adorn the corners and center of the building. There is a grooved metal awning over the storefront. Storefronts are contemporary with stone tile.		
Integrity	Lacks integrity, windows, stone tile		
Significance	Not eligible as landmark or contributor		
Notes			



Address/code	1553-1555 Fourth St	7N	B
APN	011-242-04		
Building Name			
Year Built	1926 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two story commercial building is rectangular in plan with flat roof and brick cladding and cornice. Upper story windows fitted with double hung wood sash. A slightly projecting entrance has a gabled roof form with arched opening. It is stucco, with terracotta cartouche and swag. Decorative transoms are multiple light wood frame. Storefronts have tile bulkheads and contemporary doors.		
Integrity	Retains integrity		
Significance	eligible as contributor, lacks significance required for landmark status		
Notes			



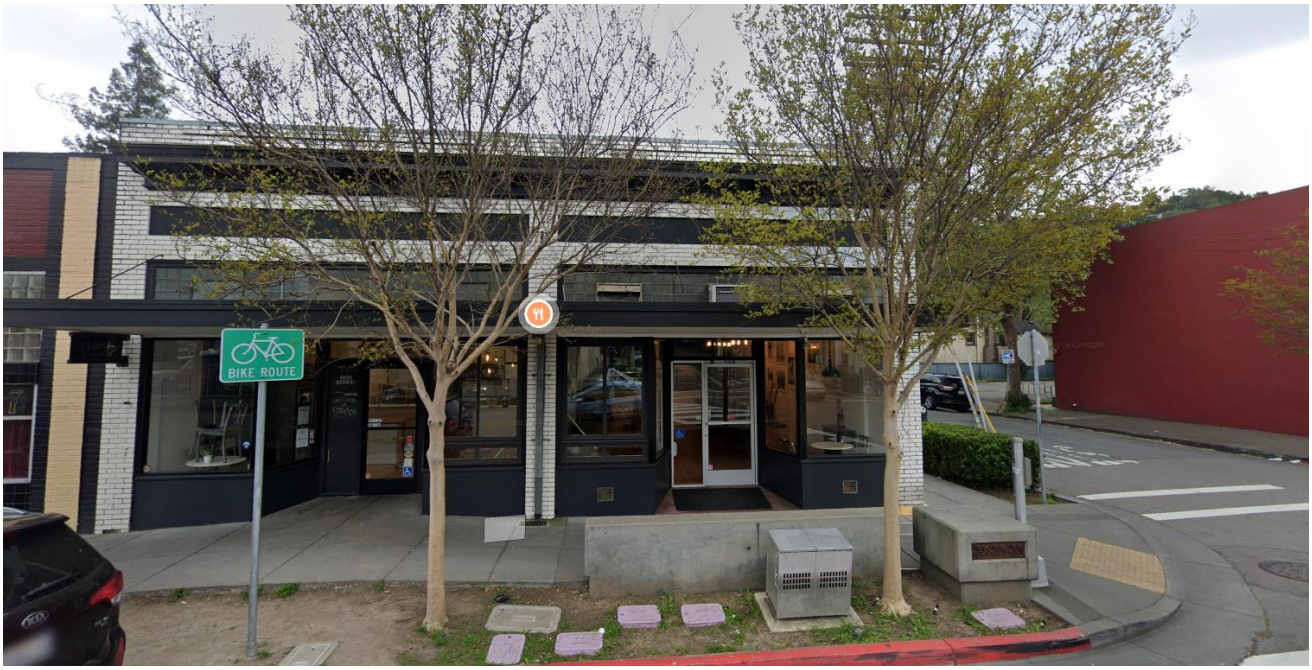
Address/code	**1560 Fourth Street**		**E**
APN	011-196-11		
Building Name			
Year Built	1938 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	The single story commercial building is rectangular in plan with flat roof and stepped parapet. It clad is stucco, with shaped doorways at its east and west ends. Flush storefronts have multiple lights divided by heavy wood frames and doors at the center of the building		
Integrity			
Significance	Not eligible, lacks architectural significance		
Notes			



Address/code	1569 Fourth Street		E
APN	011-242-01		
Building Name			
Year Built	1928 (spreadsheet), apparent nineteenth century building.		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two story commercial-residential building is rectangular in plan with hipped roof and parapet. It clad is stucco, with drop wood siding at rear and side elevations. Double hung wood windows with arched tops and decorative surrounds and roof form indicate the building's probable origin as an Italianate house. Storefronts are contemporary.		
Integrity	Lacks integrity, stucco, parapet, storefronts		
Significance	Not eligible, lacks integrity		
Notes			



Address/code	**1605-1611 Fourth St** B
APN	011-241-32
Building Name	
Year Built	1927 (spreadsheet)
Original Use	
Architectural Style	Spanish Revival
Architect/Builder	
Description	The single story storefront building is irregular in plan with flat roof and decorative tiled shed roof on the main (north) facade. It clad is stucco, with drop wood siding at rear and side elevations. There is a simple paneled frieze above the four storefront bays. Large awnings cover the transom area. Slanted storefronts have original tile bulkheads (some of which have been painted) and fully glazed wood doors.
Integrity	Retains integrity
Significance	Simple but good example of Spanish Revival commercial architecture, eligible as district contributor, probably not distinguished enough for landmark status
Notes	



Address/code	**1617 Fourth Street**		**B**
APN	011-241-01		
Building Name			
Year Built	1920 (spreadsheet)		
Original Use			
Architectural Style	Spanish Revival		
Architect/Builder			
Description	The single story storefront building is rectangular in plan with flat roof and parapet with decorative cornice on the main (north) facade. The building is glazed brick, which is plastered at rear and side elevations. Original transoms have small square panes with obscured glass. A heavy awnings projects over the sidewalk below transoms. Slanted storefronts have original bulkheads and fully glazed aluminum replacement doors.		
Integrity	Retains integrity despite door replacement		
Significance	Simple but good example of commercial architecture, eligible as district contributor, probably not distinguished enough for landmark status		
Notes			



Address/code	**1701 Fourth Street**		**C**
APN	011-232-03		
Building Name			
Year Built	1925 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	The single story storefront building is rectangular in plan with flat roof and stepped parapet with decorative cornice on the main (north) facade. It clad is stucco. There is a simple paneled frieze above the transoms, which have shaped openings and divided lights. The three storefront bays are contemporary		
Integrity	May retain integrity, more study needed, stucco may not be original		
Significance	Possibly eligible as district contributor, not distinguished enough for landmark status		
Notes			



Address/code	**1714 Fourth Street**		**C**
APN	011-192-08		
Building Name			
Year Built	1951 (spreadsheet)		
Original Use	Service station		
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The single story storefront building has a roughly rectangular-plan front volume with flat roof and projecting porte cochere at the east. The front (south) end has a curved corner is fully glazed on the south and east. A heavy awning, also rounded at the corner, projects below the parapet. A second story adjacent to the porte cochere has flat roof and industrial sash windows. There is an L-shaped wing at the rear (north) with open bays for vehicles.		
Integrity	May retain integrity, more study needed, glass not original		
Significance	Possibly eligible as district contributor, not distinguished enough for landmark status		
Notes			



Address/code	**1848 Fourth Street**		B
APN	010-291-35		
Building Name			
Year Built	1947 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Streamline Moderne/Stripped Classicism		
Architect/Builder			
Description	The single story storefront building has a rectangular plan and flat roof with stepped parapet. It is constructed of board form concrete with a decorative door surround featuring stylized fluted columns and dentil moulding. Transoms are covered with metal panels but may be extant. Storefronts and doors are contemporary		
Integrity	Retains integrity despite storefront and door replacement		
Significance	eligible as district contributor, rare example of stripped classical detailing, not distinguished enough for landmark status		
Notes			



Address/code	1850-1852 Fourth St	7N	A
APN	010-291-57		
Building Name			
Year Built	1922 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Art Deco/Spanish Revival		
Architect/Builder			
Description	The two story storefront building has a rectangular plan and flat roof with clay tile parapet. It is clad in stucco with terracotta ornament including an elaborate frieze at the cornice, diminutive balconet at the center of the upper façade, and detailing between stories. Paired upper story windows are fitted with double hung multiple light wood sash. Transoms are also multiple light wood. Original glazed wood doors are at the center and west end of the building. Storefronts and bulkheads are contemporary		
Integrity	Retains integrity despite storefront replacement		
Significance	eligible as district contributor and landmark		
Notes			



Address/code	**963-977 Grand Av**		**D**
APN	014-123-10		
Building Name			
Year Built	1956		
Original Use			
Architectural Style			
Architect/Builder			
Description	The one-story building has a flat roof and long, narrow U-shaped plan. The building is an early example of a strip shopping center with parking in front of the building. There is a slit-face rock bulkhead, as well as vertical strips at both ends of the long recessed volume. Elsewhere, the building is clad in smooth stucco. Large storefronts line the main façade. The projecting volumes at either end have higher roofs than the rest of the building and flat awnings above the storefront windows. Heavy soffits above storefronts on the recessed volume are canted.		
Integrity	Appears to retain integrity		
Significance	Lacks architectural distinction, not eligible as landmark or contributor		
Notes			

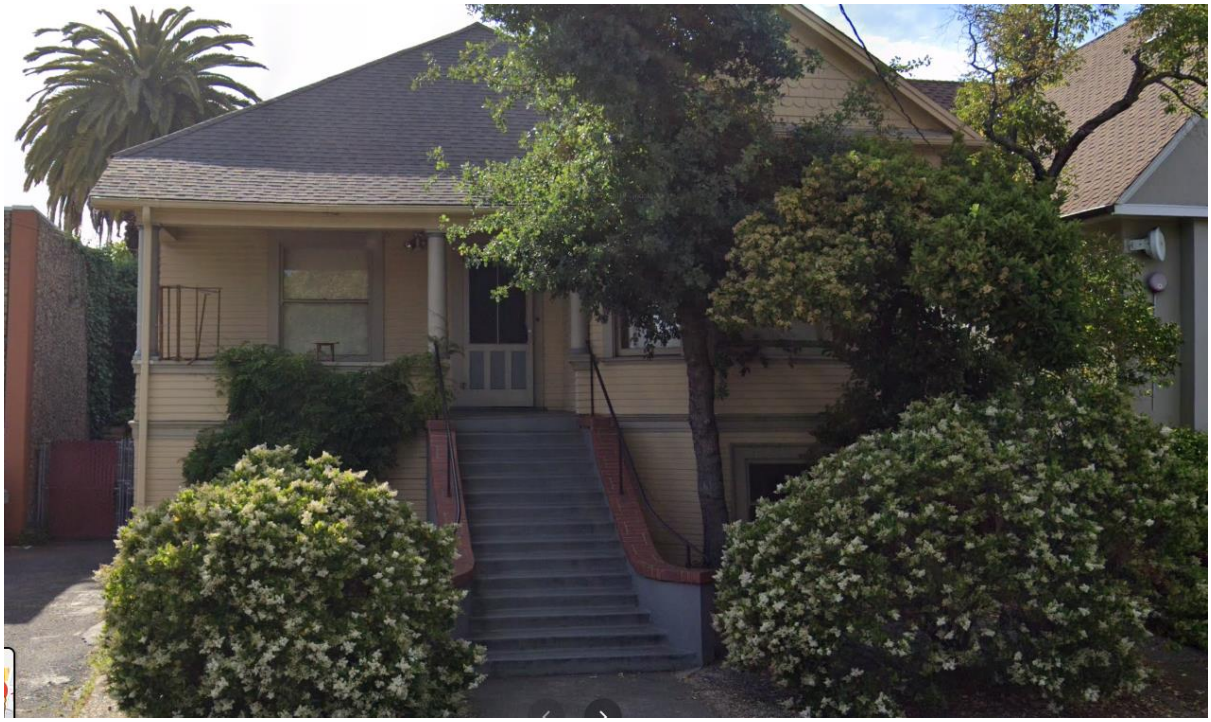


Address/code	**1 H Street** **1820 4th**		**D**
APN	010-291-69		
Building Name			
Year Built	c1950		
Original Use			
Architectural Style			
Architect/Builder			
Description	The parcel encompasses three adjoining buildings with three façades that face onto streets and a parking lot alongside the back. It has a flat roof. The three-story portion, which forms a roughly T-shaped layout, is clad in a combination of brick and smooth stucco, with dentil molding at the roof and molding between the first and second stories. Windows on the main first floor, the main façade of which runs along an entire block, are large storefronts and have cloth awnings. There are railings outside of some of the third-floor windows. On either side of the building are one-story additions, both of which are entirely clad in smooth stucco.		
Integrity	Nineteenth century building at corner lacks integrity		
Significance	Not significant at any level		
Notes	*Current footprint dates from the early 1950s, original building at corner and midcentury additions have all been altered*		



Address/code	914 Irwin Street		E
APN	014-123-21		
Building Name			
Year Built	1907		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two-story building has a rectangular plan and flat roof. There is brick at the corners, down the center, and at the main façade bulkhead, and the building is otherwise clad in textured stucco; the second-floor parapet of the main façade is concrete with a pattern of large squares. There are two storefronts with partially glazed doors and large windows. A small, flat wooden awning with exposed rafters and decorative knee braces shelters the first floor.		
Integrity	Integrity appears impaired		
Significance	Not significant at any level, hybrid 1905/1960s building		

Notes



Address/code	**1011 Irwin Street**		**B**
APN	014-085-10		
Building Name			
Year Built	1907		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story building has a rectangular plan and hipped roof with small gables on the main façade and one side. Under the gable on the front is a projecting volume with a second-floor bay window; next to the volume is the second-floor partial-width projecting porch. The building is clad in a wood clapboard and decorative shingles at gable ends.		
Integrity	Retains Integrity		
Significance	Good example of hipped roof cottage, eligible as contributor		
Notes			



Address/code	1015 Irwin Street		E
APN	014-085-11		
Building Name			
Year Built	c1900		
Original Use	Residence		
Architectural Style			
Architect/Builder			
Description	The one-and-a-half story building has a rectangular plan and cross-gabled roof. It has a raised elevation and a small integral entry porch accessed via brick steps. The main façade is also clad in brick on the first floor, and the rest of the building is clad in smooth stucco. A side elevation has a staircase to access rear entrances on both floors.		
Integrity	Appears to lack integrity, stucco, brick		
Significance	Not eligible at any level, lacks integrity		
Notes			



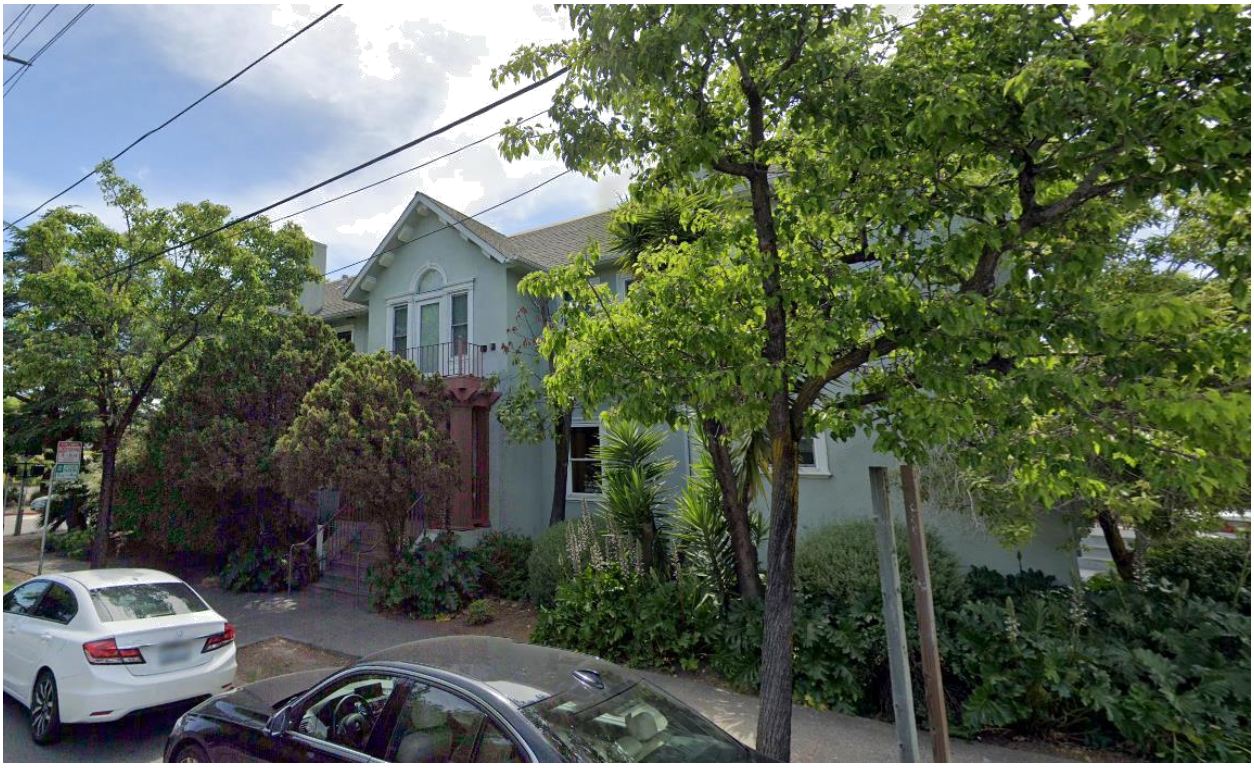
Address/code	**30 Latham Street**		B
APN	011-242-22		
Building Name			
Year Built	1928		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story house has a roughly rectangular plan. The second-story entrance is sheltered under a partial-width integral porch with its own, slightly projecting gable. The entrance faces into the side of the building. There is a garage on the first floor opposite the porch on the main façade. The building is clad in smooth stucco.		
Integrity	Retains integrity		
Significance	Good example of craftsman architecture, district contributor		
Notes			



Address	**901 Lincoln Avenue**		**E**
APN	011-273-12		
Building Name			
Year Built	c1920		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two-story building has a flat roof and a rectangular plan. There is a recessed entrance in the corner and floor-to-ceiling windows along most of the first story of one façade. Windows on the second floor have wooden shutters. The first floor also features a corrugated metal awning with a wide brick support above the façade with windows. The other street-facing façade has a low strip of brick at the bottom; otherwise, the building is clad in smooth stucco.		
Integrity	Appears to lack integrity, no visible 1920s fabric		
Significance	Not eligible		
Notes			



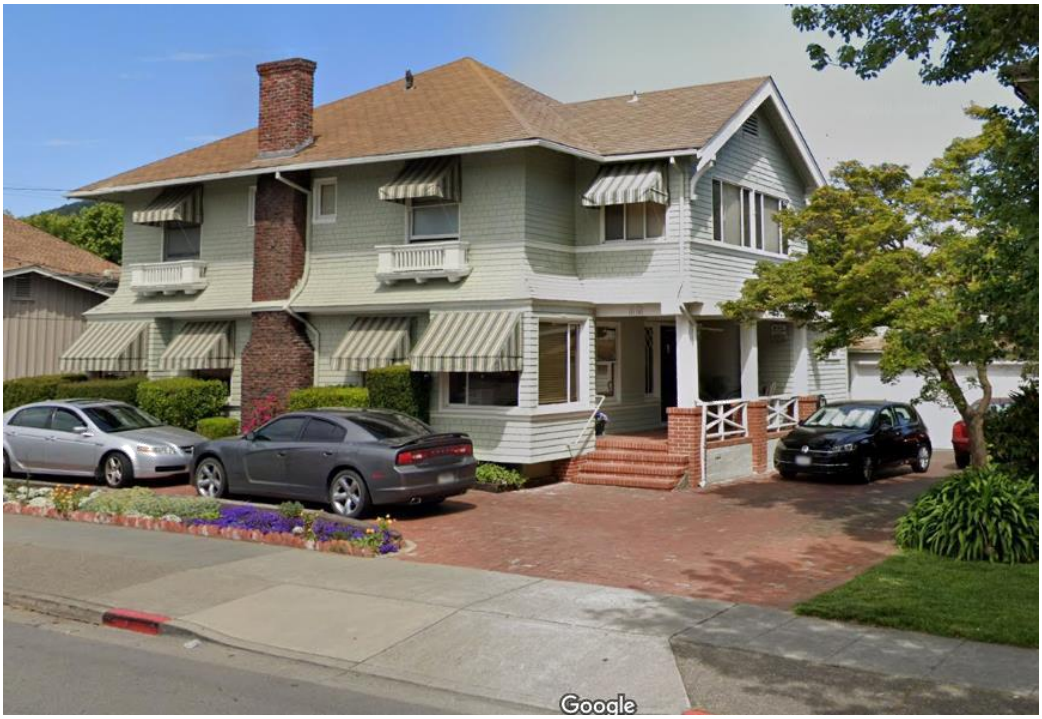
Address	1016 Lincoln Avenue	7N	C
APN	011-227-01		
Building Name			
Year Built	c1889-1891		
Original Use			
Architectural Style			
Architect/Builder			
Description	The one-and-a-half story building has a roughly rectangular plan and a gabled roof. It is surrounded by a high, vine-covered fence. It has a raised foundation and a partial-width integral porch. There is a long dormer window on the side façade of the corner building. The first floor is clad in wide horizontal board siding and the second floor is clad in wood shingle.		
Integrity	Appears to retain integrity, more study needed		
Significance	Potential district contributor, not individually eligible at any level		
Notes			



Address	**1103 Lincoln Avenue**		**D**
APN	011-225-04		
Building Name			
Year Built	c1900		
Original Use			
Architectural Style			
Architect/Builder			
Description	The two-story building has a roughly rectangular plan and a composition shingle mansard roof. There are three small projecting volumes on the main façade. The central volume has a gabled roof, a second-floor balcony, and a recessed entrance accessed by concrete steps on the first floor. The two volumes flanking it are hipped. The building is clad in smooth stucco.		
Integrity	Integrity appears impaired		
Significance	Probably Not eligible		
Notes			



Address	1104 Lincoln Avenue	7N	B
APN	011-226-07		
Building Name	San Rafael House		
Year Built	1906		
Original Use			
Architectural Style	American Foursquare		
Architect/Builder			
Description	The two-story building has a roughly square plan and a hipped composition shingle roof. There is a full-width integral porch with wide brick steps on the main façade and a dormer window in the center. There are cloth awnings on the windows. The first floor is clad in narrow horizontal board siding and the second floor is clad in shingle.		
Integrity	Retains Integrity		
Significance	Potential district contributor, not individually eligible at any level		
Notes			



Address	1110 Lincoln Avenue	5S2	B
APN	011-226-08		
Building Name			
Year Built	1907		
Original Use			
Architectural Style	Craftsman		
Architect/Builder			
Description	The two-story building has a roughly square plan and a gable-on-hip composition shingle roof. There is a deep one-story integral porch at one end of the main façade, running along part of a side façade. It is accessed by a set of brick steps, with a brick floor and brick around the bottoms of the porch supports. The main entrance faces into the side of the building. Some original double hung wood sash windows have been replaced. There is a large brick chimney at the center. The walls flare at the bottom of the second floor. The building is clad in in shingle.		
Integrity	Retains sufficient Integrity for district contributor despite window replacement		
Significance	Eligible as district contributor		
Notes			



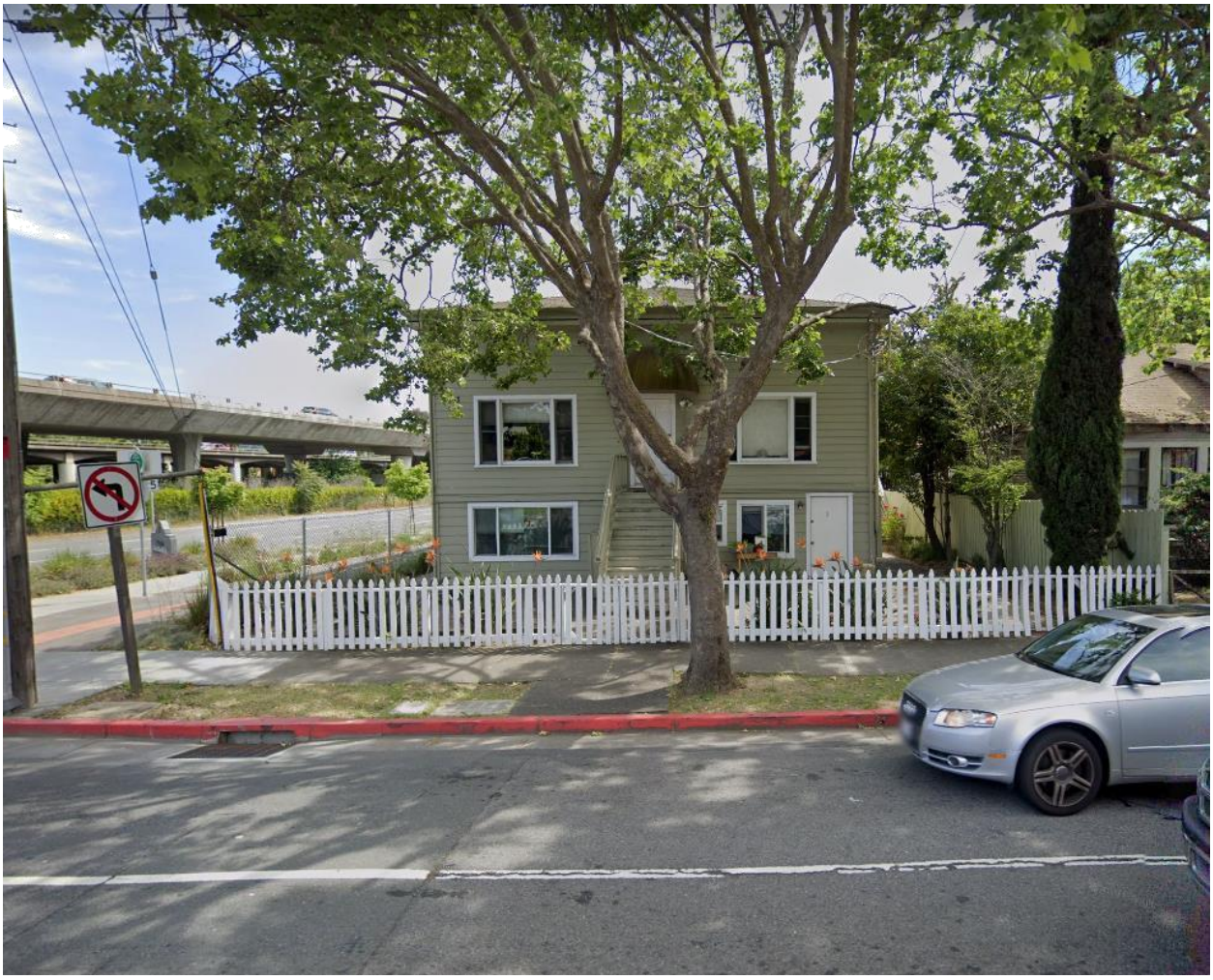
Address	1116 Lincoln Avenue		E
APN	011-226-13		
Building Name			
Year Built	1953		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The one-story building has a roughly square plan and gabled roof. The entrance is centered on the main façade at one end of a partial-width integral porch with a brick floor, steps, and planter. Windows are eight-light with large wooden shutters. The building is clad in board-and-batten.		
Integrity	Integrity appears impaired		
Significance	Not eligible, lacks significance.		
Notes			



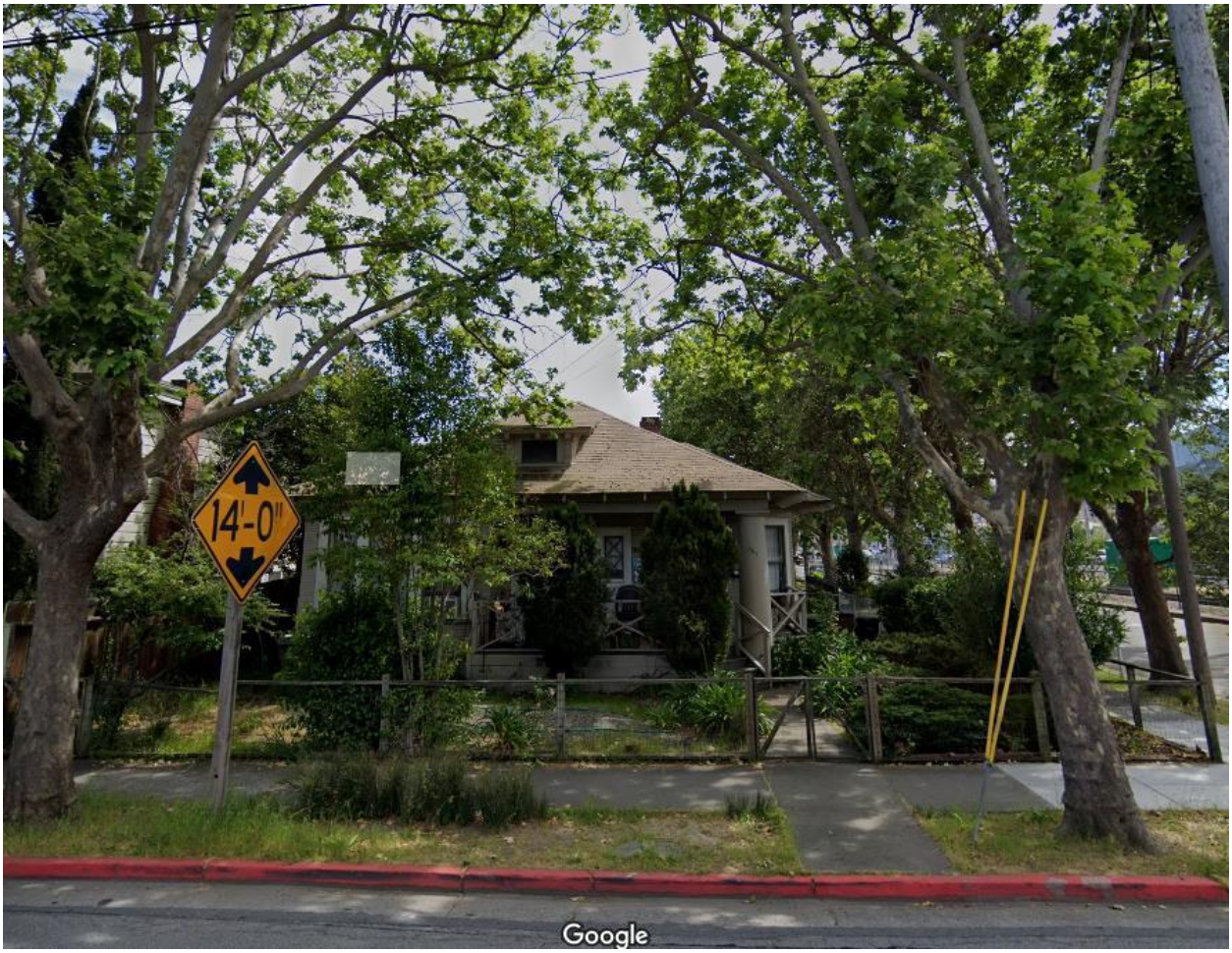
Address	**1118 Lincoln Ave**		**C**
APN	011-226-10		
Building Name			
Year Built	c1903		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story building has a hipped composition shingle roof and rectangular plan. The second-floor main entrance is accessed by a side-facing staircase that runs along the length of the main façade. There is a metal roll-up garage door underneath the staircase on the first floor. The building is clad in both narrow and wide horizontal board siding.		
Integrity	Integrity appears impaired; visibility limited more study needed		
Significance	May be eligible as district contributor		
Notes			



Address	**1120 Lincoln Avenue**		(likely B)
APN	011-226-01		
Building Name			
Year Built	1903		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The three-story building has a roughly rectangular plan and a gambrel roof. There are entrances on every façade. Of the two façades that face the street (the building is on a corner lot), one has a second-floor entrance sheltered by a partial-width integral porch. There is also a projecting one-story addition on this façade with its own entrance. Another has a glazed pair of double doors on the first floor. The building is clad in narrow horizontal board siding, with the exception of the addition, which is clad in wide horizontal board siding.		
Integrity	Retains Integrity despite addition, some replacement windows		
Significance	Eligible as district contributor		
Notes			



Address	633 Mission Avenue		E
APN	014-081-02		
Building Name			
Year Built	Pre-1894		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story building has a rectangular plan and low-pitch hipped composition shingle roof. There are multiple entrances on the main façade, one on the first floor and one on the second floor, accessed by a wooden staircase and sheltered under an awning. The building is clad in horizontal board siding.		
Integrity	Appears to lack integrity		
Significance	Not eligible		
Notes			



Address	**637 Mission Avenue**		(likely B)
APN	011-081-01		
Building Name			
Year Built	1904		
Original Use	Residential		
Architectural Style	Craftsman		
Architect/Builder			
Description	The one-story building has a roughly rectangular plan and hipped composition shingle roof with exposed rafter tails. There is a shed dormer on the main façade as well as a partial-width integral porch with one massive column. The building has large, wide double-hung wood sash windows and is clad in a combination of narrow and wide horizontal board siding.		
Integrity	Appears to retain integrity		
Significance	Excellent small example of craftsman architecture, Potential local district contributor and individual landmark.		
Notes			



Address	705 Mission Avenue	7N	A
APN	011-226-03		
Building Name			
Year Built	c1900		
Original Use	Residential		
Architectural Style	Shingle		
Architect/Builder			
Description	The one-and-a-half-story building has a roughly rectangular plan. It has a hip-on-dual-pitched-gable roof. It has a full-width integral porch with rounded openings on all sides. Double hung wood sash windows have various decorative configurations. It is clad in shingle, with several decorative strips of straight-lined fishscale on the second-floor projecting volume.		
Integrity	Appears to retain integrity		
Significance	Good example of rare style, Eligible as landmark and district contributor		
Notes			



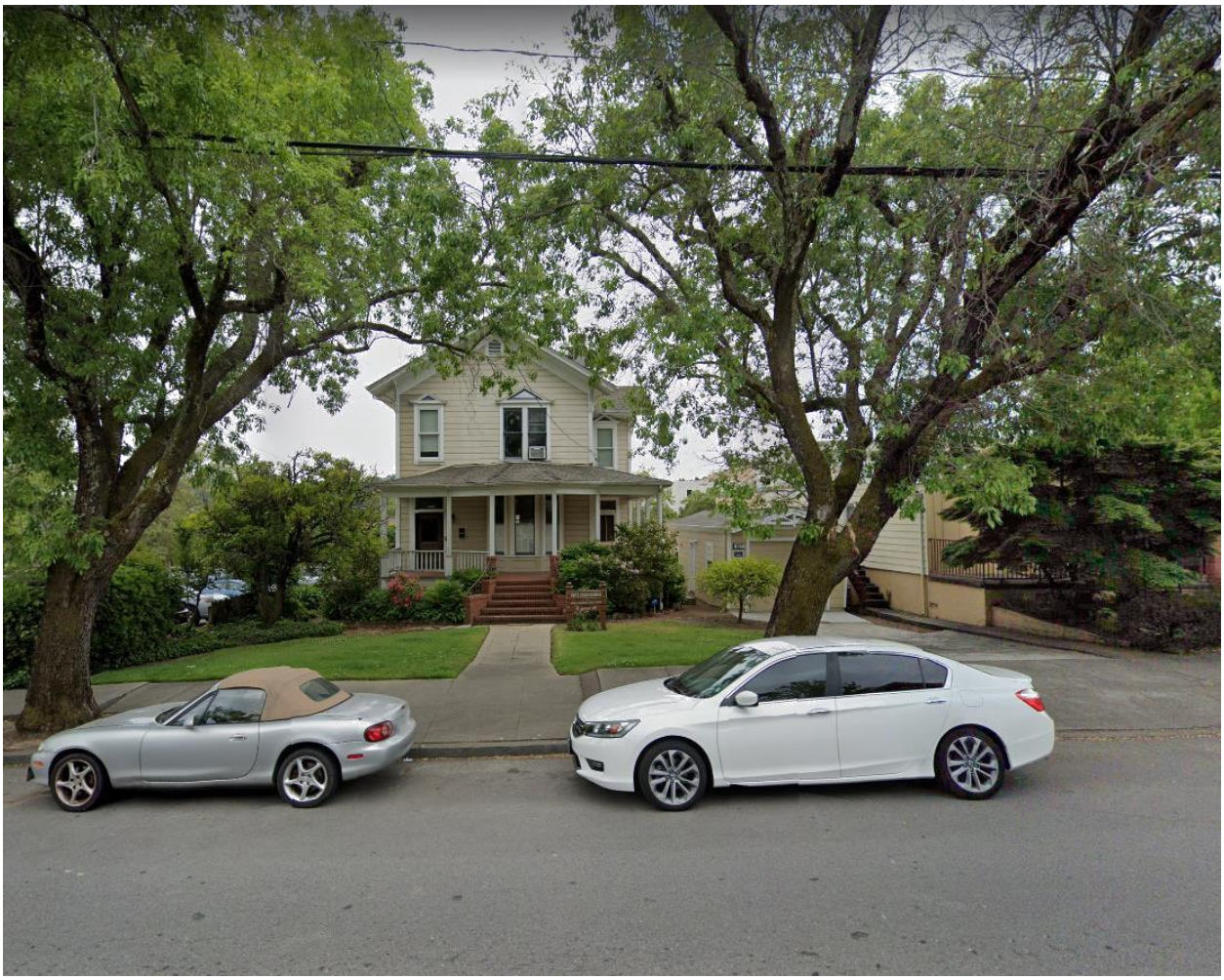
Address	710 Mission Avenue		A
APN	011-186-10		
Building Name			
Year Built	c1900		
Original Use	Residential		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The two-and-a-half story building has a gable-on-hip composition shingle roof with decorative brackets at the cornice and a roughly rectangular plan. It has a raised elevation and a full-width one-story projecting front porch with at the center that is screened on the sides. The entrance is centered and recessed. The building is clad in horizontal board siding, with a combination of shingle and fishscale on the attic-floor gable. It has wide double-hung wood sash windows, many of them in pairs.		
Integrity	Appears to retain integrity		
Significance	Eligible as individual landmark and district contributor		
Notes			



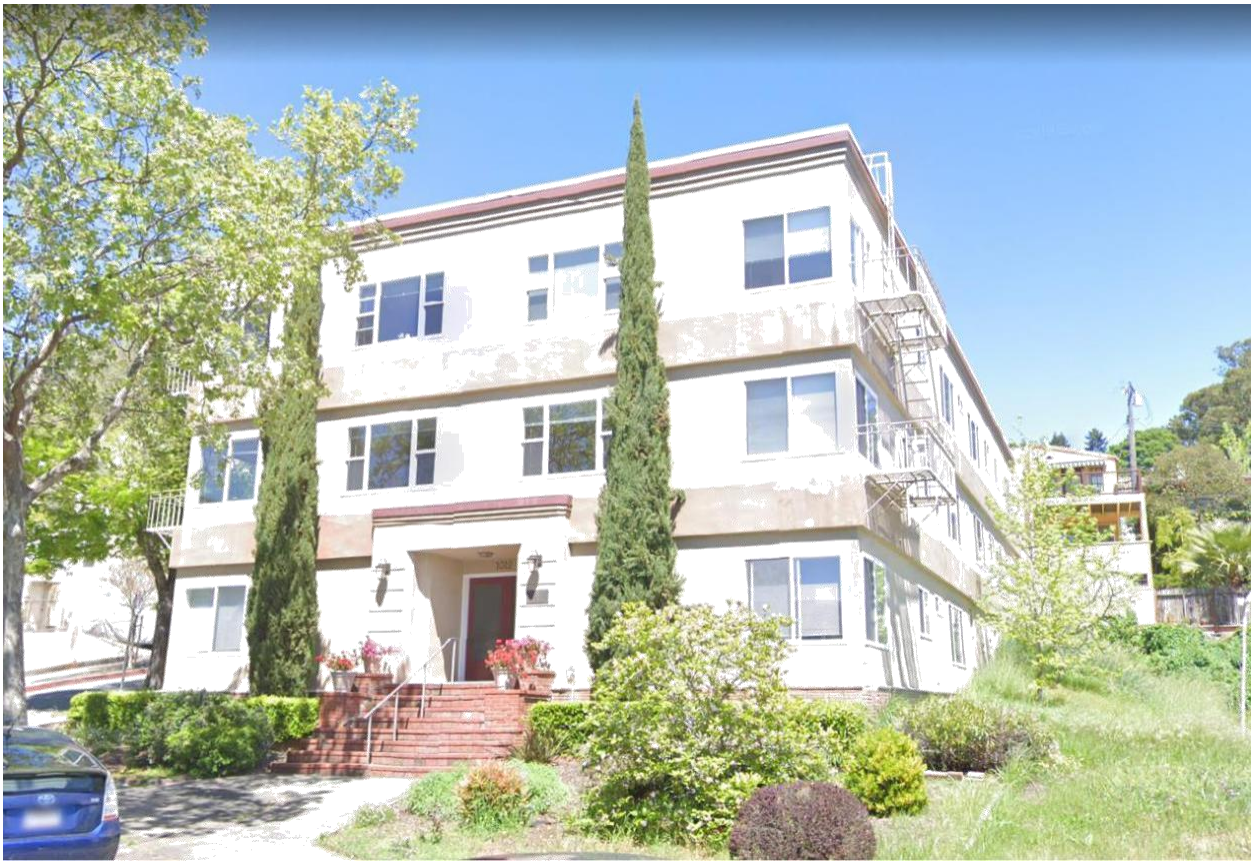
Address	823-25 Mission Avenue	3S	A
APN	011-223-02		
Building Name			
Year Built	Pre-1887		
Original Use	Residential		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The two-story building has a roughly rectangular plan and a gable-on-hip composition shingle roof with a round, pointed tower in one front corner. There is a projecting full-width porch on the first floor that extends wider than the house at one side. The building is clad in horizontal wood siding. Queen Anne decorative features include brackets at the tower cornice, ornate window casings, and square porch columns with capital and scrolled brackets.		
Integrity	retains integrity		
Significance	Excellent example of high style Queen Anne architecture, landmark and contributor		
Notes			



Address	**828 Mission Avenue**		**A**
APN	011-184-10		
Building Name			
Year Built	Pre-1887		
Original Use	Residential		
Architectural Style	Stick		
Architect/Builder			
Description	The two-story building has a roughly rectangular plan and a parking lot to one side. The gable-on-hip composition shingle roof features decorative triangular brackets at the corners and gable trusses. There is a projecting full-width wraparound porch on the first floor of the main façade and a side façade, with a small gable on the one-story projecting porch roof above the corner main entrance. The building, sited on a slope, has a raised foundation toward the front, and a set of stairs lead directly to the main entrance. The building is clad in horizontal board siding with narrow vertical board siding on the gable faces.		
Integrity	retains integrity		
Significance	Eligible as landmark and contributor		
Notes			



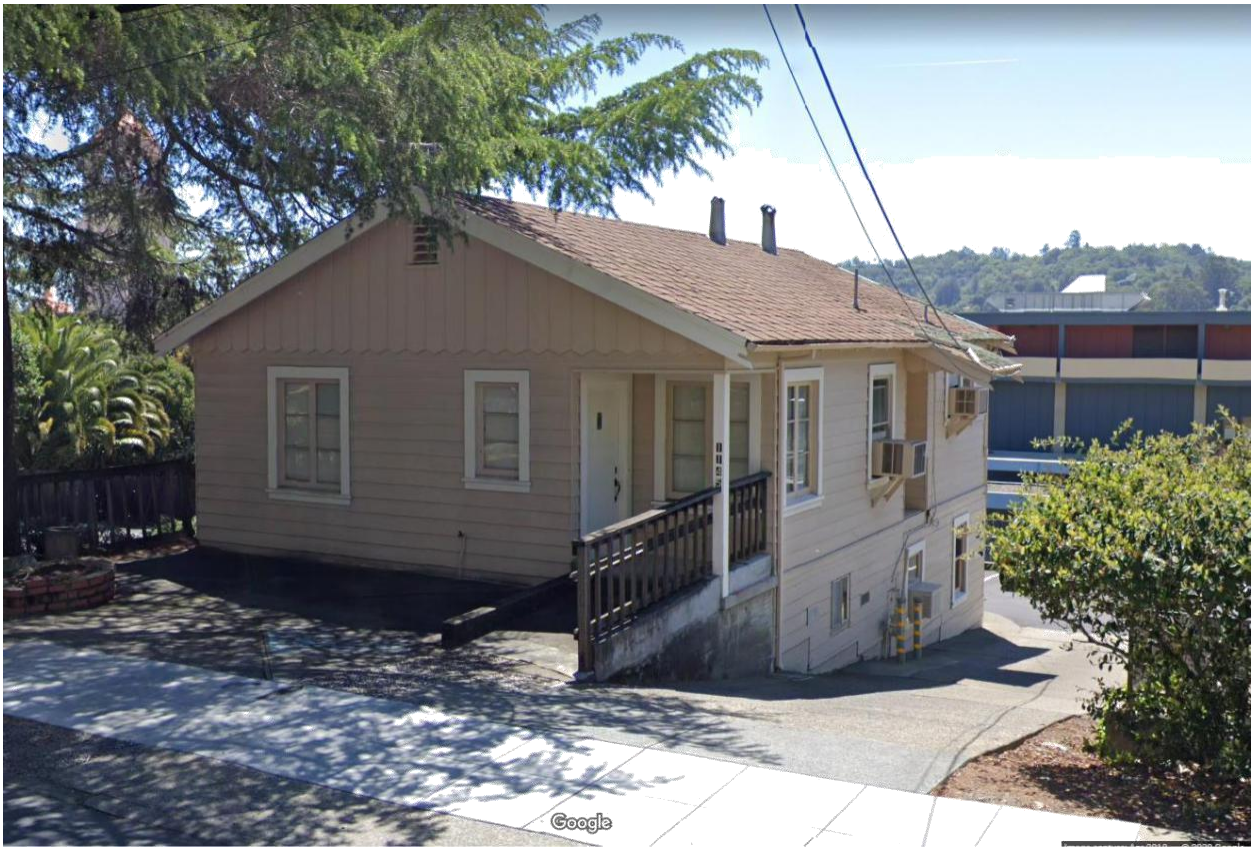
Address	907 Mission Avenue	7N	A-
APN	011-221-03		
Building Name			
Year Built	c1900		
Original Use	Residential		
Architectural Style	Folk Victorian		
Architect/Builder			
Description	The two-story building has a roughly rectangular plan. The cross-gabled composition shingle roof features decorative triangular knee braces at the corners. There is a projecting full-width wraparound porch on the first floor of the main façade and side, with entrances at either end and a bay window. It is accessed by a set of brick steps. The building has tall, narrow double-hung wood sash windows, and those on the second floor feature decorative wood pediments. The building is clad in horizontal board siding. There is a small detached garage next to the building with matching cladding and a low-pitch gabled roof with a gable truss above the garage door.		
Integrity	Appears to retain integrity		
Significance	Eligible as landmark and contributor		
Notes			



Address	**1012 Mission Ave**		**E**
APN	011-174-11		
Building Name			
Year Built	1949		
Original Use	Residential		
Architectural Style	Streamline Moderne		
Architect/Builder			
Description	The three-story building has a rectangular plan with an open courtyard in the center and a flat roof. There is a large parking lot to one side of the building. Located on a slope, the building is only two stories at the back. The recessed front entrance is accessed by a set of brick steps at the center of the main façade. Windows are fitted with various types of replacement sash.		
Integrity	Appears to lack integrity		
Significance	Unlikely to be significant		
Notes			



Address	**1135 Mission Av**		(likely B)
APN	011-213-04		
Building Name	DeCourtieux House		
Year Built	1893		
Original Use	Residential		
Architectural Style	Stick		
Architect/Builder			
Description	The two-and-a-half-story building has a roughly rectangular plan and combination cross-gabled and hipped roof. While the first floor is mostly obscured behind a tall hedge, the building appears to have a full-width integral porch with a slightly projecting roof on the main façade. There is a variety of cladding, including horizontal channel board siding and half-timbering on the gable faces.		
Integrity	Appears to retain integrity		
Significance	Potential local district contributor, not individually eligible		
Notes			



Address	**1145 Mission Av**		(likely E)
APN	011-186-11		
Building Name			
Year Built	1937 (spreadsheet)		
Original Use	Residential		
Architectural Style	Minimal Traditional		
Architect/Builder			
Description	The one-story building has a rectangular plan and gabled composition shingle roof with exposed rafter tails. Sited on ground that slopes downward from the front, the building has a second, lower floor at the back. There is a small, partial-width integral porch, and a ramp with a wooden railing on one side leads up to it. The main entrance faces into the side of the building from the porch. The building is clad in a variety of wood board siding, both vertical and horizontal.		
Integrity	Integrity appears impaired; ramp has been added		
Significance	Not eligible, architecture not significant		
Notes			



Address	**16 Ritter Street**		(likely E)
APN	011-272-04		
Building Name			
Year Built	1911 (spreadsheet)		
Original Use	Residential		
Architectural Style	Queen Anne Cottage		
Architect/Builder			
Description	The two-story building has a rectangular plan and a gable-on-hip composition shingle roof. There are two entrances on the main façade: a set of double doors on the first floor, and an entrance sheltered by a partial-width integral porch on the second floor. There is a bay window above the first-floor entrance. The building is clad in horizontal drop siding. The building has vinyl windows, a replacement door, replacement porch balustrade, and may have been raised.		
Integrity	Integrity appears impaired; windows replaced, door altered		
Significance	Not eligible, lacks integrity		
Notes			



Address	**826 Second Street**		(likely E)
APN	011-272-10		
Building Name			
Year Built			
Original Use			
Architectural Style			
Architect/Builder			
Description	The building has a flat roof and roughly rectangular plan. It is two stories at the front with a one-story portion and a lower one-story addition at the back. It is clad in brick, with stucco on the main façade and addition. There is dentil molding above the first floor on the main façade. There is brick trim around the roof of the two-story volume as well as brick sills on the second-floor windows. Windows are varied and feature rounded cloth awnings on the sides of the building, as does a door into the lower volume. There are also two garage doors towards the back of the building, and the addition has an entrance as well.		
Integrity	Lacks Integrity		
Significance	Not eligible, nineteenth century commercial heavily altered on main facade		
Notes			



Address	1115 Second Street	7N	E
APN	013-011-06		
Building Name	Mackey Frames		
Year Built	1875 (spreadsheet)		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story building has a combination shed and gabled roof and a rectangular plan. It is clad in horizontal drop siding. There is a glazed door and a metal roll-up garage door on the main façade. Windows are hung vinyl sash		
Integrity	Appears to lack integrity		
Significance	Not eligible, lack of significance and integrity		
Notes			



Address	1209 Second Street		E
APN	12-075-05		
Building Name			
Year Built	1924 (spreadsheet)		
Original Use	Residential		
Architectural Style	Craftsman		
Architect/Builder			
Description	The one-story building has a raised foundation and an L-shaped plan that includes a projecting partial-width porch. It has a hipped composition shingle roof. There are two doors accessed via the raised porch: one sliding double glass door that faces the street, and one partially glazed single wooden door that faces to the side. The building is clad in stucco with vertical board siding near the bottom on the side façades.		
Integrity	Appears to lack integrity, replacement windows, sliding glass door		
Significance	Not eligible, lacks significance and integrity		
Notes			



Address	**1211 Second Street**		**C**
APN	012-075-04		
Building Name			
Year Built	1920 (spreadsheet)		
Original Use	Residential		
Architectural Style	Hipped roof cottage		
Architect/Builder			
Description	The two-story building has an L-shaped plan that includes a projecting partial-width porch screened on one side. It has a hipped composition shingle roof The main entrance is on the second floor. The building is clad in a horizontal board siding in a variety of widths. There is a garage on the lower floor of the main façade.		
Integrity	Appears to retain integrity, more study needed, condition poor		
Significance	Potential local district contributor, not eligible as landmark		
Notes			



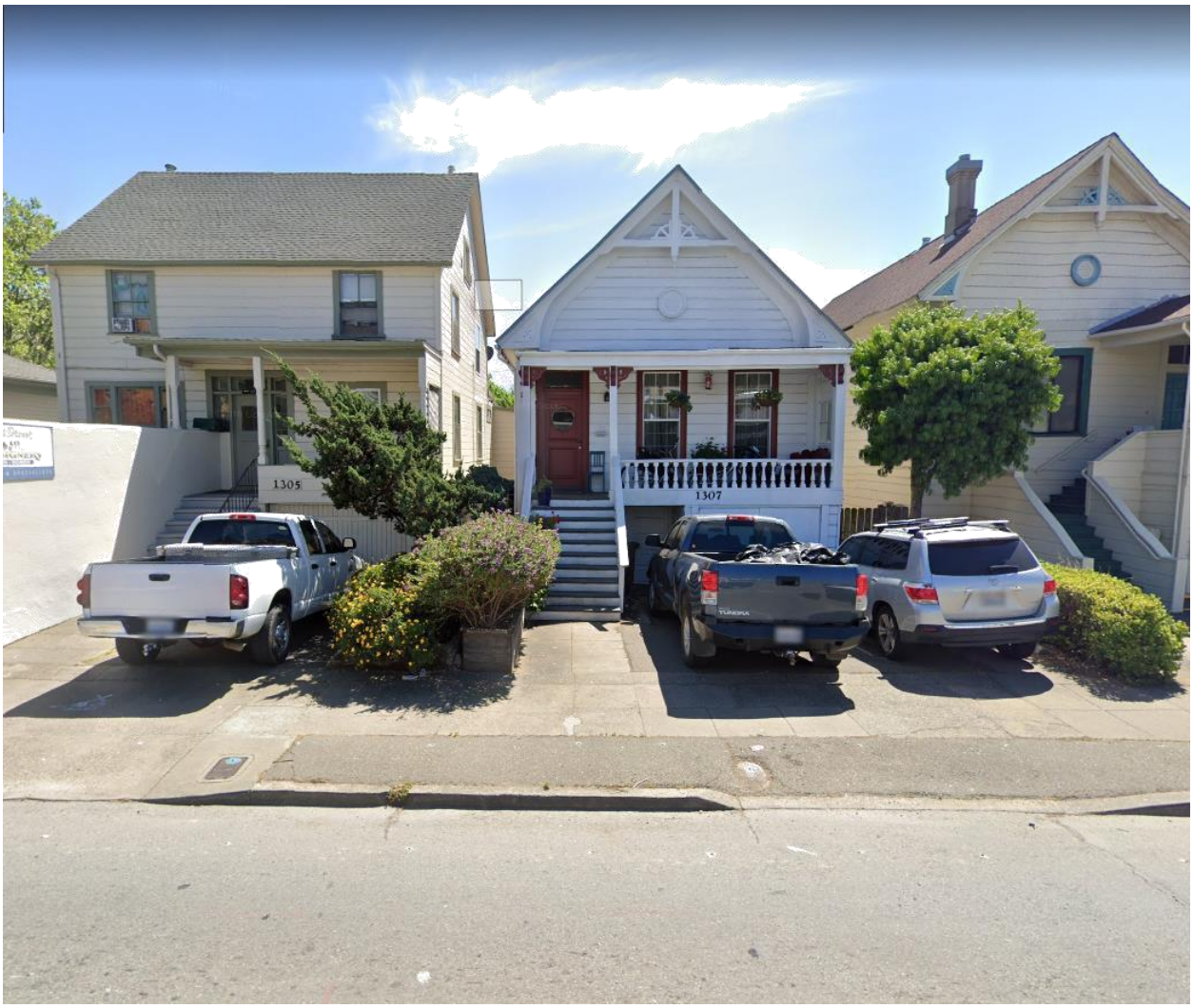
Address	1215 Second Street		B
APN	012-075-03		
Building Name			
Year Built	1916 (spreadsheet)		
Original Use	Residential		
Architectural Style	Hipped roof cottage		
Architect/Builder			
Description	The two-story building has rectangular plan and composition shingle hipped roof and has a parking lot behind it. The second-story main entrance is sheltered under a partial-width integral porch, with a bay window on one side. The building is clad in multiple widths of horizontal board siding. It has original double hung wood sash and partially glazed wood paneled door.		
Integrity	Retains Integrity		
Significance	Potential local district contributor, not individually eligible at any level		
Notes			



Address	**1301 Second Street**		**B+**
APN	012-073-07		
Building Name			
Year Built	1907 (spreadsheet)		
Original Use	Residential		
Architectural Style	Hipped roof cottage		
Architect/Builder			
Description	The one-story building has a raised foundation, a roughly rectangular plan, and a composition shingle hipped roof. A volume at the rear of the building is lower than the main roof. The main entrance is centered on the main façade and sheltered under a full-width projecting porch, screened on both sides with decorative turned posts. The building is clad in wood shingle. It has original double hung wood sash and partially glazed wood paneled door.		
Integrity	Appears to retain integrity		
Significance	Contributor and potentially landmark eligible, very good example of hipped roof cottage with excellent integrity		
Notes			



Address	**1305 Second Street**		**E**
APN	012-073-06		
Building Name			
Year Built	1887 (spreadsheet)		
Original Use	Residential		
Architectural Style	Folk Victorian		
Architect/Builder			
Description	The original building has a roughly square plan and a notably distinct addition projects forward on the main façade. The original volume is three stories tall with a gabled composition shingle roof. The main entrance is sheltered under a partial-width projecting porch with a flat roof. The volume is clad in horizontal channel board siding. On the first floor is a vertical board wooden garage door. The addition is one story; it rises to about halfway up the original volume's second floor, running next to the front staircase, under one of the porch supports, which is abbreviated to make space for it, and up to one side of the original volume's main entrance. The addition has its own entrance and large plate glass window on its main façade. It is clad in smooth stucco.		
Integrity	lacks integrity due to addition		
Significance	Not eligible, lacks integrity		
Notes			



Address	1307 Second Street	5S2	B
APN	012-073-05		
Building Name			
Year Built	1905 (spreadsheet)		
Original Use	Residential		
Architectural Style	Stick/Vernacular		
Architect/Builder			
Description	The long rectangular building is two-story and has a gabled composition shingle roof with decorative gable bracket details. The second-story entrance is sheltered under a full-width integral porch. There is a garage with a wooden door on the first floor of the main façade. The building is clad in horizontal channel board siding.		
Integrity	Retains Integrity despite replacement windows		
Significance	Potential district contributor, lacks integrity required for landmark		
Notes			



Address	1309 Second Street		E
APN	012-073-04		
Building Name			
Year Built	1900 (spreadsheet)		
Original Use	Residential		
Architectural Style	Victorian		
Architect/Builder			
Description	The long rectangular building is two-story and has a gabled composition shingle roof with decorative gable bracket details. The second-story entrance is sheltered under a partial-width projecting gabled porch, accessed by a staircase from the side and above the metal roll-up garage door. The building is clad in horizontal board siding.		
Integrity	Lacks Integrity, replacement windows and porch		
Significance	Not eligible, lack of integrity		
Notes			



Address	**1315 Second Street**		**E**
APN	012-073-03		
Building Name			
Year Built	c1900 (spreadsheet)		
Original Use	Residential		
Architectural Style	Folk Victorian		
Architect/Builder			
Description	The long, L-shaped two-story building has a gabled composition shingle roof. It is clad in horizontal board siding. The building has a second-floor entrance, sheltered under a projecting full-width porch accessed by a staircase on the main façade.		
Integrity	Lacks Integrity impaired, replacement windows, raised		
Significance	Ineligible, lack of integrity		
Notes			



Address	1416-1420 Second St	7N	E
APN	011-252-11		
Building Name			
Year Built	1895 (spreadsheet)		
Original Use	Residential		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The roughly rectangular two-story building is located behind a high wall overgrown with vines, and there is considerable vegetation on the parcel. There is a parking lot to one side of the building, and the second-story entrance and deck are located near the back of the building on the façade that faces the parking lot rather than the façade facing the street. The building has a gabled composition shingle roof as well as a round room in one corner with a pointed roof.		
Integrity	Lacks Integrity, replacement windows and stairs/deck		
Significance	Not eligible, lacks integrity		
Notes			



Address	**3 Stevens Place**		**C**
APN	014-011-15		
Building Name			
Year Built	1913 (spreadsheet)		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story rectangular building has a hipped composition shingle roof with overhanging eaves. It is clad in wood shingle. There are multiple entrances on the main façade, including a second-story entrance accessed by a staircase and a side-facing entrance that opens into the base of the staircase. Windows are varied, and there is a dormer on the main façade.		
Integrity	Integrity impaired, replacement doors and windows, porch enclosed, more study needed		
Significance	Potential district contributor if integrity is retained		
Notes			





Address	**927 Tamalpais Av**	**3S**	**B**
APN	011-275-04		
Building Name	Barrel House		
Year Built	c1925 (spreadsheet)		
Original Use			
Architectural Style			
Architect/Builder			
Description	The narrow rectangular building is one story at the front and two stories toward the back. It has a flat roof and is clad in brick with some vertical board siding on the second story. The brick is unpainted on the main façade. The main façade also features a slanted tile roof on either side of the partial-width parapet that		
	shelters the arched main entrance. There are large decorative tiles over the small storefront windows.		
Integrity	Retains integrity, see 1970s photo above		
Significance	Eligible as district contributor, lacks significance for landmark status		
Notes			



Address	930 Tamalpais Av	3S	E
APN	011-277-01		
Building Name	Northwest Pacific Railroad Depot		
Year Built	c1929 (spreadsheet)		
Original Use	Railroad Depot		
Architectural Style	Spanish?		
Architect/Builder			
Description	The two-story linear building runs along the railroad tracks next to Tamalpais Avenue. It is clad in smooth stucco and has a gabled tile roof. Windows are varied, but all have multiple small lights; most are wide vertical eight-over-eight light windows. A series of arches in shallow relief along the main façade have windows or doors in them. There are a number of entrances on the main façade, but the main entrance is located under a cloth awning and large decorative arch.		
Integrity	Appears to retain integrity, more study needed, 2nd story addition		
Significance	Likely significant, currently being separately evaluated for individual NRHP nomination		
Notes			



Address	610 Third Street		E
APN	014-122-14		
Building Name	French Quarter		
Year Built	[spreadsheet gives implausible date of 1970]		
Original Use	Residential		
Architectural Style	Queen Anne		
Architect/Builder			
Description	The two-story rectangular building has a gabled composition shingle roof. There are two entrances located on the main façade. An entrance on the first floor under a bay window is sheltered by a cloth awning. The other entrance, located on the second floor, is accessed by a wooden staircase and sheltered under a partial-width integral porch. The building is clad in a combination of horizontal board and fishscale shingle siding. Appears to have been raised, shed roof addition		
Integrity	Integrity impaired by windows, staircase, enclosed porch, shed addition		
Significance	Not eligible, lacks integrity		
Notes			



Address	**1030 Third Street**		**A**
APN	011-263-21		
Building Name	First Federal Savings and Loan		
Year Built	1963 (spreadsheet)		
Original Use	Commercial		
Architectural Style	Modern		
Architect/Builder	John Carl Warnecke (DIJ 11/23/1962)		
Description	The one-story rectangular building occupies a corner lot, surrounded on its other two sides by a driveway and parking lot. The building has a flat concrete roof with wide eaves and a penthouse with slanted sides. It is clad in panels of rough stucco, which are interspersed with tall vertical windows. There are also long horizontal stretches of window on multiple façade. The main entrance is a revolving door accessed by a set of wide, low concrete steps; there are multiple other entrances.		
Integrity	Appears to retain integrity, further study needed		
Significance	Probable eligible as landmark, designed by John Carl Warmecke		
Notes			



Address	**1410 Third Street**		**A**
APN	011-251-09		
Building Name			
Year Built	1916 (spreadsheet)		
Original Use	Residential		
Architectural Style	Foursquare/Craftsman		
Architect/Builder			
Description	The two-story rectangular building has a hipped composition shingle roof with hipped dormers on three façades. The second-story main entrance is sheltered under a deep partial-width integral porch; next to it is a rounded bay window. Eaves around the roof as well as the porch, the bay window, and the dormers all feature decorative brackets. The building is clad in clapboard siding and has original double hung wood sash windows and partially glazed door. Porch columns are highly decorative		
Integrity	retains integrity		
Significance	Eligible as landmark and district contributor		
Notes			



Address	1414 Third Street		E
APN	011-251-11		
Building Name			
Year Built	1930 (spreadsheet)		
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The two-story rectangular-plan building has a cross gable near the main façade, but most of the roof is flat. The building is clad in stucco with varied fenestration. The main façade features a ground-floor entrance as well as a second-floor entrance accessed by a wooden staircase.		
Integrity	Appears to lack integrity		
Significance	Not likely to be significant		
Notes			



Address	1532 Third Street		B
APN	011-243-11		
Building Name			
Year Built	1900 (spreadsheet)		
Original Use	Residential		
Architectural Style	Hipped Roof Cottage		
Architect/Builder			
Description	The building is one story with a raised foundation and a rectangular plan. It has a hipped composition shingle roof and a projecting full-width porch on the main façade, accessed by a centered set of steps. The porch has decorative turned posts and scrolled brackets. It is clad in horizontal board siding. There is a flat-roofed addition to one side. Windows are double hung wood sash		
Integrity	Retains Integrity despite side addition		
Significance	Eligible as district contributor, not a landmark		
Notes			



Address	**514 Fourth Street**		**E**
APN	014-086-15		
Building Name			
Year Built			
Original Use	Commercial		
Architectural Style	New Formalism		
Architect/Builder			
Description	The two-story rectangular-plan building has a flat roof and is set back behind a parking lot. The double-height first floor features multiple entrances and large aluminum frame storefronts on the main façade. An exterior staircase projects forward slightly at one corner of the main façade, and an exterior hallway runs along the second floor; both the staircase and hallway are sheltered under a projecting roof with an arcade. There is parking in front of the building		
Integrity	Retains integrity		
Significance	Not eligible, not a significant example of the style		
Notes			



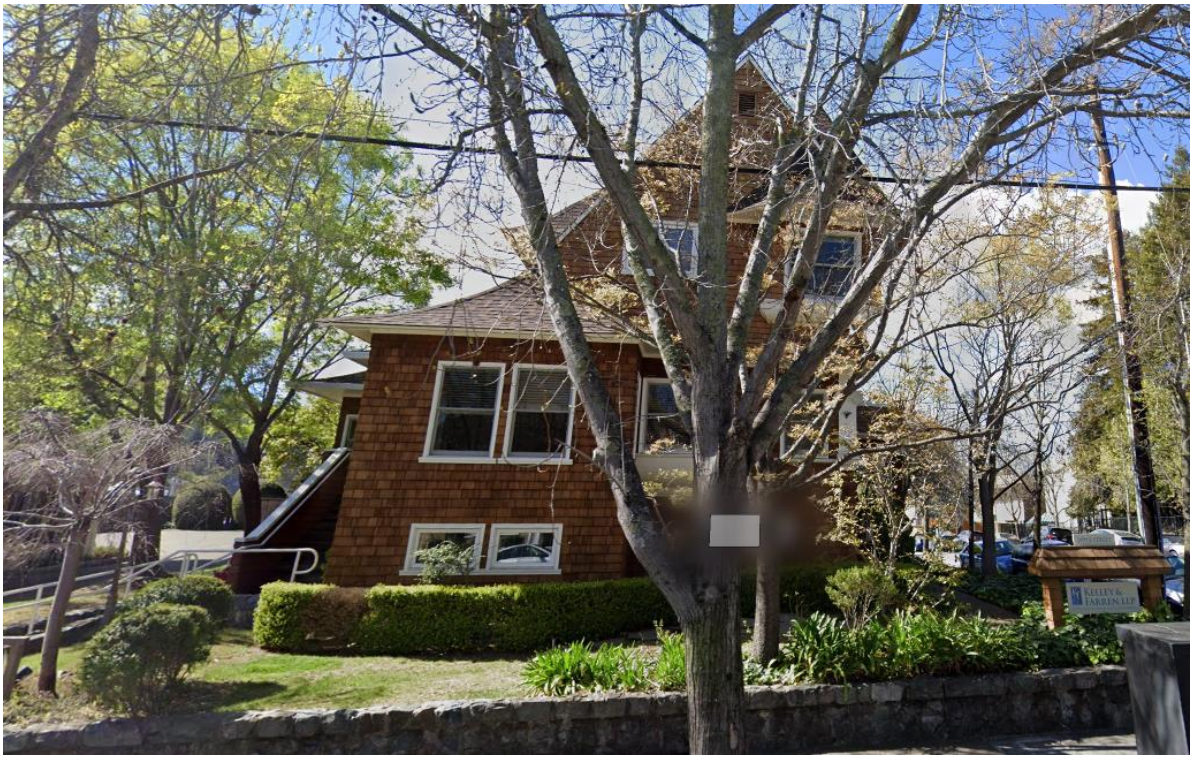
Address	**704 Fourth Street**		**E**
APN	011-227-10		
Building Name	Lotus Restaurant		
Year Built			
Original Use	Commercial		
Architectural Style	Mid-century		
Architect/Builder			
Description	The rectangular-plan building is located on a corner lot. The roof type is unclear, but there is a front gable located to the side of the main entrance. The roof is composition shingle and there is a tile awning over one window, a cloth awning over another window, and a projecting cloth awning over the main entrance. The building is clad in brick and the main façade features built-in brick planters. Windows are a variety of shapes and sizes.		
Integrity	Integrity appears impaired		
Significance	Not likely to be significant		
Notes			



Address	**1203 Fourth Street**		**C**
APN	011-255-23		
Building Name	Wells Fargo		
Year Built			
Original Use	Commercial		
Architectural Style	Midcentury Modern		
Architect/Builder			
Description	The rectangular-plan building is located on a corner lot. It has a flat roof. It is clad in two kinds of tile and features large windows screened by pebbledash walls with decorative cutouts. The main entrance is located to the side of an integral full-height awning at the corner that also shelters ATMs and a shop under its own lower awning.		
Integrity	Appears to retain integrity, more study needed		
Significance	Appears eligible as landmark and contributor		



Address	1001 Lincoln Avenue		B
APN	011-224-10		
Building Name			
Year Built			
Original Use	Commercial		
Architectural Style			
Architect/Builder			
Description	The two-story building has a rectangular plan. The roof consists of two side-by-side composition shingle gables, hidden on both the street-facing sides of the corner lot by a slanted parapet supported by decorative molding and brackets. The main façade contains two first-floor storefronts consisting primarily of large plate-glass windows, with brick bulkheads and narrow vertical board siding between the windows. On the second floor and other façades, the building is clad in horizontal board siding. Upstairs windows have been replaced.		
Integrity	Appears to retain integrity despite window replacements		
Significance	Eligible as district contributor, lacks integrity required for landmark		
Notes			



Address	**1099 E Street**		**B**
APN	011-202-06		
Building Name	Schlosser-Cole Residence		
Year Built			
Original Use	Residential		
Architectural Style			
Architect/Builder			
Description	The three-story building has a roughly rectangular plan and steeply pitched composition shingle gable-on-hip roof. It is clad in wood shingle. There is an integral porch on the main façade and several other entrances around the building. The building has wide double-hung wood sash windows. There is a small tower with a pointed roof at the corner of the building above the porch.		
Integrity	Appears to retain integrity		
Significance	Potential district contributor, not individually eligible at any level		
Notes	Registered local landmark		



Address	**1100 E Street**	**3S**	**A**
APN	011-203-01		
Building Name	San Rafael Public Library		
Year Built			
Original Use	Library		
Architectural Style			
Architect/Builder			
Description	The large T-shaped building occupies the entire west end of the block it sits on, surrounded by landscaping and parking lots as well as streets on three sides. The building is composed of multiple volumes of different sizes and eras. The taller older volume is clad in brick and stucco and has large windows. This volume features a number of decorative details, including dentil molding, quoins flanking the windows as well as at the corners, and large keystones on the windows. The newer volume is longer and shorter. It is clad in stucco and brick. On its main façade, the automatic sliding glass door entrance is located in a corner; the upper half of the façade is clad in brick, and the lower features subtle dentil molding in a more subdued echo of the older volume. The rear façade is clad almost entirely in brick. On the volume's other façades, windows alternate with brick-and-stucco patterns that mimic the older volume's quoins.		
Integrity	60s addition in notably different style, but sympathetic and both the addition and original building look to have good integrity		
Significance	Eligible as landmark and contributor		
Notes			



Address	1623 5th Avenue, Building C	7N	B
APN	011-320-03		
Building Name			
Year Built			
Original Use	Residential		
Architectural Style	Victorian		
Architect/Builder			
Description	The small one-story L-shaped building shares a parking lot with several other buildings and is set back from the street. It has a cross-gabled composition shingle roof. It is clad in horizontal channel board siding with fishscale shingle on the gable faces. A small integral porch on the main façade leads to the main entrance, which opens into the side of the projecting volume. Windows are tall, two-over-two light double-hung wood sash.		
Integrity	Appears to retain integrity		
Significance	Potential local district contributor, not individually eligible at any level		
Notes			



Address	**1623 5th Avenue, Building D**	**7N**	**B**
APN	011-320-04		
Building Name	Kalliopeia Foundation		
Year Built			
Original Use	Residential		
Architectural Style	Victorian		
Architect/Builder			
Description	The two-story rectangular plan building shares a parking lot with several other buildings. It has a gable-on-hip composition shingle roof. The building features an integral wrap-around porch, with the main façade facing the parking lot rather than the street. It is clad in horizontal channel board siding with fishscale shingle on the gable faces. Windows are tall, two-over-two light double-hung wood sash.		
Integrity	Appears to retain integrity		
Significance	Potential local district contributor, not individually eligible at any level		
Notes			

California Historical Resource Status Codes

1	**Properties listed in the National Register (NR) or the California Register (CR)**
1D	Contributor to a district or multiple resource property listed in NR by the Keeper. Listed in the CR.
1S	Individual property listed in NR by the Keeper. Listed in the CR.
1CD	Listed in the CR as a contributor to a district or multiple resource property by the SHRC
1CS	Listed in the CR as individual property by the SHRC.
1CL	Automatically listed in the California Register – Includes State Historical Landmarks 770 and above and Points of Historical Interest nominated after December 1997 and recommended for listing by the SHRC.
2	**Properties determined eligible for listing in the National Register (NR) or the California Register (CR)**
2B	Determined eligible for NR as an individual property and as a contributor to an eligible district in a federal regulatory process. Listed in the CR.
2D	Contributor to a district determined eligible for NR by the Keeper. Listed in the CR.
2D2	Contributor to a district determined eligible for NR by consensus through Section 106 process. Listed in the CR.
2D3	Contributor to a district determined eligible for NR by Part I Tax Certification. Listed in the CR.
2D4	Contributor to a district determined eligible for NR pursuant to Section 106 without review by SHPO. Listed in the CR.
2S	Individual property determined eligible for NR by the Keeper. Listed in the CR.
2S2	Individual property determined eligible for NR by a consensus through Section 106 process. Listed in the CR.
2S3	Individual property determined eligible for NR by Part I Tax Certification. Listed in the CR.
2S4	Individual property determined eligible for NR pursuant to Section 106 without review by SHPO. Listed in the CR.
2CB	Determined eligible for CR as an individual property and as a contributor to an eligible district by the SHRC.
2CD	Contributor to a district determined eligible for listing in the CR by the SHRC.
2CS	Individual property determined eligible for listing in the CR by the SHRC.
3	**Appears eligible for National Register (NR) or California Register (CR) through Survey Evaluation**
3B	Appears eligible for NR both individually and as a contributor to a NR eligible district through survey evaluation.
3D	Appears eligible for NR as a contributor to a NR eligible district through survey evaluation.
3S	Appears eligible for NR as an individual property through survey evaluation.
3CB	Appears eligible for CR both individually and as a contributor to a CR eligible district through a survey evaluation.
3CD	Appears eligible for CR as a contributor to a CR eligible district through a survey evaluation.
3CS	Appears eligible for CR as an individual property through survey evaluation.
4	**Appears eligible for National Register (NR) or California Register (CR) through other evaluation**
4CM	Master List - State Owned Properties – PRC §5024.
5	**Properties Recognized as Historically Significant by Local Government**
5D1	Contributor to a district that is listed or designated locally.
5D2	Contributor to a district that is eligible for local listing or designation.
5D3	Appears to be a contributor to a district that appears eligible for local listing or designation through survey evaluation.
5S1	Individual property that is listed or designated locally.
5S2	Individual property that is eligible for local listing or designation.
5S3	Appears to be individually eligible for local listing or designation through survey evaluation.
5B	Locally significant both individually (listed, eligible, or appears eligible) and as a contributor to a district that is locally listed, designated, determined eligible or appears eligible through survey evaluation.
6	**Not Eligible for Listing or Designation as specified**
6C	Determined ineligible for or removed from California Register by SHRC.
6J	Landmarks or Points of Interest found ineligible for designation by SHRC.
6L	Determined ineligible for local listing or designation through local government review process; may warrant special consideration in local planning.
6T	Determined ineligible for NR through Part I Tax Certification process.
6U	Determined ineligible for NR pursuant to Section 106 without review by SHPO.
6W	Removed from NR by the Keeper.
6X	Determined ineligible for the NR by SHRC or Keeper.
6Y	Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or Local Listing.
6Z	Found ineligible for NR, CR or Local designation through survey evaluation.
7	**Not Evaluated for National Register (NR) or California Register (CR) or Needs Revaluation**
7J	Received by OHP for evaluation or action but not yet evaluated.
7K	Resubmitted to OHP for action but not reevaluated.
7L	State Historical Landmarks 1-769 and Points of Historical Interest designated prior to January 1998 – Needs to be reevaluated using current standards.
7M	Submitted to OHP but not evaluated - referred to NPS.
7N	Needs to be reevaluated (Formerly NR Status Code 4)
7N1	Needs to be reevaluated (Formerly NR SC4) – may become eligible for NR w/restoration or when meets other specific conditions.
7R	Identified in Reconnaissance Level Survey: Not evaluated.
7W	Submitted to OHP for action – withdrawn.

12/8/2003

APPENDIX G:
HAZARDOUS MATERIALS DATA

GeoTracker Hazardous Materials Sites

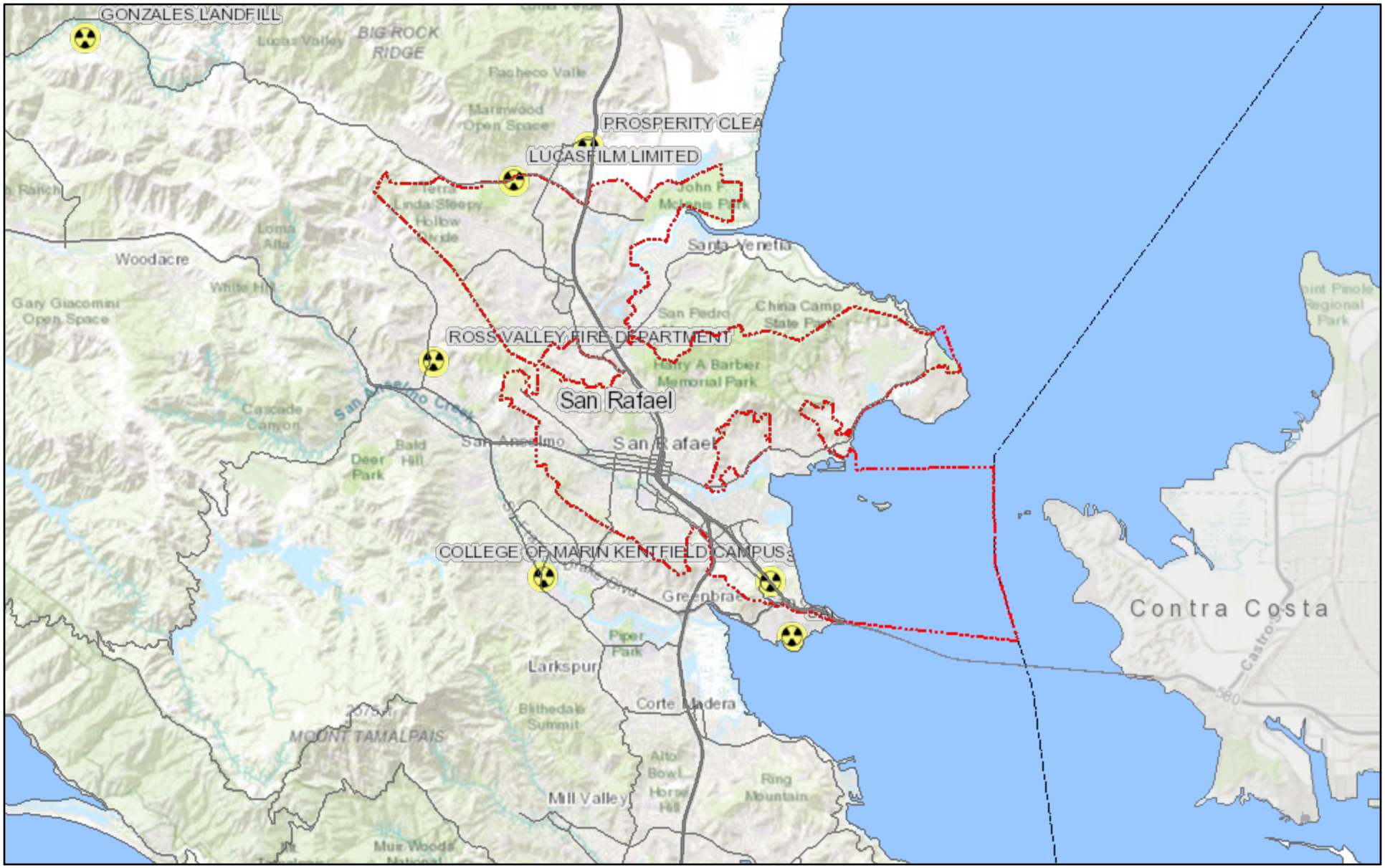
SITE NAME	GLOBAL ID	SITE_TYPE	STATUS	ADDRESS	CITY	LATITUDE	LONGITUDE
68 GARY PLACE	T0604100298	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	68 GARY PL	SAN RAFAEL	37.9599986	-122.508939
7 ELEVEN	T0604100001	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	80 MEDWAY RD	SAN RAFAEL	37.964563	-122.507182
7 HOAG STREET	T10000012490	CLEANUP PROGRAM SITE	OPEN - INACTIVE	7 HOAG STREET	SAN RAFAEL	37.96432	-122.51198
ACME ALARM COMPANY	T0604100002	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	128 MITCHELL BLVD	SAN RAFAEL	38.015788	-122.535496
ADRIAN PUMP STATION	T0604100003	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	605 ADRIAN WY	SAN RAFAEL	38.011958	-122.516223
ALBERT'S TRANSMISSION SERVICE	T0604100004	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1249 FRANCISCO BLVD E	SAN RAFAEL	37.955294	-122.499565
ARCO # 02135	T0604100011	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	440 3RD ST	SAN RAFAEL	37.9710802	-122.518456
ARCO #6157	T0604100008	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1401 2ND ST	SAN RAFAEL	37.9713519	-122.532728
ART'S AUTO CARE	T0604100257	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1005 NORTHGATE DR	SAN RAFAEL	38.0085734	-122.54513
BELLAM MINI STORAGE	T0604100317	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	24 BELLAM BLVD	SAN RAFAEL	37.95854	-122.506354
BEST BUY	SL0604166786	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	632 IRWIN ST.	SAN RAFAEL	37.9671736	-122.520636
BRUNSING ASSOCIATES	T0604100015	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	513 19 FRANCISCO BLVD E	SAN RAFAEL	37.9671949	-122.516057
BUCKS LANDING	T0604100197	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	665 SAN PEDRO RD N	SAN RAFAEL	38.015382	-122.5037
CALTRANS	T0604100287	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	100 GARY PL	SAN RAFAEL	37.9584684	-122.508912
CALTRANS MAINT FACILITY SAN RAFAEL	T0604100202	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	UNKNOWN MAIN ST	SAN RAFAEL	37.972425	-122.523784
CARRICO PROPERTY	T0604100161	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	619 CANAL ST	SAN RAFAEL	37.967315	-122.512627
CHEVRON	T0604100277	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	100 MARINWOOD AVE	SAN RAFAEL	38.0332111	-122.540324
CHEVRON	T0604100157	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	949 DEL PRESIDIO BLVD	SAN RAFAEL	38.0072175	-122.544518
CHEVRON	T0604100030	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	69 MITCHELL BLVD	SAN RAFAEL	38.0168037	-122.537429
CHEVRON #-6621	T0604100272	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	475 3RD ST	SAN RAFAEL	37.9707344	-122.518501
CHEVRON 9-1413	T0604100168	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1515 2ND ST	SAN RAFAEL	37.9716479	-122.534281
CHUCK COLLINGWOOD'S AUTOMOTIVE	T0604168925	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	625 DEL GANADO	SAN RAFAEL	38.0138291	-122.559413
CITY OF SAN RAFAEL FIRE STATION NO.4	T10000012844	CLEANUP PROGRAM SITE	OPEN - INACTIVE	46 CASTRO AVENUE	SAN RAFAEL	37.96019	-122.5031
CIVIC CENTER SERVICE	T0604142498	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	77 SAN PABLO AVE.	SAN RAFAEL	37.9964163	-122.528479
COMMERCIAL BUILDING	T0604100284	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1115 3RD ST	SAN RAFAEL	37.971995	-122.528991
CONOCOPHILLIPS	T0604141609	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	921 DEL PRESIDIO	SAN RAFAEL	38.0068531	-122.544771
D & S GARAGE	T0604100037	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	718 4TH ST	SAN RAFAEL	37.9725593	-122.523047
DE MAESTRI DISTRIBUTING COMPANY	T0604100039	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3195 KERNER BLVD	SAN RAFAEL	37.958898	-122.501942
DOMINICAN COLLEGE	T0604100307	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	190 PALM AVE	SAN RAFAEL	37.979903	-122.51075
DUFFY BROTHERS GARAGE	T0604100041	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	855 C ST	SAN RAFAEL	37.972048	-122.531385
EUROPEAN AUTO SERVICES, INC.	T0604189707	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1163 FRANCISCO BLVD. EAST	SAN RAFAEL	37.956906	-122.501653
EXXON	T0604100208	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	902 IRWIN ST	SAN RAFAEL	37.971359	-122.520626
EXXON MURRAY TRUST	T0604100089	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1221 3RD ST	SAN RAFAEL	37.972355	-122.530322
FEDERAL EXPRESS -SRFA	T0604136416	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1637 E. FRANCISCO BLVD.	SAN RAFAEL	37.950242	-122.494496
FELTON MOTOR CO INC.	T0604104248	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	60 HOAG STREET	SAN RAFAEL	37.9656131	-122.51046
FERRER PLUMBING	T0604100049	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	58 LOVELL AVE	SAN RAFAEL	37.964775	-122.523049
FOMER UNOCAL #4853	T0604128924	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	86 MEDWAY	SAN RAFAEL	37.9647376	-122.508411
FOODMART	T0604100211	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	709 5TH AVE	SAN RAFAEL	37.973082	-122.522956
FORMER CAR WASH & SERVICE STATION	T0604100090	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	990 FRANCISCO BLVD	SAN RAFAEL	37.960136	-122.504441
FORMER CHEVRON #9-4553	T0604100022	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1722 4TH ST	SAN RAFAEL	37.9741729	-122.537986
FORMER CHEVRON #9-6988	T0604100023	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3 LOCH LOMOND DR	SAN RAFAEL	37.974205	-122.483503
FORMER CHEVRON STATION	T0604100031	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	729 4TH ST	SAN RAFAEL	37.972322	-122.523468
FORMER COUNTY GARAGE	T0604100138	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	519 4TH ST	SAN RAFAEL	37.9719185	-122.519703
FORMER EXXON 7-7067	T0604100047	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	930 DEL PRESIDIO BLVD	SAN RAFAEL	38.0065963	-122.544442
FORMER FAIRCHILD SEMICONDUCTOR	SL20232850	CLEANUP PROGRAM SITE	OPEN - VERIFICATION MONITORING - LAND USE RESTRICTIONS	4300 REDWOOD HIGHWAY	SAN RAFAEL	38.0147442	-122.539744
FORMER GOLDEN STATE LUMBER	T0604100171	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	600 FRANCISCO BLVD W	SAN RAFAEL	37.965189	-122.514539
FORMER GRAND AUTO STORE #9	T10000012836	CLEANUP PROGRAM SITE	OPEN - INACTIVE	850 4TH STREET	SAN RAFAEL	37.97307	-122.52502
FORMER MOBIL	T0604100088	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	981 FRANCISCO BLVD	SAN RAFAEL	37.960203	-122.503825
FORMER MOBIL STATION	T0604100282	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	700 IRWIN ST	SAN RAFAEL	37.9702016	-122.520728
FORMER OAKS RENTS	T0604100258	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	424 IRWIN ST	SAN RAFAEL	37.964049	-122.521168
FORMER PROSPERITY CLEANERS	SL0604185908	CLEANUP PROGRAM SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	187 MARINWOOD AVE.	SAN RAFAEL	38.0322308	-122.538468
GHILOTTI; BARBARA FASKEN TRUST	T0604191565	CLEANUP PROGRAM SITE	OPEN - INACTIVE	200 MORPHEW STREET	SAN RAFAEL	37.948194	-122.488793
GOLDEN GATE TRANSIT	T0604100054	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1011 ANDERSEN DR	SAN RAFAEL	37.955869	-122.503659
GREYHOUND LINE INC	T0604100055	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	701 3RD ST	SAN RAFAEL	37.971476	-122.522743
H & W PRECISION ENGINEERING	T0604100155	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1281 ANDERSEN DR	SAN RAFAEL	37.951372	-122.497344
HARRIS PROPERTY	T0604100174	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	171 3RD ST	SAN RAFAEL	37.969902	-122.514748
HATTAR MOTO SPORTS	T0604117143	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	601 E FRANCISCO BLVD	SAN RAFAEL	37.965083	-122.513931
HOWARD RICE PROPERTY	T0604100253	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	836 FRANCISCO BLVD W	SAN RAFAEL	37.961044	-122.510016
JANET WILLIAMS TRUST	T0604100159	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	128 CARLOS DR	SAN RAFAEL	38.017953	-122.533535
JOHN IRISH JEEP DEALERSHIP	T0604100061	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	898 LINCOLN AVE	SAN RAFAEL	37.971335	-122.52378
JUNG PROPERTY	T0604100255	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	114 MILL ST	SAN RAFAEL	37.965927	-122.511264
KAISER MEDICAL CENTER	T0604100190	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	99 MONTECILLO RD	SAN RAFAEL	38.005851	-122.554915
KEATON MORTUARY	T0604100062	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1011 E ST	SAN RAFAEL	37.974188	-122.533565
KERNER AUTOMOTIVE CENTER	T0604100313	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3241 KERNER BLVD	SAN RAFAEL	37.960204	-122.502108
LAMPERTI INC	T0604100267	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1241 ANDERSEN DR	SAN RAFAEL	37.952109	-122.49841
LOCH LOMOND MARINA	T10000004609	CLEANUP PROGRAM SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	261 LOCH LOMOND DRIVE	SAN RAFAEL	37.9739457	-122.481597
LOCH LOMOND MARINA, WEST JETTY AREA, UST SITE	T0604100064	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	110 LOCH LOMOND DR	SAN RAFAEL	37.9725571	-122.484507
LOS GALLINAS SANITARY DISTRICT	SLT2O305196	CLEANUP PROGRAM SITE	OPEN - INACTIVE	300 SMITH RANCH RD	SAN RAFAEL	38.0250729	-122.518324
MARIN BOAT HOUSE	SLT2O369259	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	115 THIRD STREET	SAN RAFAEL	37.96869	-122.510589
MARIN CLEANERS	SL0604153651	CLEANUP PROGRAM SITE	OPEN - REMEDIATION	520 4TH STREET	SAN RAFAEL	37.9723541	-122.519783
MARIN COLOR SERVICE	T0604100067	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	770 2ND ST	SAN RAFAEL	37.9707883	-122.524102
MARIN COUNTY CIVIC CENTER	T0604100068	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3501 CIVIC CENTER DR	SAN RAFAEL	37.999003	-122.531011
MARIN COUNTY CIVIC CENTER	T0604100330	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3501 CIVIC CENTER DR	SAN RAFAEL	37.9974732	-122.52923
MARIN MANUFACTURING INC	T0604100193	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	191 MILL ST	SAN RAFAEL	37.966083	-122.511151
MARIN MAZDA	T0604100244	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	595 FRANCISCO BLVD E	SAN RAFAEL	37.9651308	-122.51405
MARIN MAZDA AKA TRIPLE S TIRES	T0604100070	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	807 FRANCISCO BLVD	SAN RAFAEL	37.9629048	-122.510029
MARIN SANITARY SERVICE	T0604100173	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1050 ANDERSEN DR	SAN RAFAEL	37.9549737	-122.504465
MARIN SURPLUS MARIN OUTDOORS	T0604100071	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	49 SIMMS ST	SAN RAFAEL	37.95694	-122.506236
MARIN/SONOMA MOSQUITO (FORMER)	SL18312732	CLEANUP PROGRAM SITE	OPEN - VERIFICATION MONITORING	201 THIRD ST	SAN RAFAEL	37.9694192	-122.51524
MARINE CORPS RESERVE CENTER	T0604100072	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	153 MADISON AVE	SAN RAFAEL	38.001334	-122.527652
MARINER DISTRIBUTING	T0604144622	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	110 PAUL DRIVE	SAN RAFAEL	38.0170813	-122.537041
MARITIME REALITY	T0604192692	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1600 LOS GAMOS DR	SAN RAFAEL	38.018845	-122.54116
MARTINEZ ELECTRIC	T0604100261	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3155 KERNER BLVD	SAN RAFAEL	37.95832	-122.50152
MCKESSON WATER PRODUCTS COMPANY	T0604100195	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	648 LINDARO ST	SAN RAFAEL	37.967479	-122.526065
MCLACHLIN PROPERTY	T0604100262	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	40 PAUL DR	SAN RAFAEL	38.015442	-122.537057
MCPHAIL PUMP STATION	T0604100073	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1580 VENDOLA DR	SAN RAFAEL	38.0152	-122.5083
MCPHAIL'S INC	T0604100074	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	917 C ST	SAN RAFAEL	37.972669	-122.530073
MCPHAIL-SHAMROCK CONCRETE PLANT	SL0604154124	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	548 DUBOIS ST.	SAN RAFAEL	37.9649829	-122.51774
MECHANICS AUTOMOTIVE CARE	T0600194036	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	296 N. SAN PEDRO RD.	SAN RAFAEL	38.010056	-122.518793
MIRACLE MILE PARTNERS	T0604100077	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1942 4TH ST	SAN RAFAEL	37.974953	-122.542603
MISSION SQUARE OFFICE BUILDING	T0604100078	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1007 3RD ST	SAN RAFAEL	37.9721155	-122.527957
MOBIL	T0604100158	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1101 3RD ST	SAN RAFAEL	37.9720243	-122.528602
MONTEREY IMPORT COMPANY	T0604100176	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	158 PAUL DR	SAN RAFAEL	38.0161	-122.5358
NICHELINI PROPERTY	T0604100091	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	76 SAN PABLO RD	SAN RAFAEL	37.996503	-122.527928
NIKE BATTERY 93, SF (J09CA094400) - AOI 1 S-112 ELECTRICAL POWER PLANT UST	T10000006071	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH ROAD	SAN RAFAEL	38.0236144	-122.518988
NIKE BATTERY 93, SF (J09CA094400) - AOI 10 S-411 ELECTRICAL POWER PLANT AST	T10000006082	MILITARY CLEANUP SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD	SAN RAFAEL	38.0205379	-122.524932

NIKE BATTERY 93, SF (J09CA094400) - AOI 2 - S-131 MISSILE ASSEMBLY AND TEST BUILDING	T10000006073	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH ROAD	SAN RAFAEL	38.0235806	-122.517958
NIKE BATTERY 93, SF (J09CA094400) - AOI 3 S-158 READY ROOM UST	T10000006075	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	291 SMITH RANCH RD	SAN RAFAEL	38.0243	-122.5201
NIKE BATTERY 93, SF (J09CA094400) - AOI 4 S-216 ADMINISTRATIVE AREA	T10000006076	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD	SAN RAFAEL	38.0249	-122.523
NIKE BATTERY 93, SF (J09CA094400) - AOI 5 S-217 UST, ADMINISTRATIVE AREA	T10000006077	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD	SAN RAFAEL	38.02535	-122.5232
NIKE BATTERY 93, SF (J09CA094400) - AOI 6 S-218 UST (AND FUEL LINE), ADMINISTRATIVE AREA	T10000006078	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD	SAN RAFAEL	38.0205379	-122.524932
NIKE BATTERY 93, SF (J09CA094400) - AOI 7 S-219 UST ADMINISTRATIVE AREA	T10000006079	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD	SAN RAFAEL	38.0205379	-122.524932
NIKE BATTERY 93, SF (J09CA094400) - AOI 8 RADAR TOWER UST S-418	T10000006080	MILITARY UST SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD	SAN RAFAEL	38.0253892	-122.51931
NIKE BATTERY 93, SF (J09CA094400) - AOI 9 S-213 ENLISTED MEN'S BARRACKS	T10000006081	MILITARY CLEANUP SITE	OPEN - ELIGIBLE FOR CLOSURE	290 SMITH RANCH RD.	SAN RAFAEL	38.0219409	-122.520833
NORTH BAY PRODUCE	T0604100093	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	95 LOUISE ST	SAN RAFAEL	37.963486	-122.507414
OIL WAREHOUSE	T0604100187	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2350 KERNER BLVD	SAN RAFAEL	37.9475	-122.487
PACIFIC BELL	T0604100180	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	23 MARK DR	SAN RAFAEL	38.0148505	-122.536818
PACIFIC BELL	T0604100167	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1 H ST	SAN RAFAEL	37.97461	-122.539002
PACIFIC BELL	T0604100162	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	7 PROFESSIONAL PKWY	SAN RAFAEL	38.010062	-122.54085
PACIFIC BELL	T0604100100	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	220 SHAVER ST	SAN RAFAEL	37.972809	-122.534284
PACIFIC BELL	T0604100325	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	96 LOUISE ST	SAN RAFAEL	37.963755	-122.506707
PACIFIC PLUMBING & HEATING	T0604100020	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	8 LOVELL AVE	SAN RAFAEL	37.964933	-122.522479
PACIFIC SUPPLY	T0604100102	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	61 JORDAN ST	SAN RAFAEL	37.966498	-122.523019
PEACOCK GAP GOLF & COUNTRY CLB	T0604100104	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	333 BISCAYNE DR	SAN RAFAEL	37.99385	-122.466491
PETER'S ALLIANCE	T0604100051	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	831 FRANCISCO BLVD E	SAN RAFAEL	37.962598	-122.508345
PETER'S BEACON	T0604100007	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	108 BELLAM BLVD	SAN RAFAEL	37.9605206	-122.504494
PG & E SERVICE CENTER	T0604100105	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1220 ANDERSEN DR	SAN RAFAEL	37.9511759	-122.499427
PG&E - MGP - SAN RAFAEL	SL20212830	CLEANUP PROGRAM SITE	OPEN - REMEDIATION - LAND USE RESTRICTIONS	THIRD ST AND BROOKS AVE	SAN RAFAEL	37.9716056	-122.526816
PIRO PROPERTY	T0604100154	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	240 ELIZABETH WY	SAN RAFAEL	37.986148	-122.540115
PRIVATE RESIDENCE	T0604170584	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN RAFAEL	37.981304	-122.496989
PROSHOP INC.	T10000002283	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	658 IRWIN STREET	SAN RAFAEL	37.967864	-122.521317
RAB MOTORS	T0604164335	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	540 FRANCISCO BLVD	SAN RAFAEL	37.965576	-122.516193
RAB MOTORS/CALTRANS	SL0604150987	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED - LAND USE RESTRICTIONS	440 FRANCISCO BLVD. WEST	SAN RAFAEL	37.966753	-122.517788
RAB MOTORS/CALTRANS	SL0604148996	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED - LAND USE RESTRICTIONS	550 FRANCISCO BLVD. WEST	SAN RAFAEL	37.964981	-122.514678
REDWOOD OIL COMPANY	T0604100109	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1011 LINCOLN AVE	SAN RAFAEL	37.9732243	-122.523957
REDWOOD OIL COMPANY	T0604100107	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1320 2ND ST	SAN RAFAEL	37.9716507	-122.532037
RHODES' WHEEL & BRAKE	T0604100111	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	49 MEDWAY RD	SAN RAFAEL	37.9644416	-122.509272
RICH ELECTRIC	T0604100172	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	110 CARLOS DR	SAN RAFAEL	38.0164537	-122.535613
RLJ INCORPORATION	T0604100112	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	20 BELLAM BLVD	SAN RAFAEL	37.95821	-122.506033
SAN RAFAEL AIRPORT	SL0604198426	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	397 SMITH RANCH RD.	SAN RAFAEL	38.0177367	-122.525416
SAN RAFAEL CHRYSLER DODGE	T0604100115	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1075 FRANCISCO BLVD	SAN RAFAEL	37.9582291	-122.503063
SAN RAFAEL CITY OF CORPORATION YARD	T0604100323	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	790 LINCOLN AVE	SAN RAFAEL	37.9700028	-122.523957
SAN RAFAEL CITY SCHOOLS MAINTENANCE FACILITY	T10000003168	LUST CLEANUP SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	38 UNION ST.	SAN RAFAEL	37.9708465	-122.515631
SAVOY RAIN TUNNEL	T0604100116	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	620 2ND ST	SAN RAFAEL	37.9705285	-122.521425
SHELL	T0604100125	LUST CLEANUP SITE	OPEN - VERIFICATION MONITORING	834 IRWIN ST	SAN RAFAEL	37.970819	-122.520679
SHELL	T0604100123	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	755 2ND ST	SAN RAFAEL	37.9704553	-122.523909
SHELL	T0604100256	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1833 4TH ST	SAN RAFAEL	37.9739855	-122.540277
SHELL	T0604100126	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	950 DEL PRESIDIO BLVD	SAN RAFAEL	38.0069588	-122.54395
SISTERS OF ST DOMINIC	T0604100216	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	60 LOCUST ST	SAN RAFAEL	37.9812668	-122.514901
SONNEN LEXUS	T0604100163	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	740 FRANCISCO BLVD	SAN RAFAEL	37.963568	-122.511317
SUN IRON WORKS	T0604192787	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1261 E. FRANCICSO BLVD	SAN RAFAEL	37.955991	-122.500556
TESTA PLUMBING	T0604100294	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	4244 REDWOOD HWY	SAN RAFAEL	38.012945	-122.541148
TEXACO	T0604100092	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1524 2ND ST	SAN RAFAEL	37.9719376	-122.534369
TOSCO - FACILITY #2441	T0604100143	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	34 RITTER ST	SAN RAFAEL	37.97131	-122.524017
TOSCO - FACILITY #7384	T0604100140	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1125 LINCOLN AVE	SAN RAFAEL	37.973709	-122.522533
TREADWELL PROPERTIES	T0604100135	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	60 GOLDEN GATE DR	SAN RAFAEL	37.957102	-122.504649
U HAUL 708062	T0604100136	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1205 FRANCISCO BLVD E	SAN RAFAEL	37.965509	-122.51397
UNOCAL	T0604100139	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	101 MARINWOOD AVE	SAN RAFAEL	38.0332871	-122.539755
UNOCAL	T0604100281	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	360 3RD ST	SAN RAFAEL	37.970566	-122.516125
UNOCAL	T0604100148	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	929 DEL PRESIDIO BLVD	SAN RAFAEL	38.0072274	-122.544052
UPS FORMER	T0604192752	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	635 LINDARO ST	SAN RAFAEL	37.967245	-122.526892
US POSTAL SERVICE	T0604100236	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	40 BELLAM BLVD	SAN RAFAEL	37.95847	-122.505613
VARNER PROPERTY	T0604174987	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	516 IRWIN ST	SAN RAFAEL	37.964546	-122.522148
VIACOM CABLEVISION	T0604100170	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1111 ANDERSEN DR	SAN RAFAEL	37.9540719	-122.501209
WAGNER PROPERTY	T0604100304	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	933 FRANCISCO BLVD E	SAN RAFAEL	37.9614895	-122.506109
WARNECKE PROPERTY	T10000010172	CLEANUP PROGRAM SITE	INFORMATIONAL ITEM	62-68 BELVEDERE ST	SAN RAFAEL	37.96302	-122.50435
WARREN SECURITY SYSTEMS	T0604186886	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1305 EAST FRANCISCO BLVD	SAN RAFAEL	37.955202	-122.499361
WATKIN & BORTOLUSSI INC	T0604100152	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	77 LARKSPUR ST	SAN RAFAEL	37.963839	-122.5026
WEBER PLASTERING INC	T0604100207	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	47 DE LUCA PL	SAN RAFAEL	37.96484	-122.521054
WELLS PROPERTY	T0604100169	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	60 SEAVIEW W	SAN RAFAEL	37.973057	-122.507156
WESTERN BOAT HOUSE	T0604194014	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	101 3RD ST	SAN RAFAEL	37.968362	-122.51201
WOLTERING PROPERTY	SL0604108254	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	725 LINCOLN AVENUE	SAN RAFAEL	37.967774	-122.522329
ZAPPETINI & SONS	T0604120262	LUST CLEANUP SITE	COMPLETED - CASE CLOSED - LAND USE RESTRICTIONS	1112 2ND ST.	SAN RAFAEL	37.9713434	-122.529126

EnviroStor Hazardous Materials Sites

ENVIROSTOR ID	PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
21880002	BAHIA VISTA ELEMENTARY SCHOOL	No Action Required	School Investigation	125 Bahia Way	San Rafael
71003673	Baxter Court Property	Certified O&M - Land Use Restrictions Only	Tiered Permit	714 A Francisco Boulevard West	San Rafael
21340010	BAXTERS COURT AREA	Refer: RCRA	State Response	BAXTERS COURT	SAN RAFAEL
80001607	FAIRCHILD SEMICONDUCTOR CORP	Refer: RWQCB	Corrective Action	4300 REDWOOD HWY	SAN RAFAEL
CAD009144619	FAIRCHILD SEMICONDUCTOR CORP	CLOSED	Non-Operating	4300 REDWOOD HWY	SAN RAFAEL
21490013	Former Maxim Gas Plant Office	No Further Action	State Response	4TH STREET BETWEEN A & B STREETS	SAN RAFAEL
21750004	MARIN RADIATOR & AUTO AIR CONDITIONING	Inactive - Needs Evaluation	Evaluation	786 ANDERSEN DRIVE	SAN RAFAEL
21070001	MARIN-SONOMA MOSQUITO ABATEMENT DISTRICT	Certified / Operation & Maintenance	Voluntary Cleanup	201 3RD STREET	SAN RAFAEL
21490016	PG&E UTILITY CORPORATION YARD	Inactive - Needs Evaluation	Evaluation	1220 ANDERSEN DRIVE	SAN RAFAEL
21490015	PG&E, San Rafael MGP	Active	Voluntary Cleanup	Second Street and Lindaro Street	SAN RAFAEL
CAL000121946	PHOTO WASTE RECYCLING CO. INC.	CLOSED	Non-Operating	2980 KERNER BLVD	SAN RAFAEL
80000679	San Francisco Nike Battery 93 (J09CA0944)	Refer: RWQCB	Military Evaluation		San Rafael
80000703	SAN RAFAEL BIV AREA	No Further Action	Military Evaluation		San Rafael
71002990	Specification Chromium Corporation	No Further Action	Tiered Permit	712 Francisco Boulevard	San Rafael
21340002	SPECIFICATION CHROMIUM CORPORATION	Inactive - Needs Evaluation	Evaluation	14 BAXTERS COURT	SAN RAFAEL
21750008	THE CAR SHOP	No Further Action	Evaluation	616 LINDARO STREET	SAN RAFAEL

Hazardous Sites



2/27/2019, 3:39:55 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

City

Ocean and Bay

Alameda; Contra Costa; Napa; San Francisco; San Mateo; Santa Clara; Solano; Sonoma

Marin County Legal Boundary

Major Road

Hazardous Sites Cortese

County of Marin, Bureau of Land Management, Esri, HERE, Garmin, USGS,

Frank Godino

County of Marin, Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS |

APPENDIX H:
NOISE DATA

LOCAL REGULATIONS AND STANDARDS

Chapter 8.13 - NOISE

Sections:

8.13.010 - Declaration of policy.

It is hereby declared to be the policy of the City of San Rafael, in the exercise of its police power, to protect the peace, health, safety and general welfare of the citizens of San Rafael from excessive, unnecessary and unreasonable noises from any and all sources in the community. It is the intention of the city council to control the adverse effect of such noise sources on the citizens by prescribing standards prohibiting detrimental levels of noise and by providing a remedy for violations. The provisions of this chapter and the remedies contained in this code shall be cumulative and are not intended to replace any otherwise available remedies for public or private nuisances, nor any other civil or criminal remedies otherwise available. In addition, the regulations contained herein are not intended to substitute for any noise analysis conducted as a part of the city's environmental review process for discretionary permit approvals, nor is it intended to limit more strict noise control requirements for discretionary permit approvals should more strict measures be found to be necessary in order to maintain noise levels that are not detrimental to the health and welfare of the citizens of the city.

(Ord. 1789 § 3 (part), 2002).

8.13.020 - Definitions.

For the purposes of this chapter, certain terms are defined as follows:

A. " 'A'-Weighted Sound Level (dBA)" means a decibel scale that approximates the way the human ear responds to various acoustic frequencies.

B. "Commercial property" means property zoned for commercial, office, marine, marine commercial, or water uses, as provided in the City of San Rafael Zoning Ordinance, San Rafael Municipal Code Title 14, or properties zoned as planned development where the principal use is commercial, marine, marine commercial, or water use.

C. "Constant" noise means a continuous noise produced where there is no noticeable change in the level of the noise source. Examples would include such noises as those associated with air conditioners and pool equipment.

D. "Daytime" for purposes of this chapter means the period between seven a.m. (7:00 a.m.) and nine p.m. (9:00 p.m.) Sunday through Thursday and between seven a.m. (7:00 a.m.) and ten p.m. (10:00 p.m.) on Friday and Saturday.

E. "Decibel" means the measurement unit used for the level of sound/noise.

F. "Holidays" mean those holidays designated as federal holidays and the day after Thanksgiving.

G. "Industrial property" means property zoned for industrial or light industrial use as provided in the City of San Rafael Zoning Ordinance, San Rafael Municipal Code Title 14, or properties zoned as planned development where the principal use is industrial or light industrial.

H. "Intermittent" noise means repetitive noises where there is a distinction between the onset and decay of the sound. Examples would include hammering and dog barking.

I. "Mixed use property" means property zoned for both residential and for office and/or commercial use as provided in the City of San Rafael Zoning Ordinance, San Rafael Municipal Code Title 14.

J. "Multi-family residential structure" means any dwelling structure where two or more dwellings are separated by a common wall, floor, or ceiling, including but not limited to apartments, condominiums and townhouses.

K. "Nighttime" for purposes of this chapter means the period between nine p.m. (9:00 p.m.) and seven a.m. (7:00 a.m.) Sunday through Thursday and between ten p.m. (10:00 p.m.) and seven a.m. (7:00 a.m.) on Friday and Saturday.

L. "Noise level" means the maximum constant or intermittent sound level produced by a source or group of sources as measured with a sound level meter using fast response and "A"-weighting. In order to measure a noise level, the controls of the sound level meter should be arranged to the setting appropriate to the type of noise being measured.

M. "Sound level meter" means a device for measuring sound level in decibel units within the performance specifications in the American National Standards Institute Standard S1.4, "Specification for Sound Level Meters."

N. "Property plane" means a vertical plane including the property line that determines the property boundaries in space.

O. "Public property" means property zoned for public/quasi-public or parks/open space use as provided in the City of San Rafael Zoning Ordinance, San Rafael Municipal Code Title 14, or the San Rafael City Plaza, or any public street, right-of-way, or easement.

P. "Residential power equipment" means any mechanically powered saw, sander, drill, grinder, leaf blower, lawnmower, hedge trimmer, edger, or any other similar tool or device, when used in or on any residential property.

Q. "Residential property" means property zoned for residential use as provided in the City of San Rafael Zoning Ordinance, San Rafael Municipal Code Title 14, or properties zoned for mixed use or as planned development where the principal use is residential.

(Ord. 1789 § 3 (part), 2002).

8.13.030 - Loud or unusual noises prohibited.

No person shall maintain, emit or make, or cause, suffer or permit to be maintained, emitted or made, any noise or sound produced by human, animal, mechanical or other means, which by reason of its raucous or nerve-wracking nature, shall disturb the peace or comfort or be injurious to the health of any person or persons; and such a noise or sound may be deemed in violation of this section regardless whether it is found to be within the noise limits established elsewhere in this chapter for the location or type of noise or sound.

(Ord. 1789 § 3 (part), 2002).

8.13.040 - General noise limits.

Subject to the exceptions and exemptions set forth in Sections 8.13.050 and 8.13.060 of this chapter, the general noise limits set forth in this section shall apply. A summary of the general noise limits set forth in this section is set forth in Table 8.13-1. Where two or more noise limits may apply, the more restrictive noise limit shall govern. For purposes of determining sound levels from any source of sound, a sound level measurement shall be made at any point on any receiving private or public property. Notwithstanding the foregoing, in multi-family structures, the microphone shall be placed no closer than 3-½ feet from a wall through which the source of sound at issue is transmitting, and shall also be placed five (5) feet above the floor regardless of whether the source of sound at issue transmits through the floor, ceiling or wall. Sound level measurements shall be made with a sound level meter (Type 1 or 2) set to A-weighting, and "fast" response for intermittent sound. Slow or fast response may be used for constant noise sources. For intermittent sound, the one second rms maximum level (Lmax) shall be used. For constant sound, the average level (Leq) shall be used.

A. Residential property noise limits.

1. No person shall produce, suffer or allow to be produced by any machine, animal or device, or by any other means, a noise level greater than the following, when measured on any residential property:

a.	Daytime:	60 dBA intermittent

		50 dBA constant
b.	Nighttime:	50 dBA intermittent
		40 dBA constant

2. No person shall produce, suffer or allow to be produced by any machine, animal, or device, or by any other means, a noise level greater than the following, when measured on any mixed use property:

a.	Daytime:	65 dBA intermittent
		55 dBA constant
b.	Nighttime:	55 dBA intermittent
		45 dBA constant

3. No person shall produce, suffer or allow to be produced by any machine, animal or device, or by any other means, within the interior of a multi-family residential structure, a noise level greater than the following, when measured through a common interior partition (wall, floor or ceiling) from any other interior location:

a.	Daytime:	40 dBA intermittent
		35 dBA constant
b.	Nighttime:	35 dBA intermittent
		30 dBA constant

B. Commercial property noise limits.

No person shall produce, suffer or allow to be produced by any machine, animal, or device, or by any other means, a noise level greater than sixty-five (65) dBA intermittent or fifty-five (55) dBA constant, when measured on any commercial property.

C. Industrial property noise limits.

No person shall produce, suffer or allow to be produced by any machine, animal or device, or by any other means, a noise level greater than seventy (70) dBA intermittent or sixty (60) dBA constant, when measured on any industrial property.

D. Public property noise limits.

No person shall produce, suffer or allow to be produced by any machine, animal or device, or by any other means, a noise level, when measured on any public property, that is greater than the most restrictive noise standard applicable under this chapter to any private property adjoining the receiving public property.

TABLE 8.13-1—GENERAL NOISE LIMITS

Property type or zone	Daytime limits	Nighttime limits
Residential	60 dBA Intermittent 50 dBA Constant	50 dBA Intermittent 40 dBA Constant
Mixed-use	65 dBA Intermittent 55 dBA Constant	55 dBA Intermittent 45 dBA Constant
Multifamily residential (interior sound source)	40 dBA Intermittent 35 dBA Constant	35 dBA Intermittent 30 dBA Constant

Commercial	65 dBA Intermittent 55 dBA Constant	65 dBA Intermittent 55 dBA Constant
Industrial	70 dBA Intermittent ;lt;60 dBA ConstantTc>70 dBA Intermittent 60 dBA Constant	
Public Property	Most restrictive noise limit applicable to adjoining private property	Most restrictive noise limit applicable to adjoining private property

(Ord. 1789 § 3 (part), 2002).

8.13.050 - Standard exceptions to general noise limits.

The following standard exceptions to the provisions of Section 8.13.040 shall be allowed as of right, to the extent and during the hours specified. A summary of the standard exceptions provided in this section is set forth in Table 8.13-2.

A. Construction. Except as otherwise provided in subsection B of this section, or by the planning commission or city council as part of the development review for the project, on any construction project on property within the city, construction, alteration, demolition, maintenance of construction equipment, deliveries of materials or equipment, or repair activities otherwise allowed under applicable law shall be allowed between the hours of seven a.m. (7:00 a.m.) and six p.m. (6:00 p.m.), Monday through Friday, and nine a.m. (9:00 a.m.) and six p.m. (6:00 p.m.) on Saturdays, provided that the noise level at any point outside of the property plane of the project shall not exceed ninety (90) dBA. All such activities shall be precluded on Sundays and holidays. Violation of the foregoing may subject the permittee to suspension of work by the chief building official for up to two (2) days per violation.

For any construction project involving the construction of one or more new buildings or residences within the city, or when required by the planning commission or city council as part of their development review for the property, the property owner or occupant shall post a sign at all

entrances to the construction site upon commencement of construction, for the purpose of informing all contractors and subcontractors, their employees, agents, materialmen and all other persons at the construction site, of the basic requirements of this chapter.

1. Said sign(s) shall be posted in a conspicuous place visible from the public right-of-way near the entrance to the job site, at least five feet (5') above ground level, and shall be of a white background, with legible black lettering, which lettering shall be a minimum of one and one-half inches (1 1/2") in height.
2. Said sign shall read as follows (or as consistent with other hours approved by the planning commission or city council):

CONSTRUCTION HOURS

(includes any and all deliveries)

MONDAY—FRIDAY	7:00 a.m. to 6:00 p.m.
SATURDAY	9:00 a.m. to 6:00 p.m.
SUNDAY/HOLIDAYS	Prohibited

NOISE LIMITS

Noise level at any point outside of the construction property plane shall not exceed ninety (90) dBA.

Violation of the construction hours and noise limits may be enforced as either an infraction or a misdemeanor punishable by fines or jail time or both, or by an administrative citation with a fine, or by a civil action with a monetary penalty, injunction and/or other remedies, as provided in Chapter 1.42 of this code. In addition, the chief building official may issue a stop work order requiring suspension of work for up to two (2) days per violation.

B. Residential Power Equipment and Construction Activities by Residential Property Owners. Residential power equipment, and construction activities undertaken by residential property owners to maintain or improve their property, shall be allowed between the hours of eight a.m. (8:00 a.m.) and eight p.m. (8:00 p.m.), Monday through Friday, and nine a.m. (9:00 a.m.) and six p.m. (6:00 p.m.) on Saturdays, Sundays and holidays, providing such equipment and/or activities do not produce a

noise level that exceeds ninety (90) dBA beyond the property plane of the property on which the equipment is being used or the activity is occurring. For purposes of this subsection, "construction activities undertaken by the residential property owner" shall include work personally done by the property owner(s) and by a family member, friend or other persons assisting the property owner(s).

C. Sound Performances; Sound-Generating Devices. Notwithstanding anything in this chapter to the contrary, on public property or any other open area to which the public has access, whether publicly or privately owned, sound-generating devices or instruments used for any indoor or outdoor sound performances, athletic events, and special events shall be permitted, provided they do not exceed a noise level of eighty (80) dBA measured at a distance of not less than fifty feet (50') from the property plane or such other limit as may be established by any required approvals and permits therefor obtained from the appropriate governmental entity. Except pursuant to an approved special event, street closure or parade permit, the use of any sound-generating device or instrument for such performances or events between the hours of ten p.m. (10:00 p.m.) and ten a.m. (10:00 a.m.) is unlawful.

D. Refuse Collection. Refuse collection activities shall be permitted as specified in this section, provided they do not produce a noise level in excess of ninety-five (95) dBA measured at a distance of twenty-five feet (25') from the activity:

1. Residential or mixed-use property: between the hours of six a.m. (6:00 a.m.) and nine p.m. (9:00 p.m.), Monday through Saturday;
2. Industrial or commercial property: between the hours of four a.m. (4:00 a.m.) and nine p.m. (9:00 p.m.) daily.

TABLE 8.13-2 - STANDARD EXCEPTIONS TO GENERAL NOISE LIMITS

Type of Activity	Maximum Noise Level	Days/Hours Permitted
Construction	90 dBA	Mon-Fri 7:00 a.m.—6:00 p.m. Sat 9:00 a.m.—6:00 p.m. Sun, Hol.—prohibited or as otherwise set by city approval

Residential Power Equipment and Construction Activities Undertaken by Residential Property Owners	90 dBA	Mon-Fri 8:00 a.m.—8:00 p.m. Sat, Sun, Hol. 9:00 a.m.—6:00 p.m.
Sound performances	80 dBA measured fifty (50) feet or more from property plane, or as excepted by permit approval	Every day 10:00 a.m.—10:00 p.m., or as excepted by permit approval
Refuse Collection	95 dBA	Residential or mixed-use property: Mon-Sat 6:00 a.m.—9:00 p.m. Industrial or commercial property: Daily 4:00 a.m.—9:00 p.m.

(Ord. 1838 § 7, 2005; Ord. 1789 § 3 (part), 2002).

8.13.060 - Exceptions allowed with permit.

A. In addition to the standard exceptions permitted pursuant to Section 8.13.050 of this chapter, the director of community development or his designee may grant a permit allowing an exception from any or all provisions of this chapter where the applicant can show that a diligent investigation of available noise abatement techniques indicates that immediate compliance with the requirements of this chapter would be impractical or unreasonable, or that no public detriment will result from the proposed exception. Any such permit shall be issued with appropriate conditions to minimize the public detriment caused by the permitted exceptions. Any such permit shall be of such duration, as approved by the director of community development or his designee, up to a maximum period of six (6) months, but shall be renewable upon a showing of good cause, and shall be conditioned by a schedule for compliance and details of methods therefor in appropriate cases. At the discretion of the director of community development or his

designee, an exception permit may be issued and reissued for successive short periods of time in order to allow monitoring of the adverse noise impacts of the excepted activity, and additional conditions may be imposed upon reissuance of the permit, if the director of community development or his designee determines that such additional conditions are necessary to mitigate noise impacts from the excepted activity to a level he deems acceptable under all the circumstances.

B. Any application for an exception permit under this section shall be accompanied by a fee to be set by resolution of the city council.

C. Prior to granting any permit under this section, the director of community development or his designee shall provide at least ten (10) calendar days' written notice to all property owners within three hundred feet (300') of the property for which the application is made, and shall consider any objections to the granting of such permit received before issuance of the permit.

D. Any person aggrieved with the decision of the director of community development or his designee may appeal to the city council, by writing filed with the city clerk within five (5) business days after the date of such decision; however, such decision shall not stay the effective date of the permit.

(Ord. 1838 § 8, 2005; Ord. 1789 § 3 (part), 2002).

8.13.070 - Exemptions.

The following shall be exempt from the provisions of this chapter:

A. Aerial warning devices which are required by law to protect the health, safety and welfare of the community;

B. Emergency vehicle responses and all necessary equipment utilized for the purpose of responding to an emergency, or necessary to restore, preserve, protect or save lives or property from imminent danger of loss or harm;

C. Aviation, railroad, and public transit operations;

D. The operation of any municipal or public utility vehicles;

E. Public safety training exercises conducted between the hours of eight a.m. (8:00 a.m.) and eight p.m. (8:00 p.m.);

F. Uses established through any applicable discretionary review process containing specific noise conditions of approval and/or mitigation measures;

G. Work on capital improvements, or repairs on public property by employees or contractors of the city;

H. Vehicle noise subject to regulation under the California Vehicle Code;

I. Emergency repair work performed by, or at the request of, a property owner on his or her private property, where the delay required to obtain an exception permit under this chapter would result in substantial damage, personal injuries, or property loss to the owner, provided that such emergency work shall be subject to such reasonable conditions as may be imposed by authorized city employees to mitigate the noise level of the activity.

(Ord. 1789 § 3 (part), 2002).

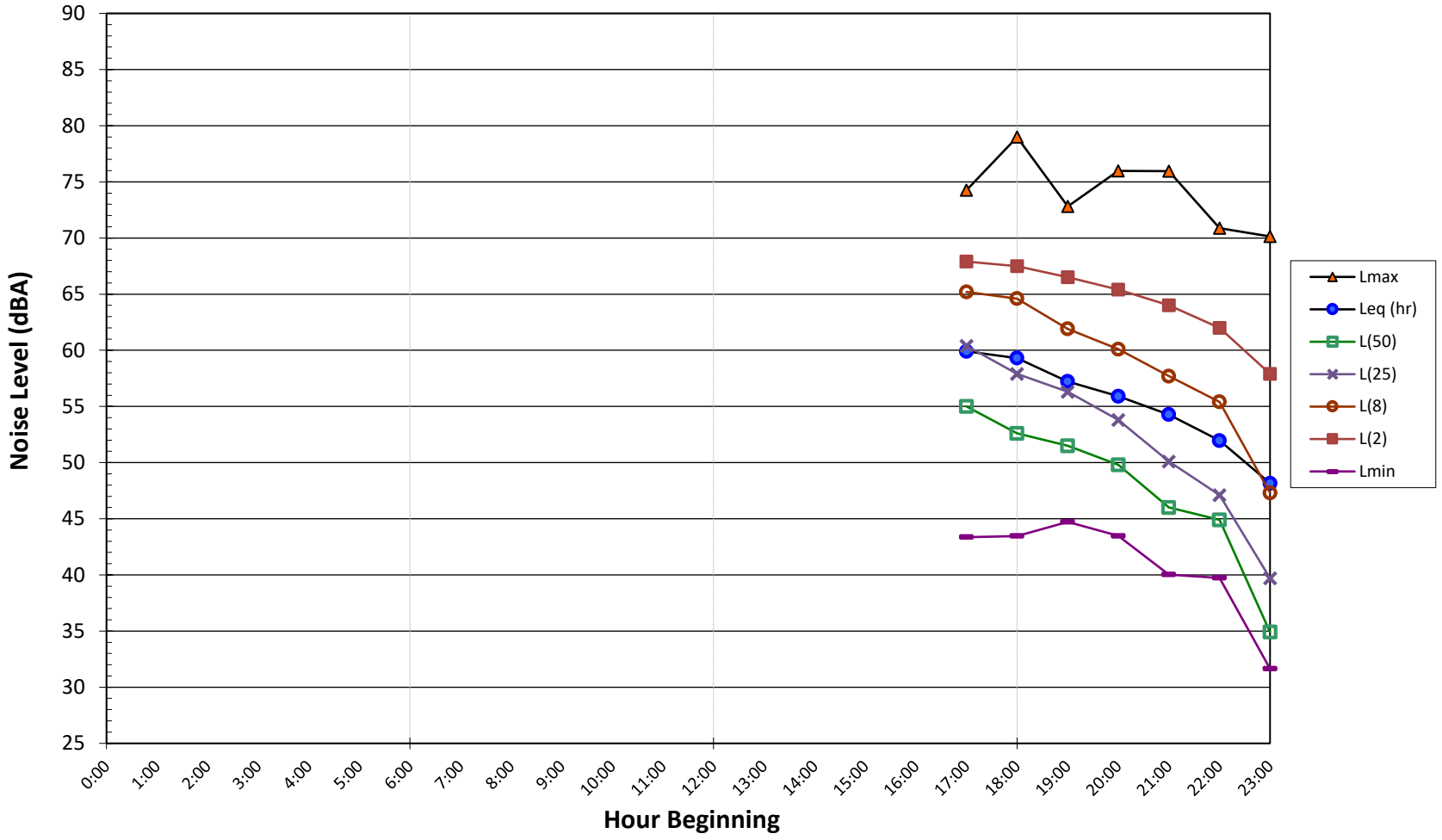
8.13.080 - Violations, penalties.

Any violation of this chapter may be enforced either as an infraction or as a misdemeanor, or by any remedy available to the city under this code, or under state law.

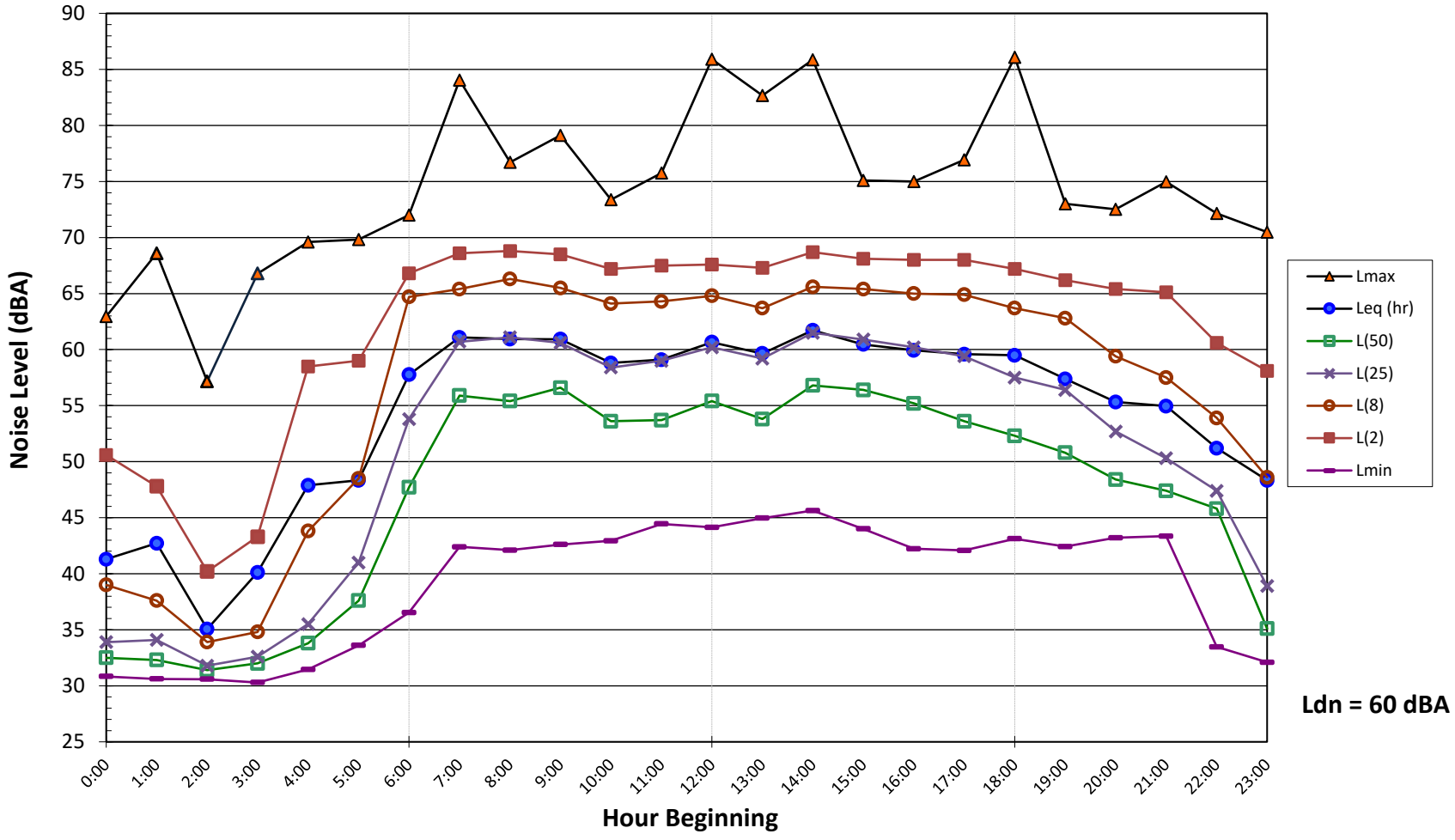
(Ord. 1789 § 3 (part), 2002).

AMBIENT NOISE MONITORING RESULTS

Noise Levels at LT-1
Northgate Drive, San Rafael, CA
Tuesday, May 7, 2019

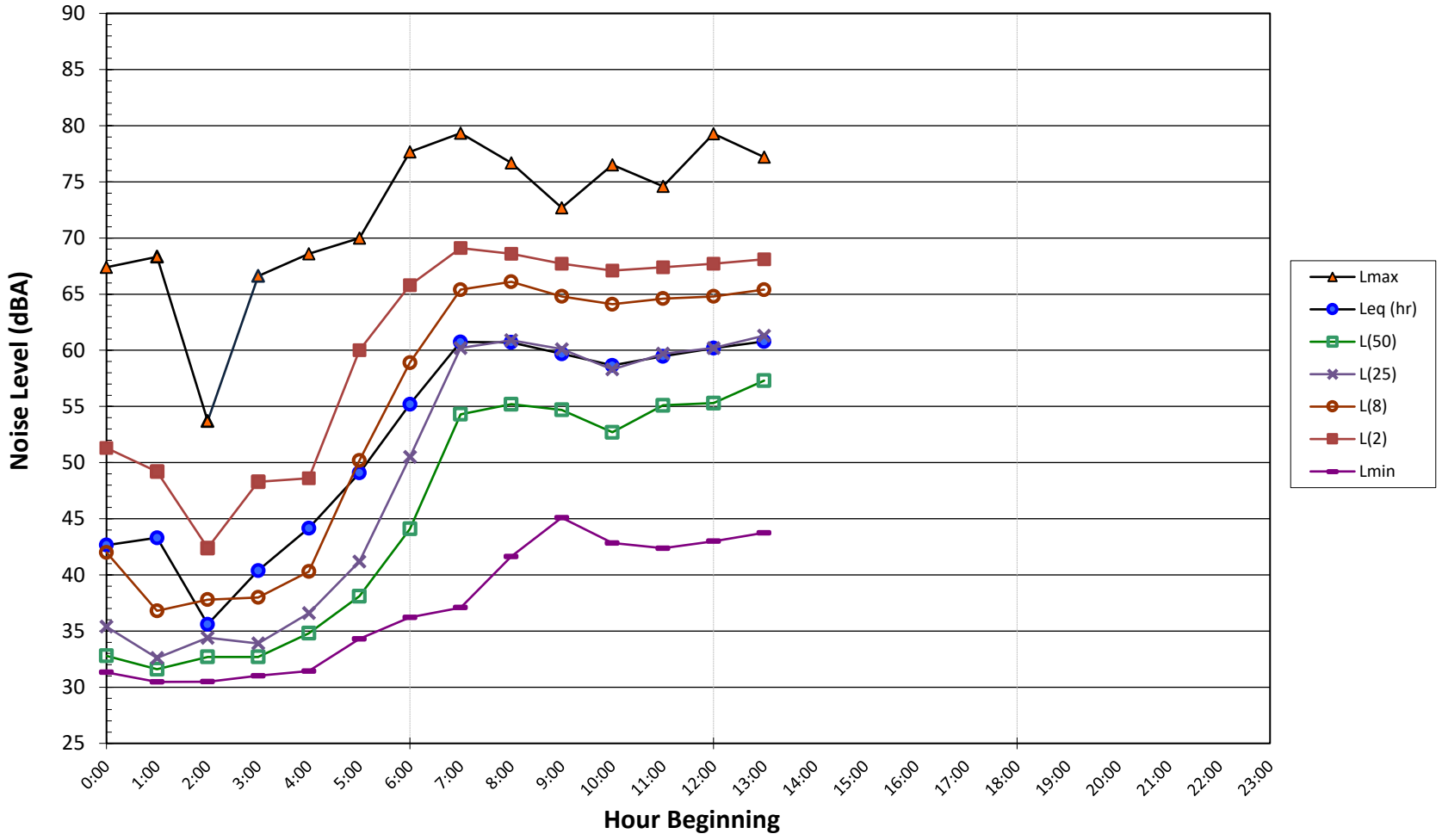


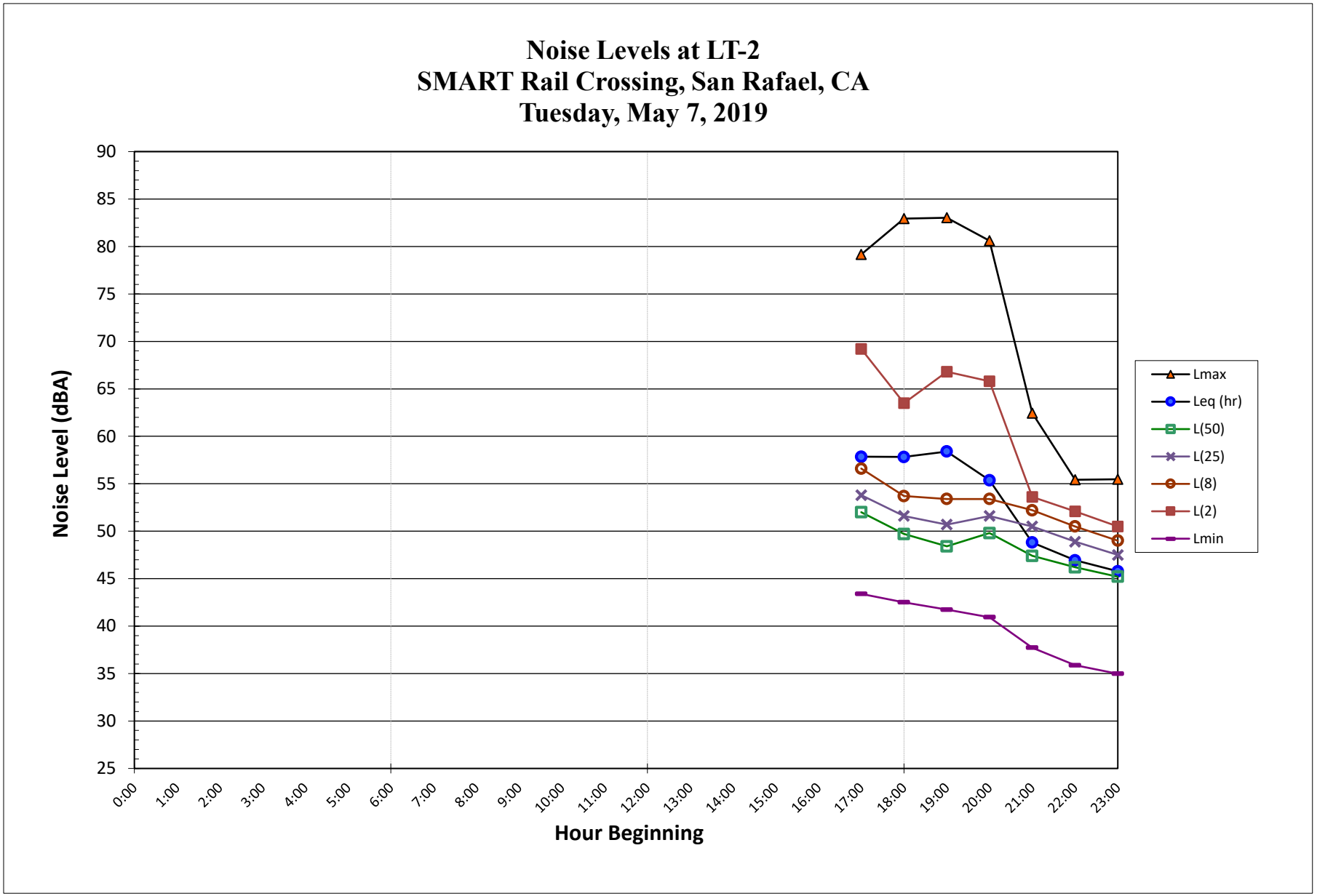
Noise Levels at LT-1
Northgate Drive, San Rafael, CA
Wednesday, May 8, 2019



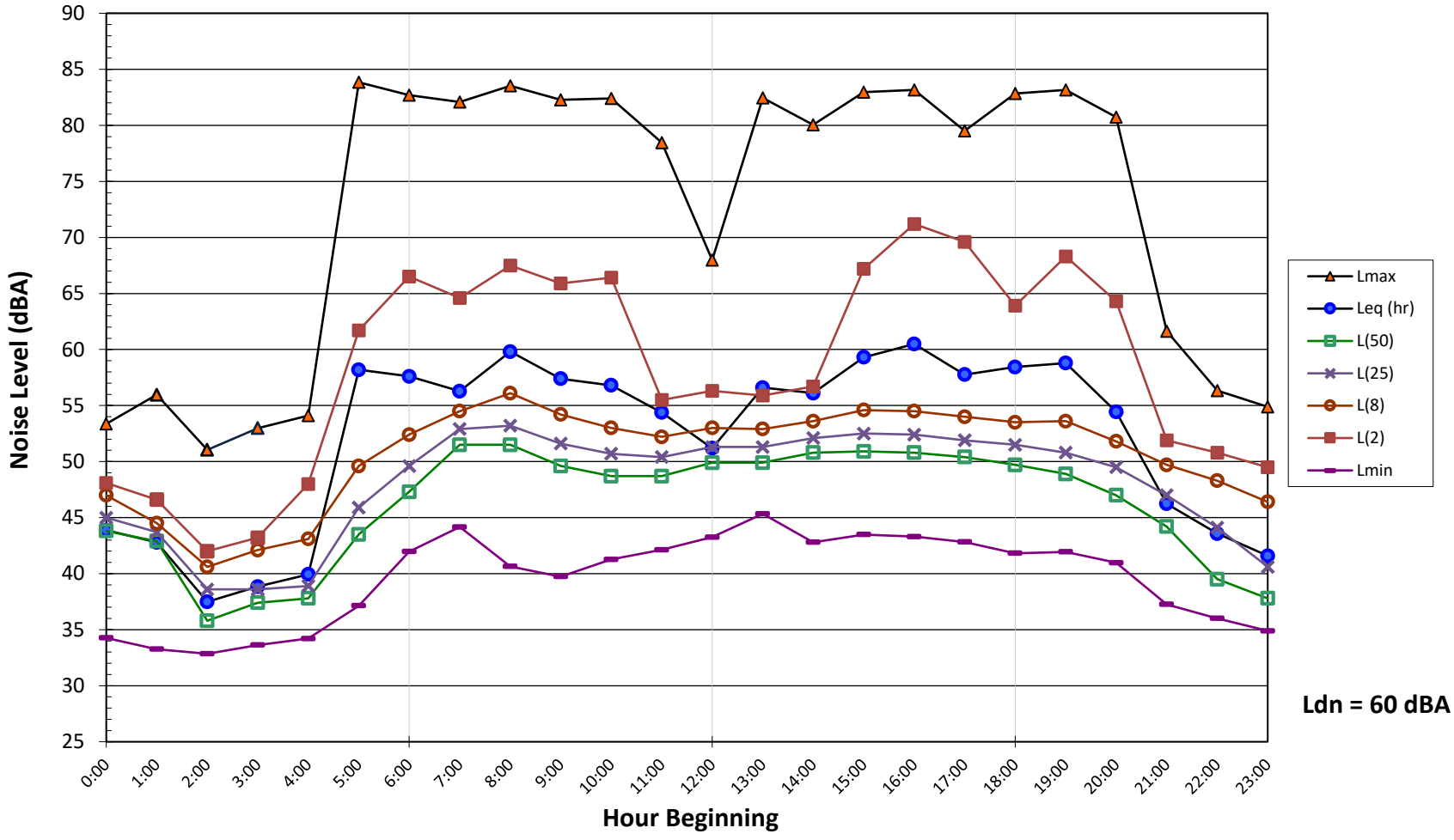
Ldn = 60 dBA

Noise Levels at LT-1
Northgate Drive, San Rafael, CA
Thursday, May 9, 2019



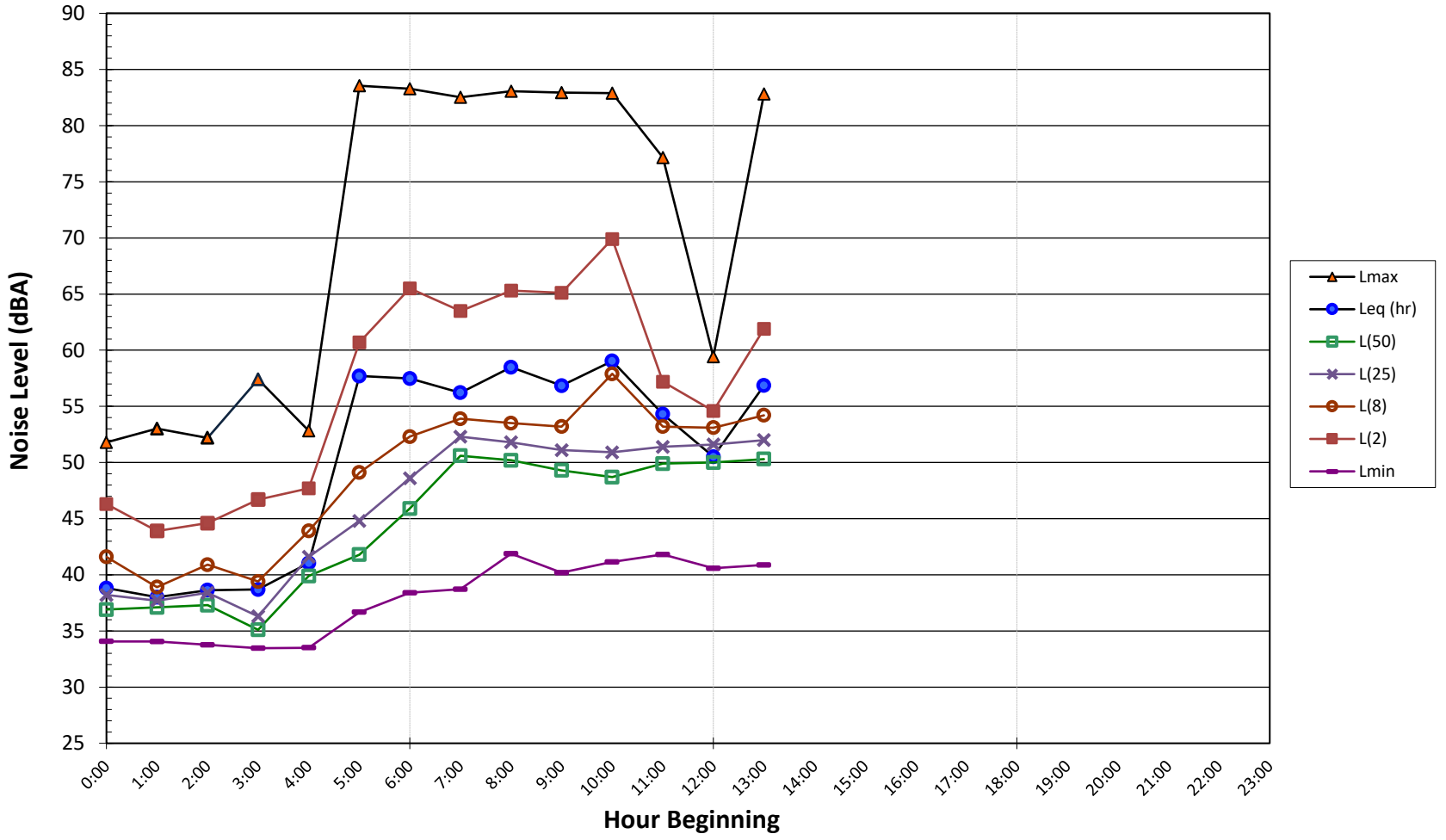

Noise Levels at LT-2
SMART Rail Crossing, San Rafael, CA
Tuesday, May 7, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

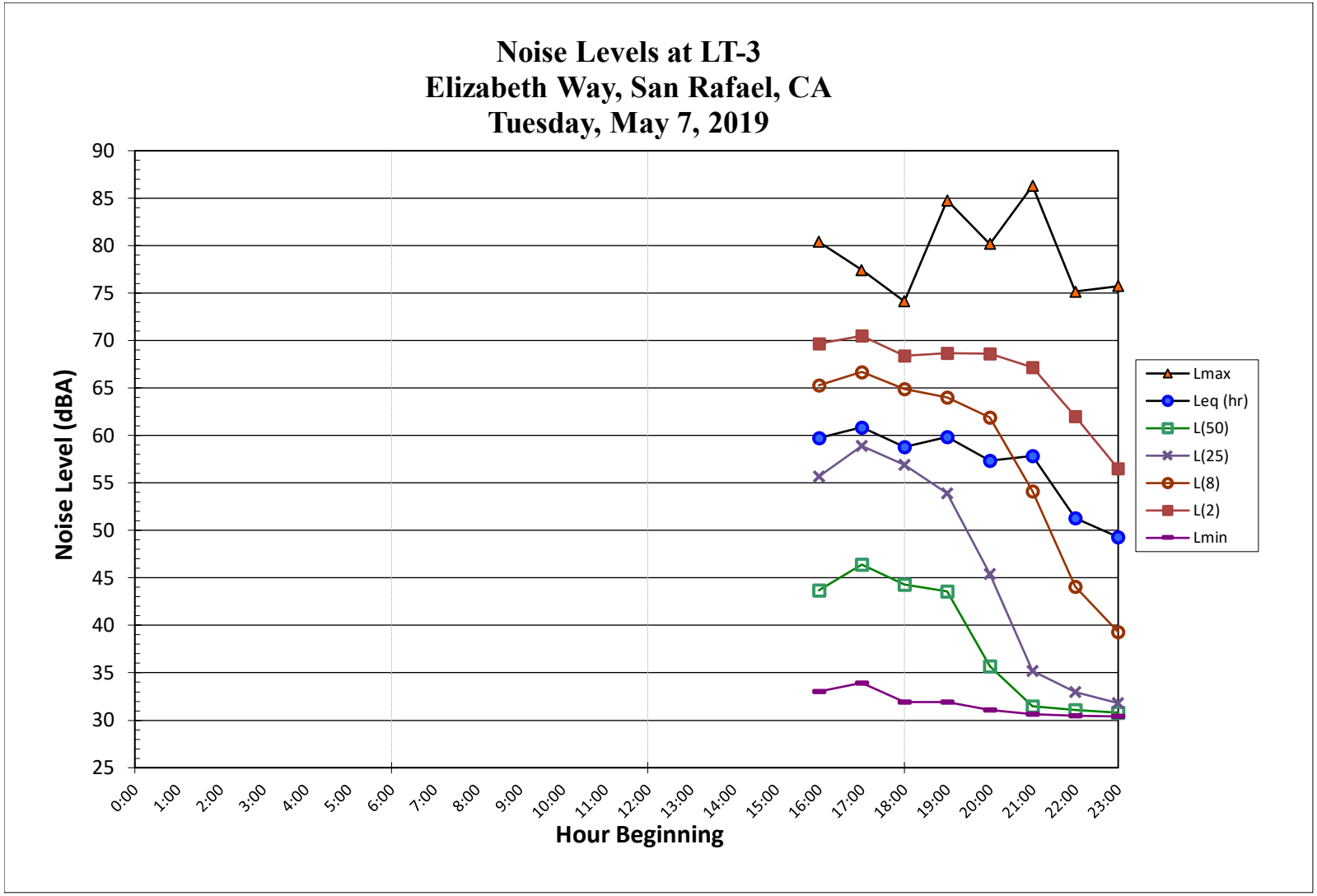
Noise Levels at LT-2
SMART Rail Crossing, San Rafael, CA
Wednesday, May 8, 2019

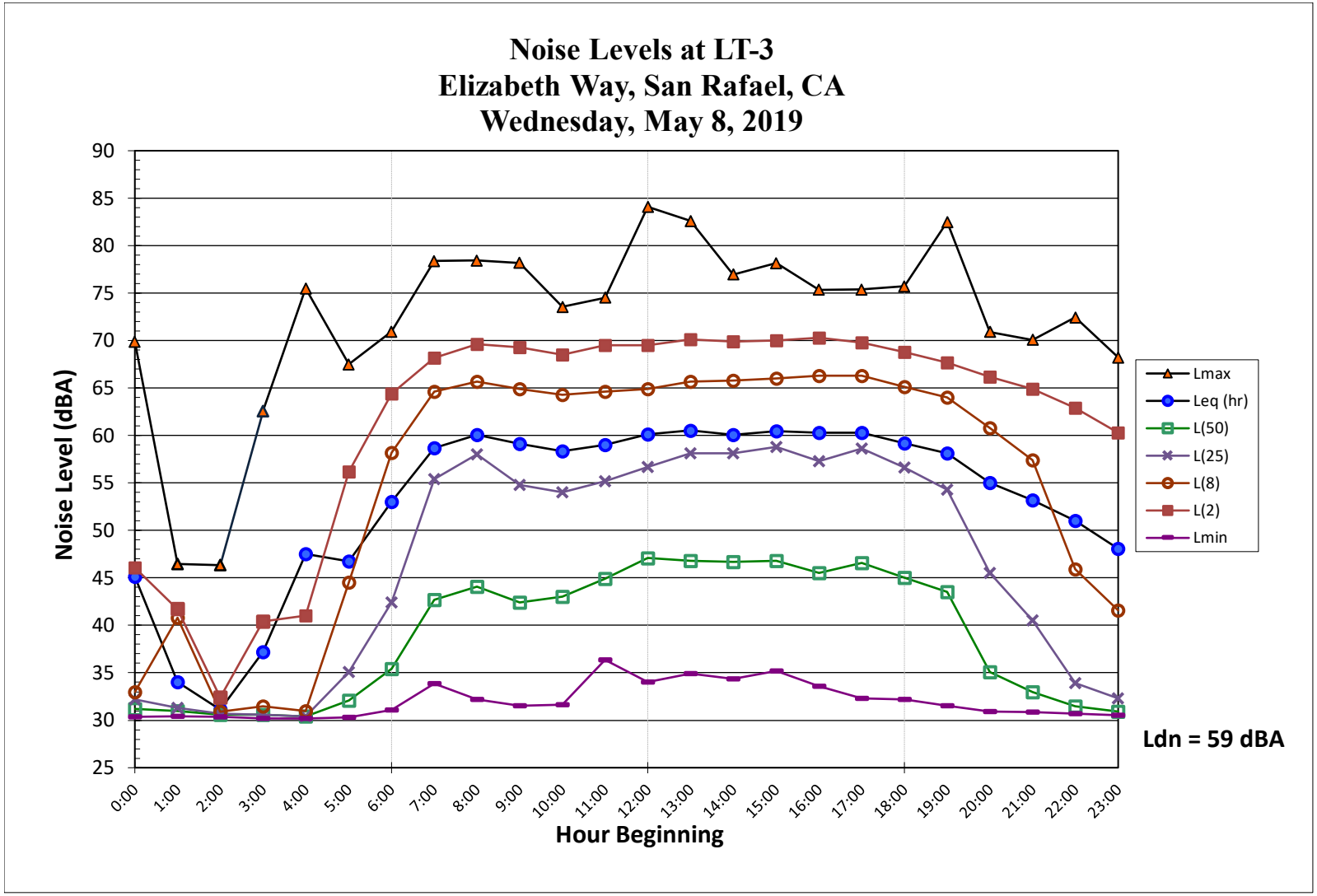


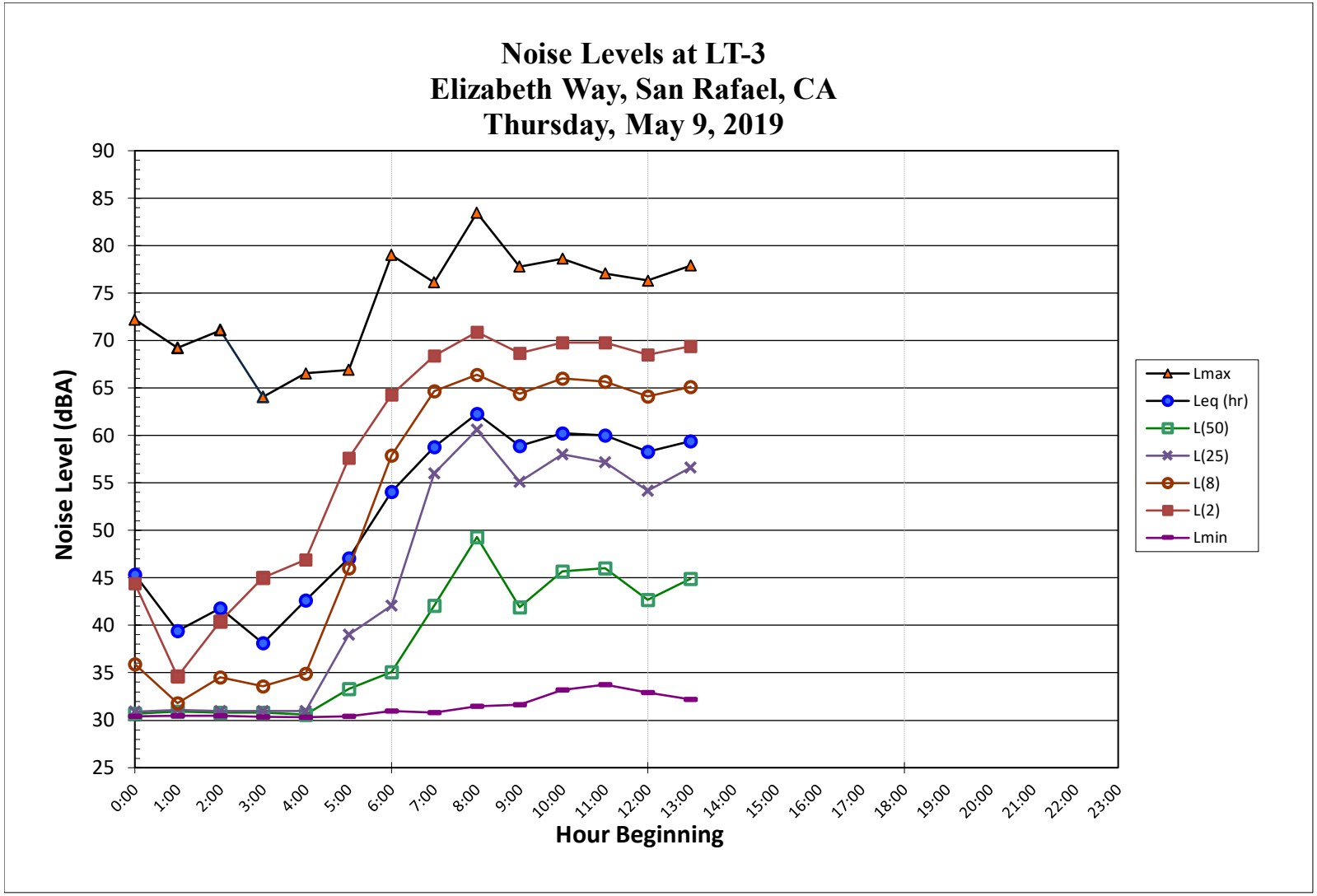
Ldn = 60 dBA

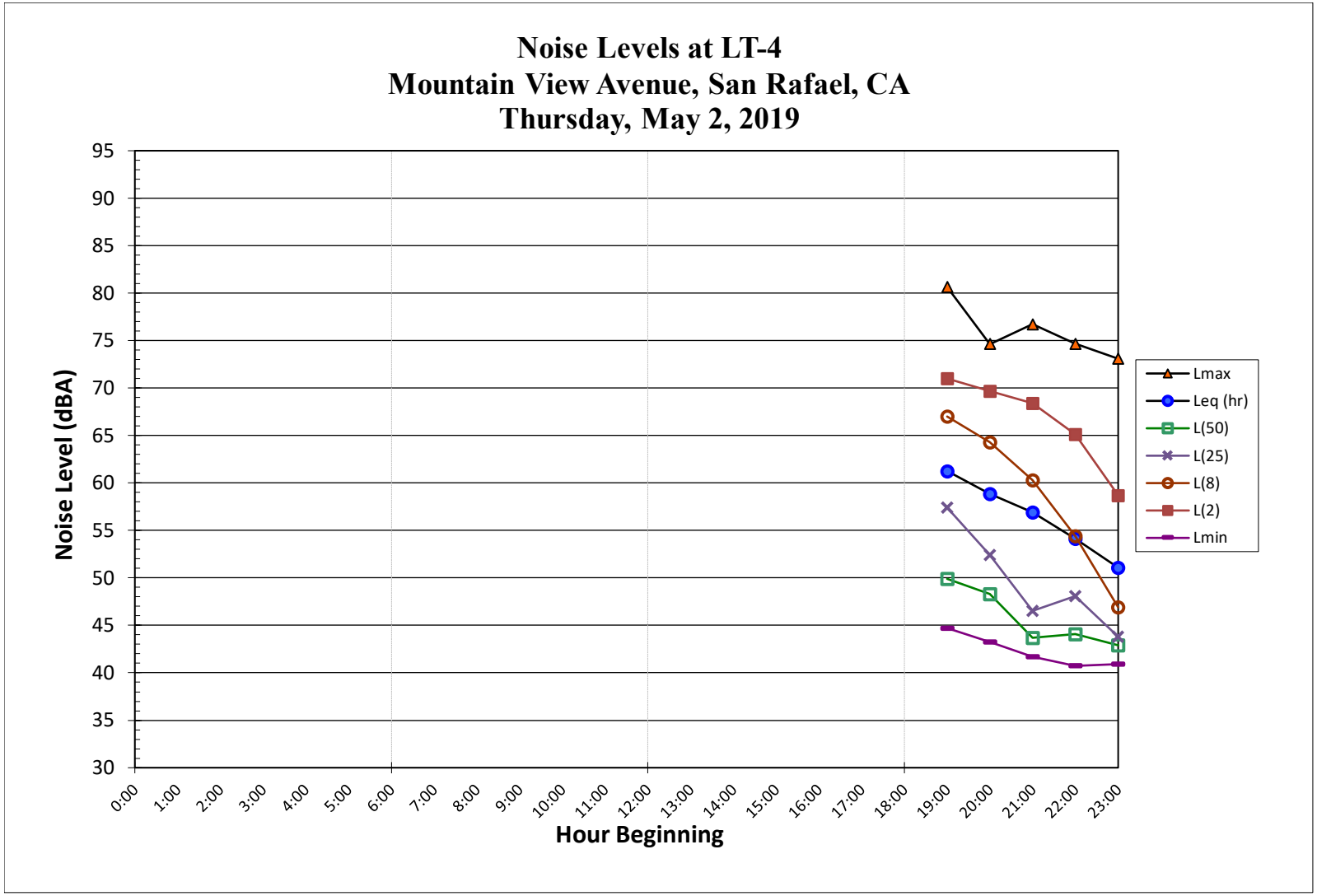
Noise Levels at LT-2
SMART Rail Crossing, San Rafael, CA
Thursday, May 9, 2019

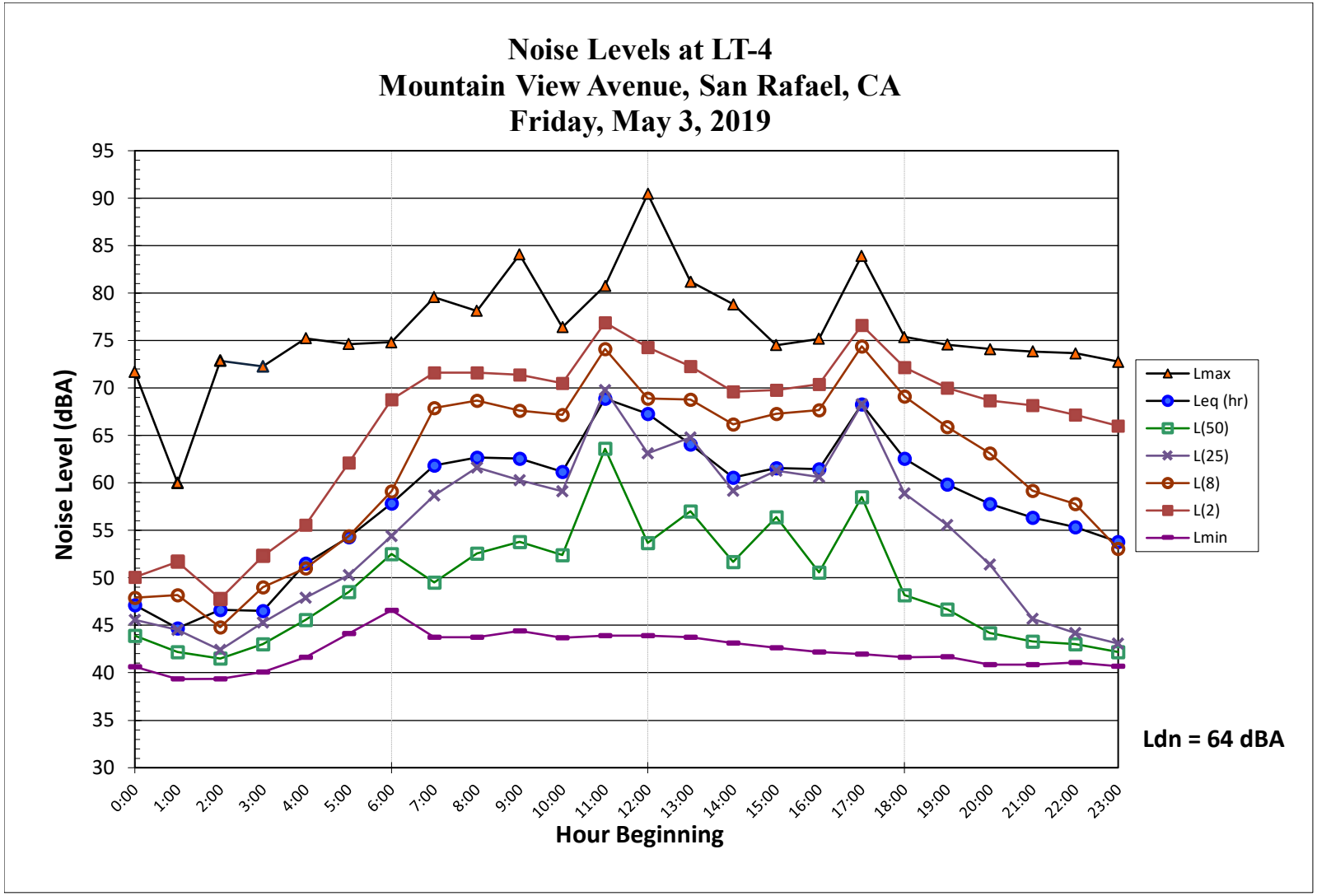


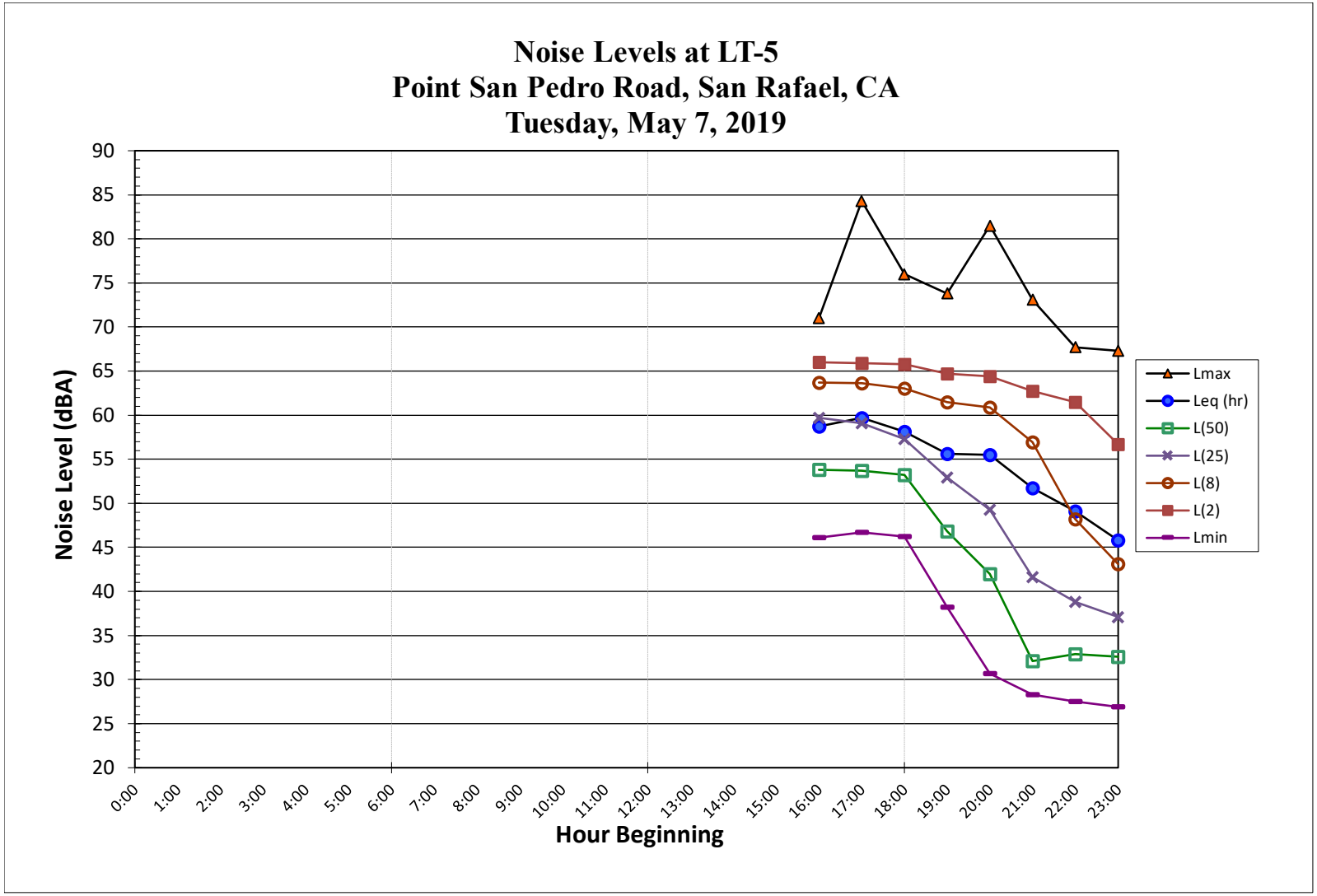

Noise Levels at LT-3
Elizabeth Way, San Rafael, CA
Tuesday, May 7, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

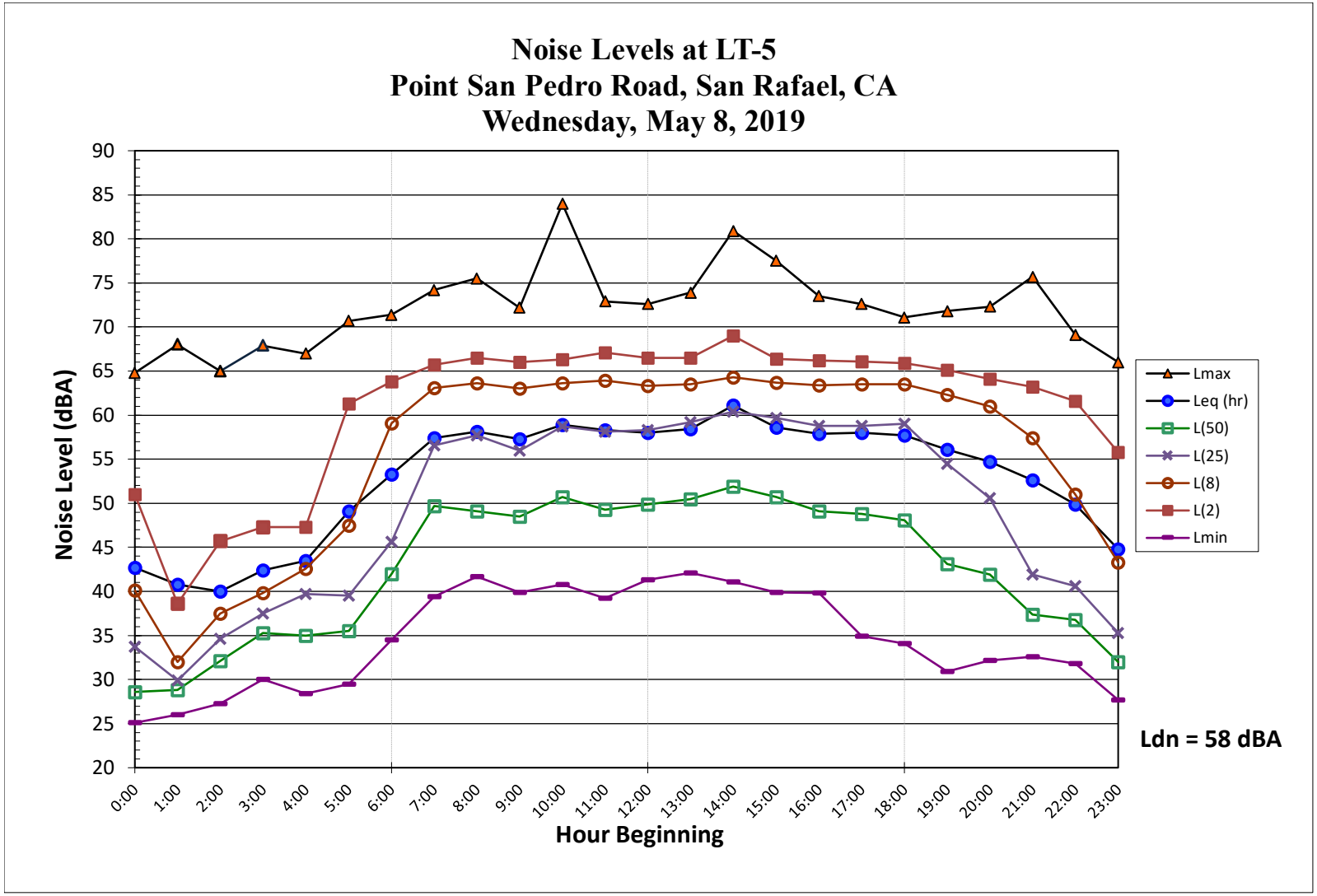

Noise Levels at LT-3
Elizabeth Way, San Rafael, CA
Wednesday, May 8, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin
Ldn = 59 dBA

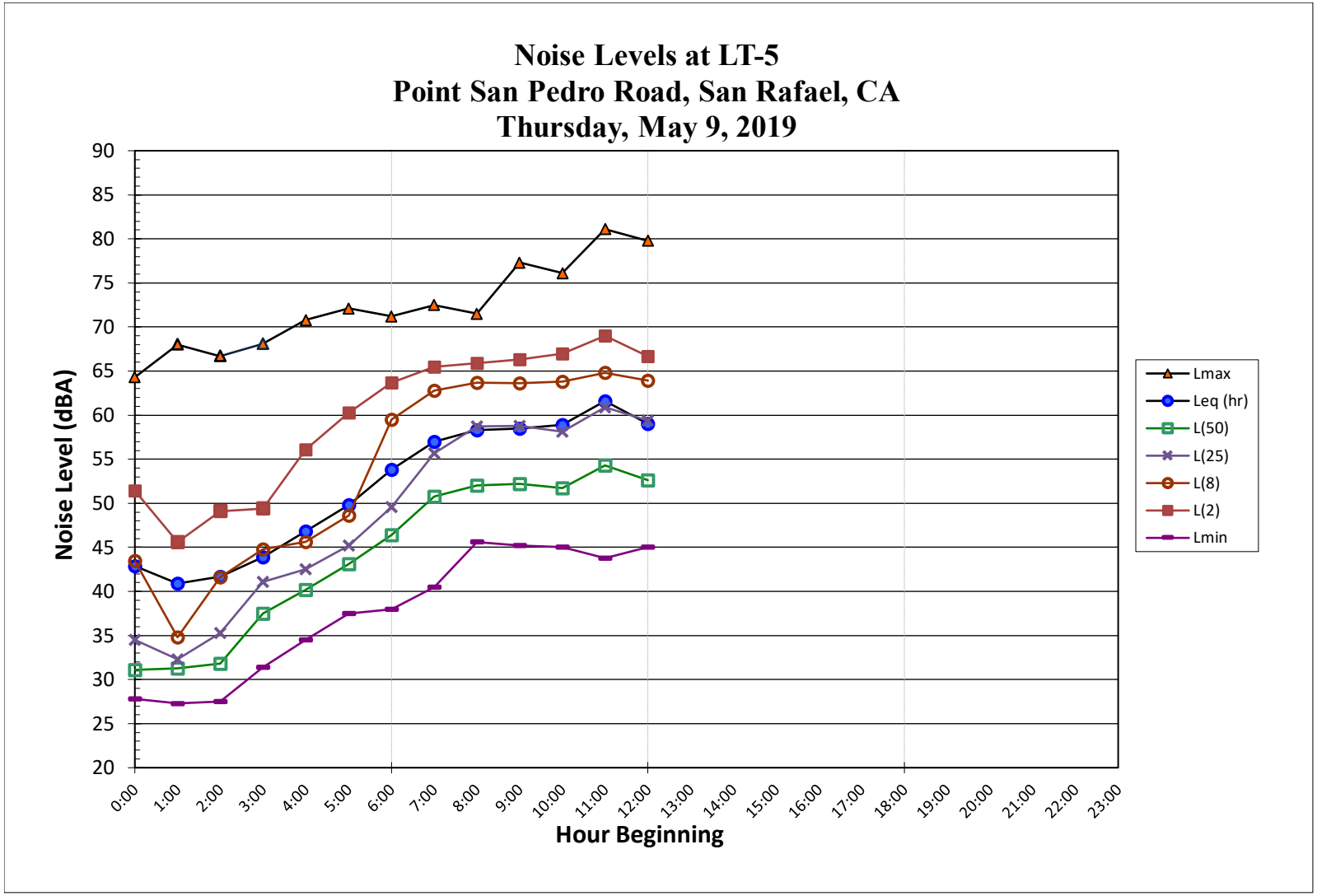

Noise Levels at LT-3
Elizabeth Way, San Rafael, CA
Thursday, May 9, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

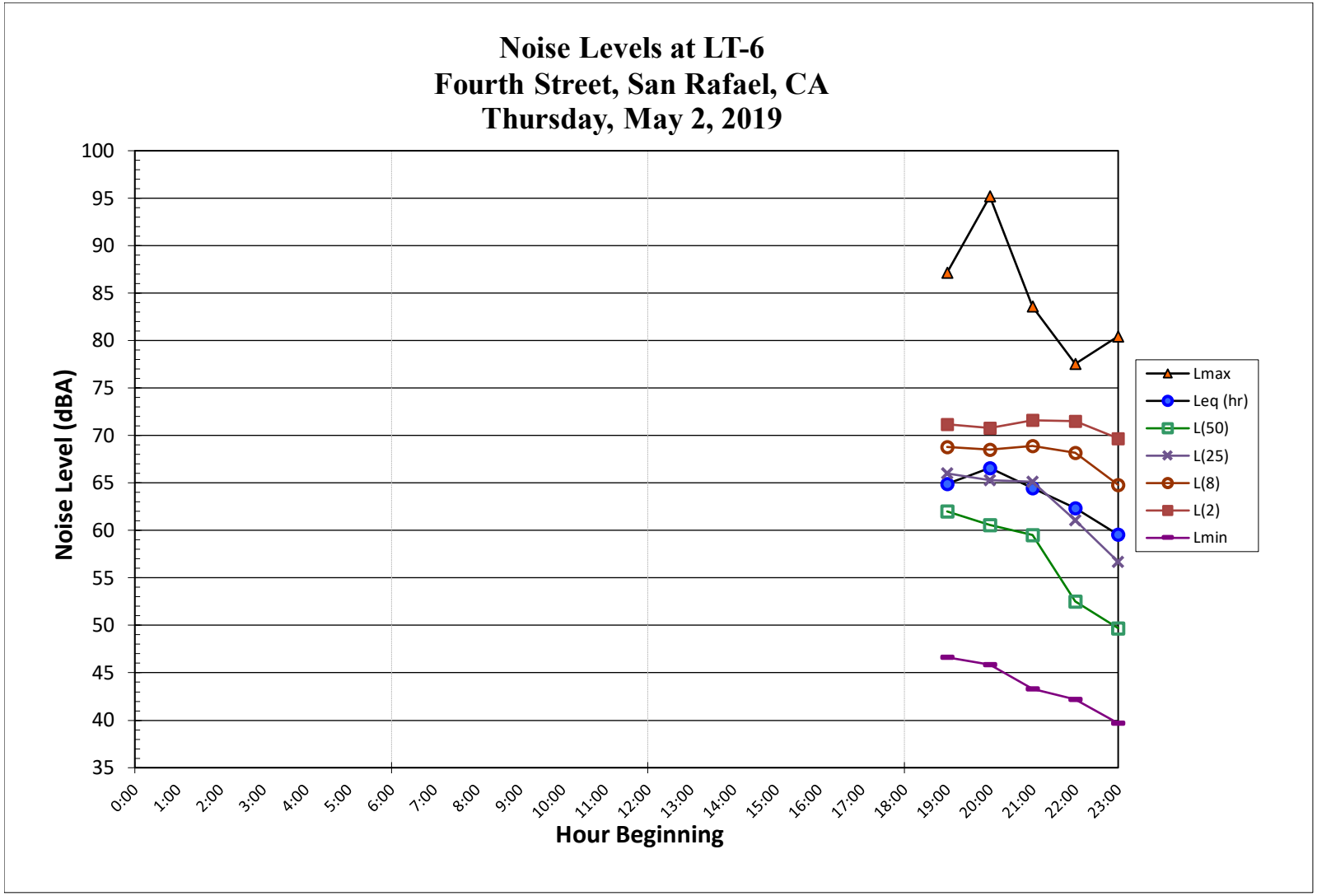

Noise Levels at LT-4
Mountain View Avenue, San Rafael, CA
Thursday, May 2, 2019
Noise Level (dBA)
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

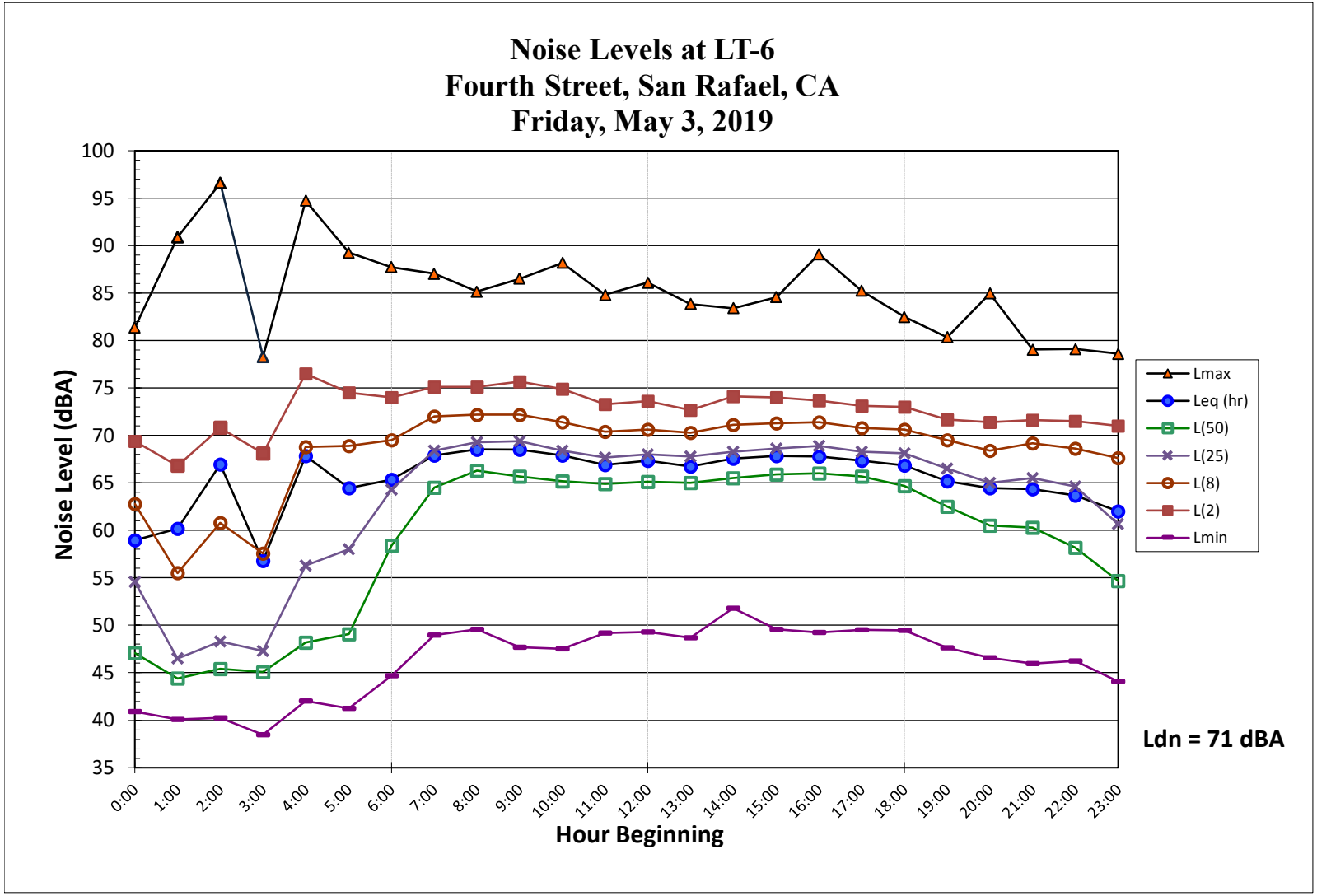

Noise Levels at LT-4
Mountain View Avenue, San Rafael, CA
Friday, May 3, 2019
Noise Level (dBA)
95
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin
Ldn = 64 dBA

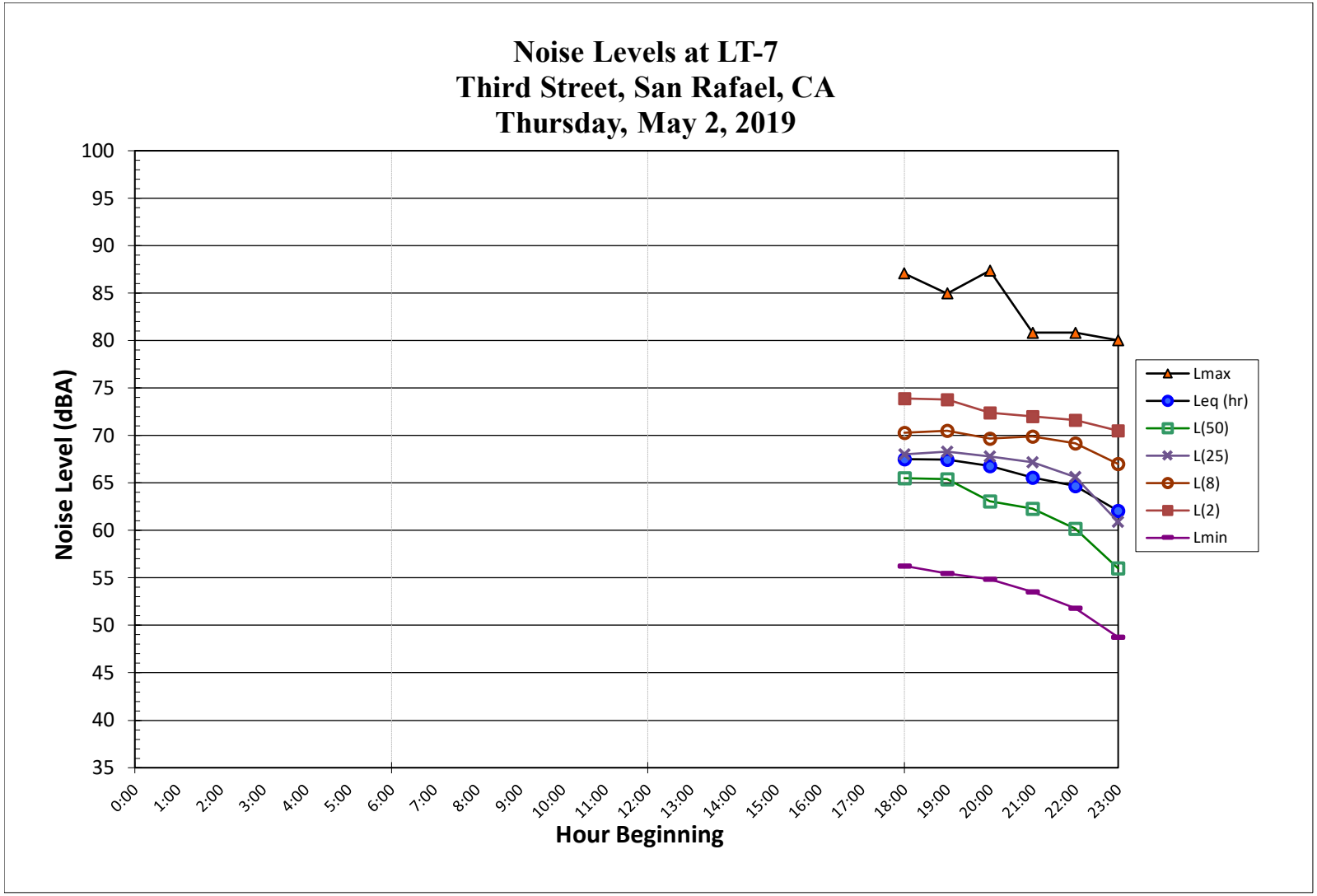

Noise Levels at LT-5
Point San Pedro Road, San Rafael, CA
Tuesday, May 7, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

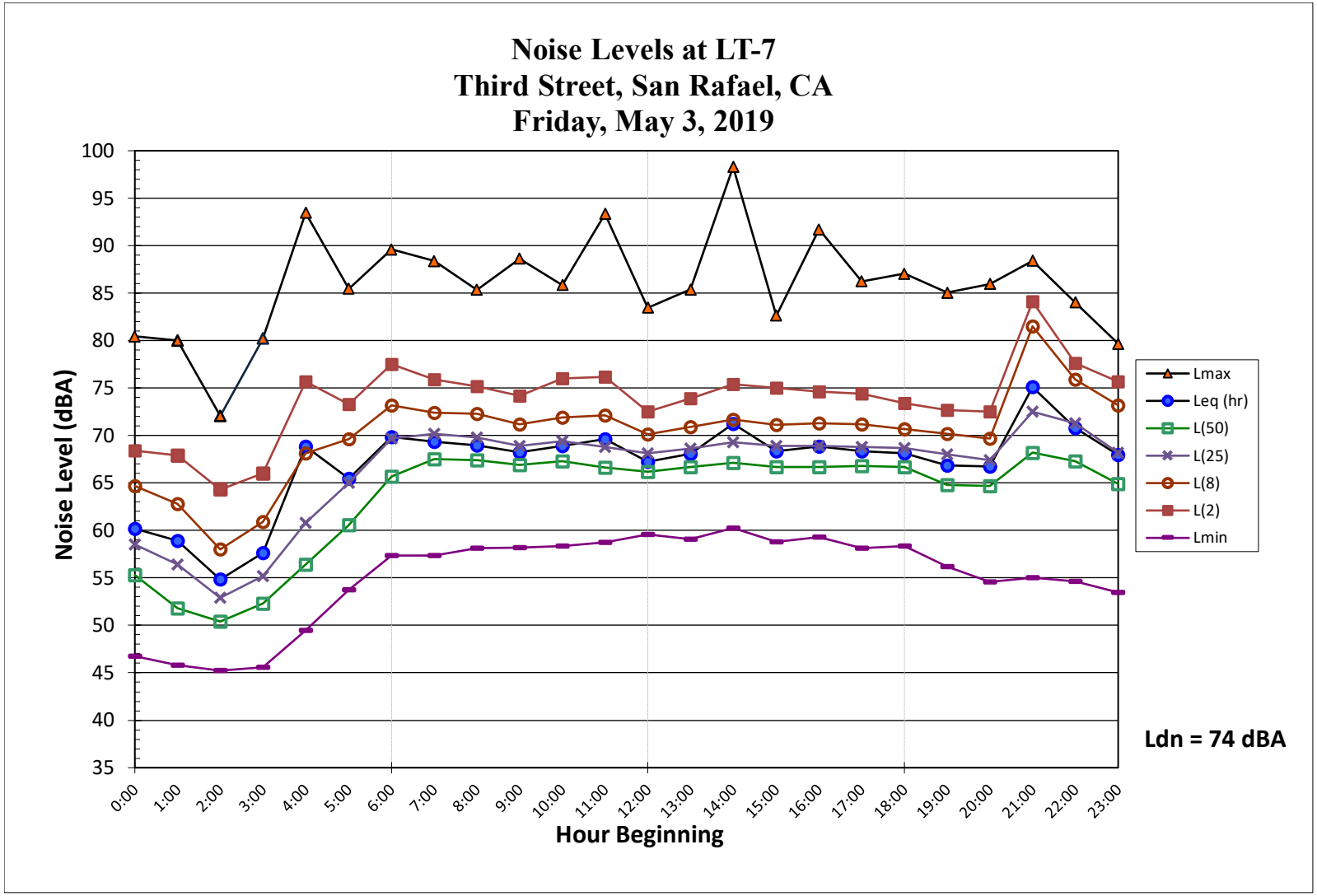

Noise Levels at LT-5
Point San Pedro Road, San Rafael, CA
Wednesday, May 8, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin
Ldn = 58 dBA


Noise Levels at LT-5
Point San Pedro Road, San Rafael, CA
Thursday, May 9, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
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23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

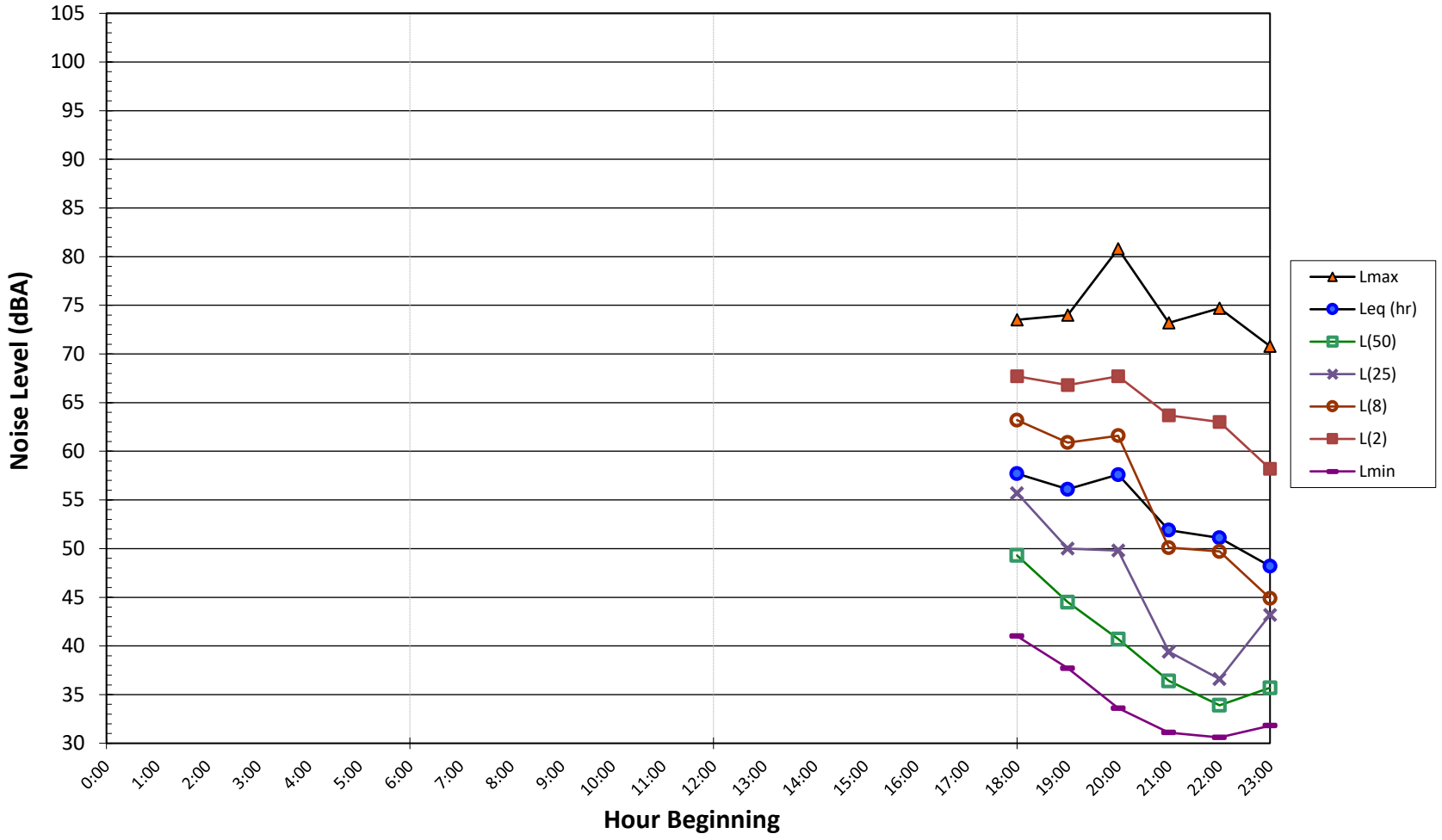

Noise Levels at LT-6
Fourth Street, San Rafael, CA
Thursday, May 2, 2019
Noise Level (dBA)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin


Noise Levels at LT-6
Fourth Street, San Rafael, CA
Friday, May 3, 2019
Noise Level (dBA)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin
Ldn = 71 dBA

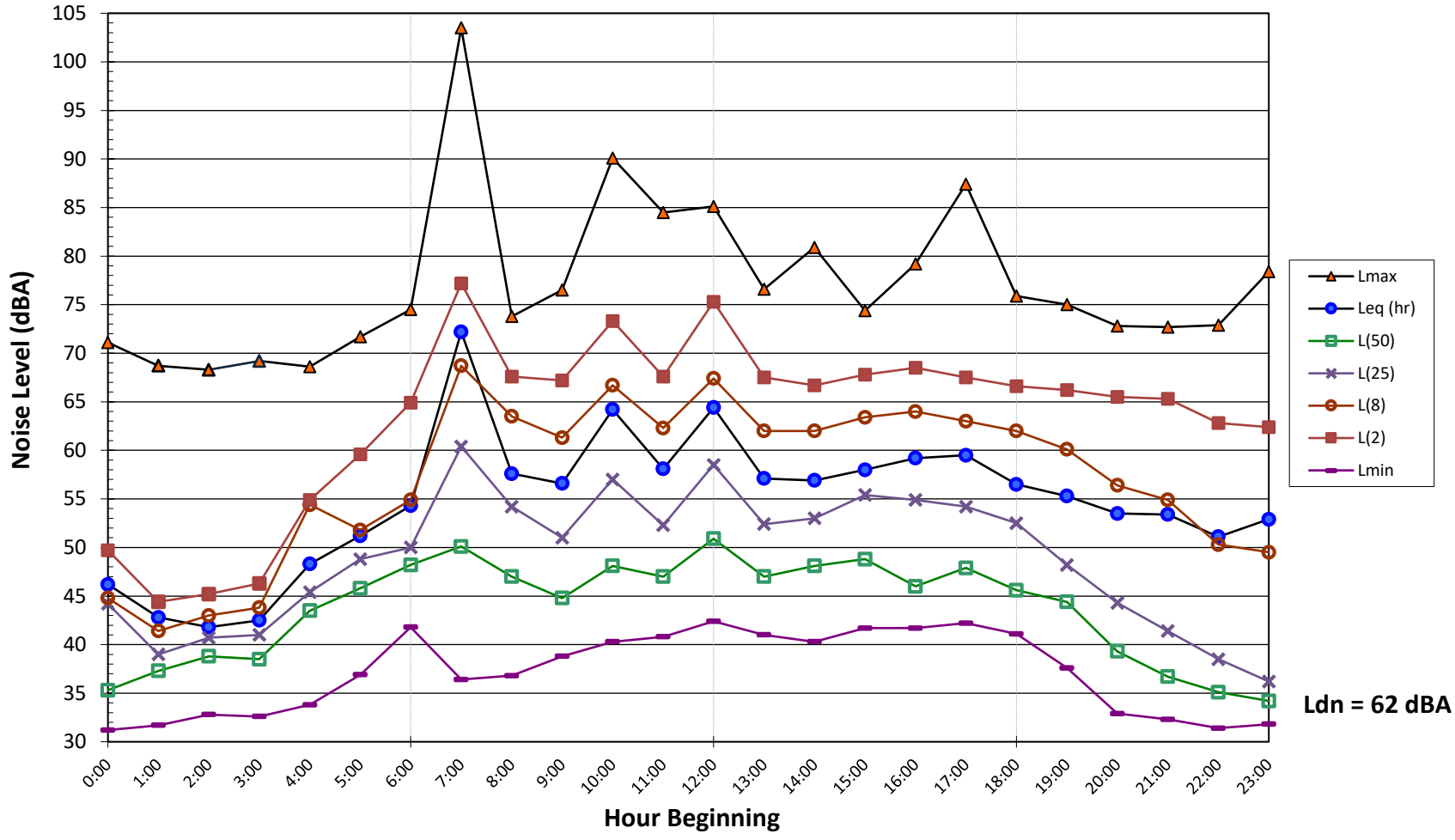

Noise Levels at LT-7
Third Street, San Rafael, CA
Thursday, May 2, 2019
Noise Level (dBA)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin


Noise Levels at LT-7
Third Street, San Rafael, CA
Friday, May 3, 2019
Noise Level (dBA)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin
Ldn = 74 dBA

Noise Levels at LT-8
Bayview Street, San Rafael, CA
Thursday, May 2, 2019

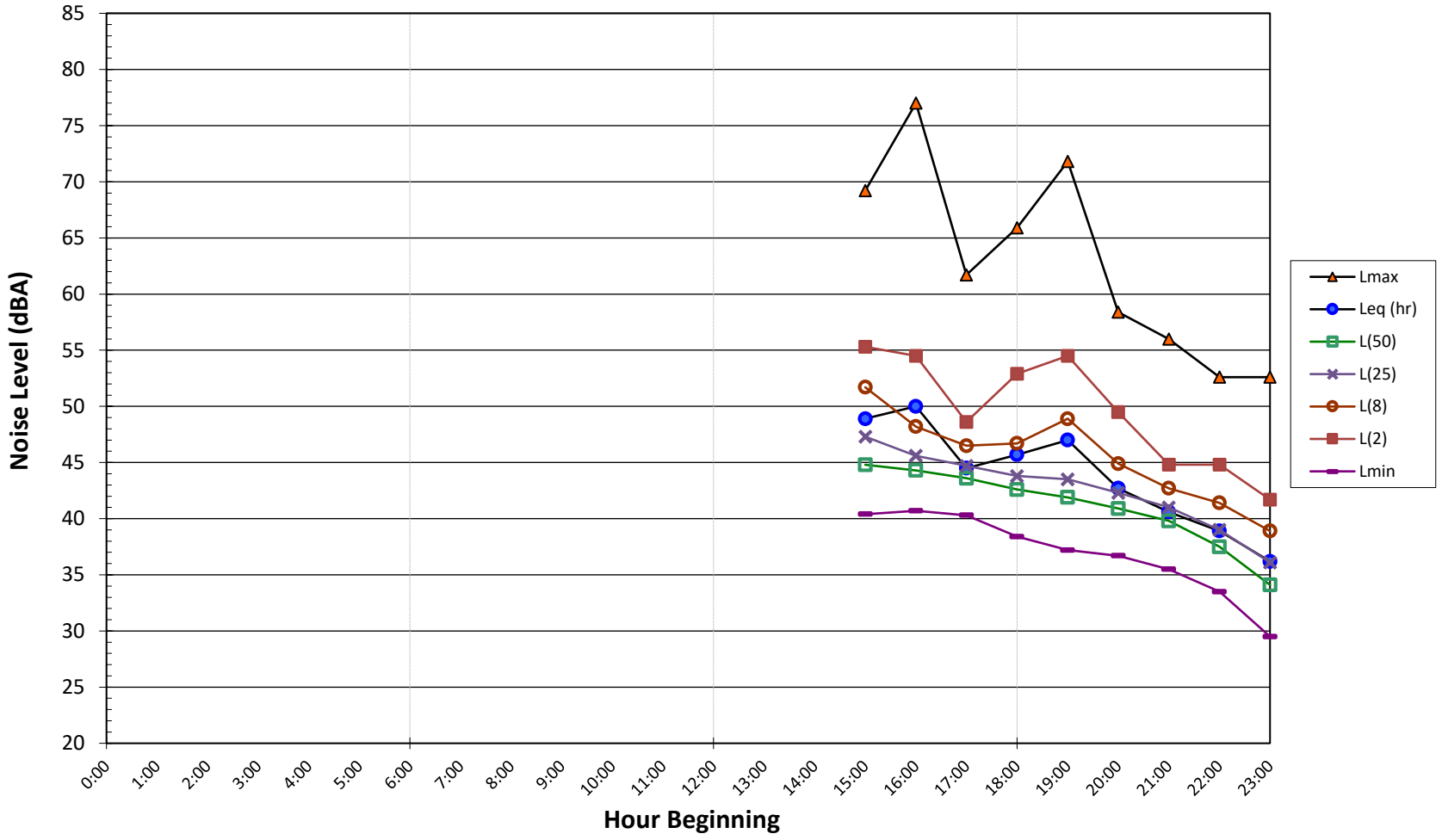


Noise Levels at LT-8
Bayview Street, San Rafael, CA
Friday, May 3, 2019

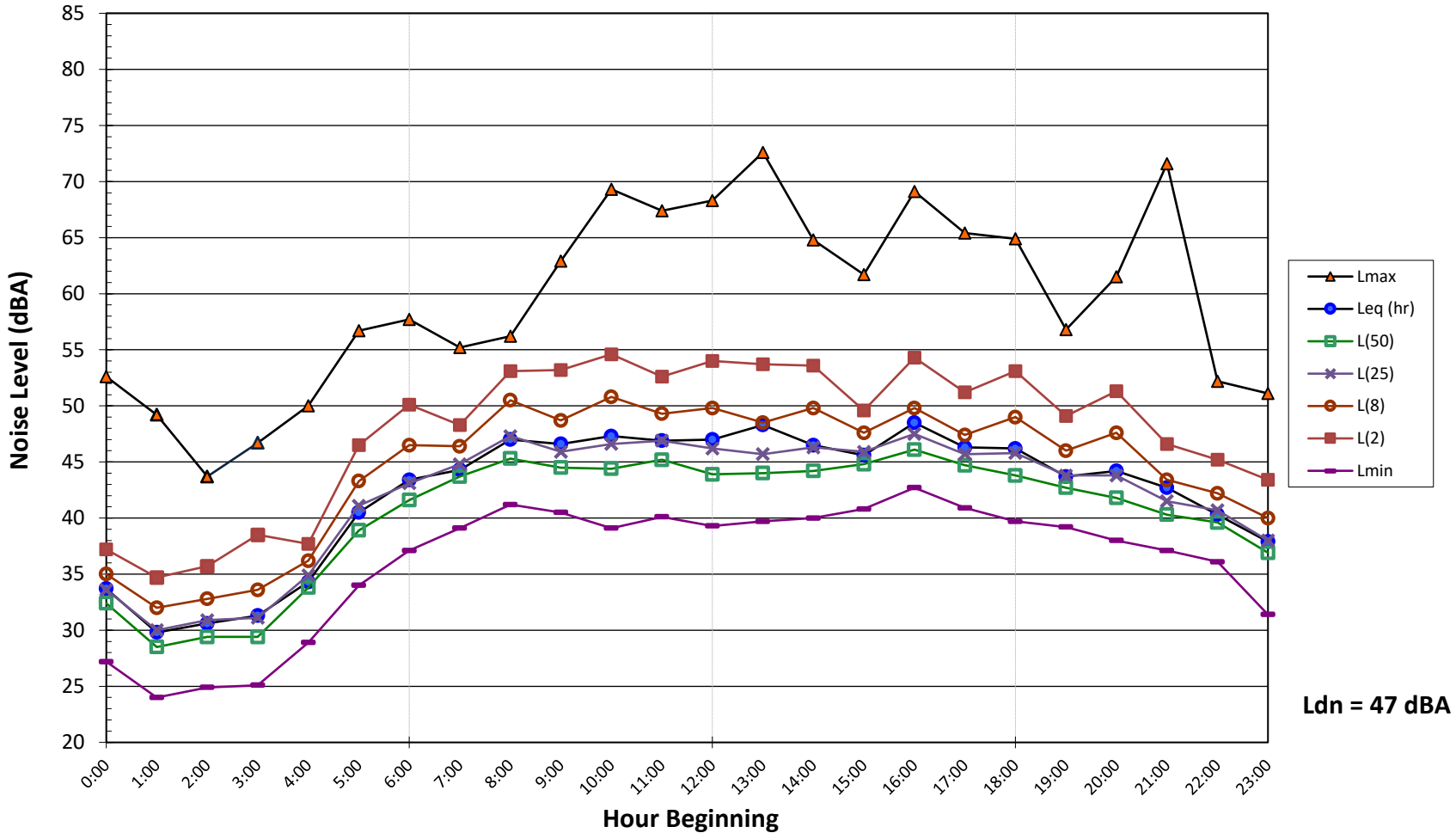


Ldn = 62 dBA

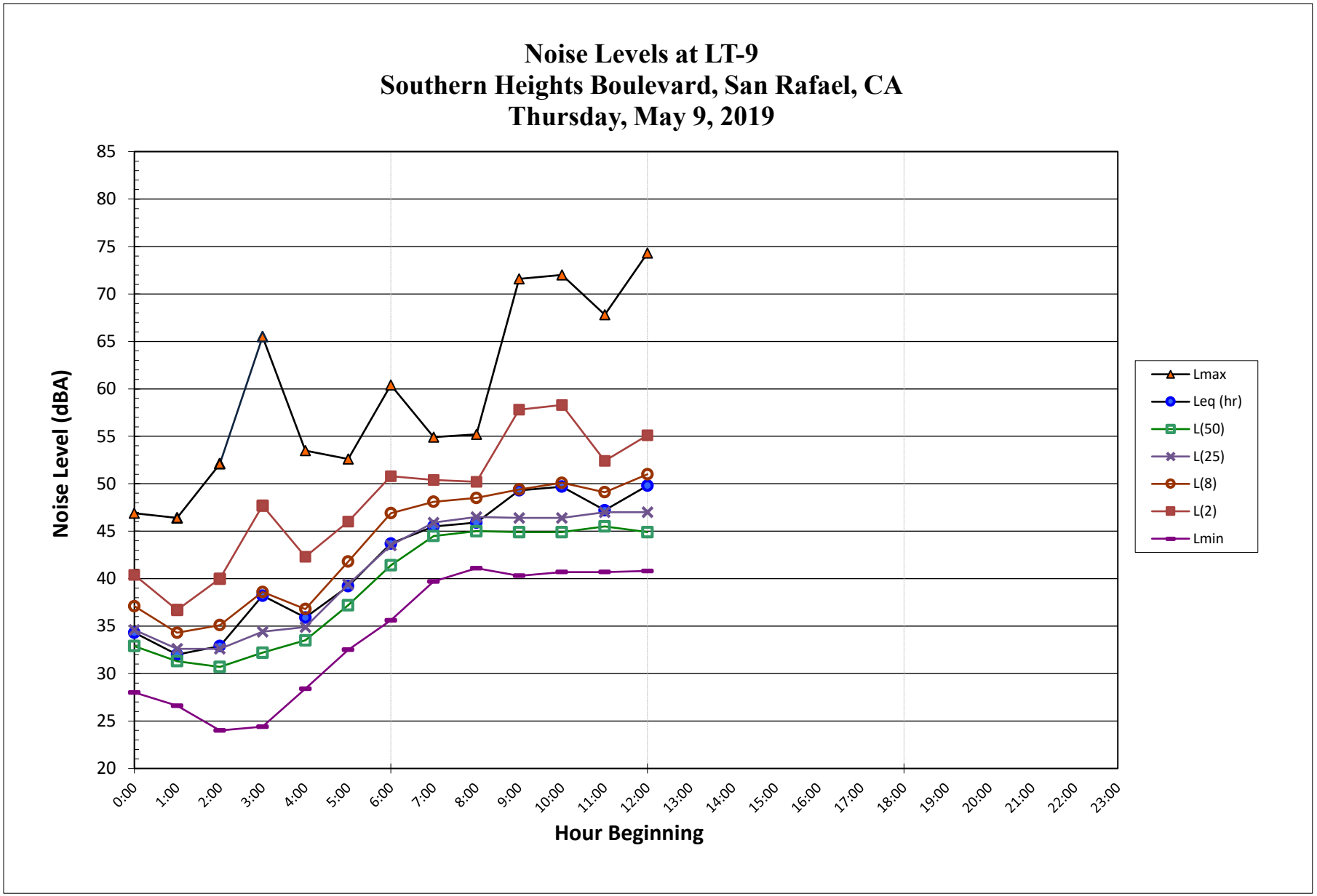
Noise Levels at LT-9
Southern Heights Boulevard, San Rafael, CA
Tuesday, May 7, 2019

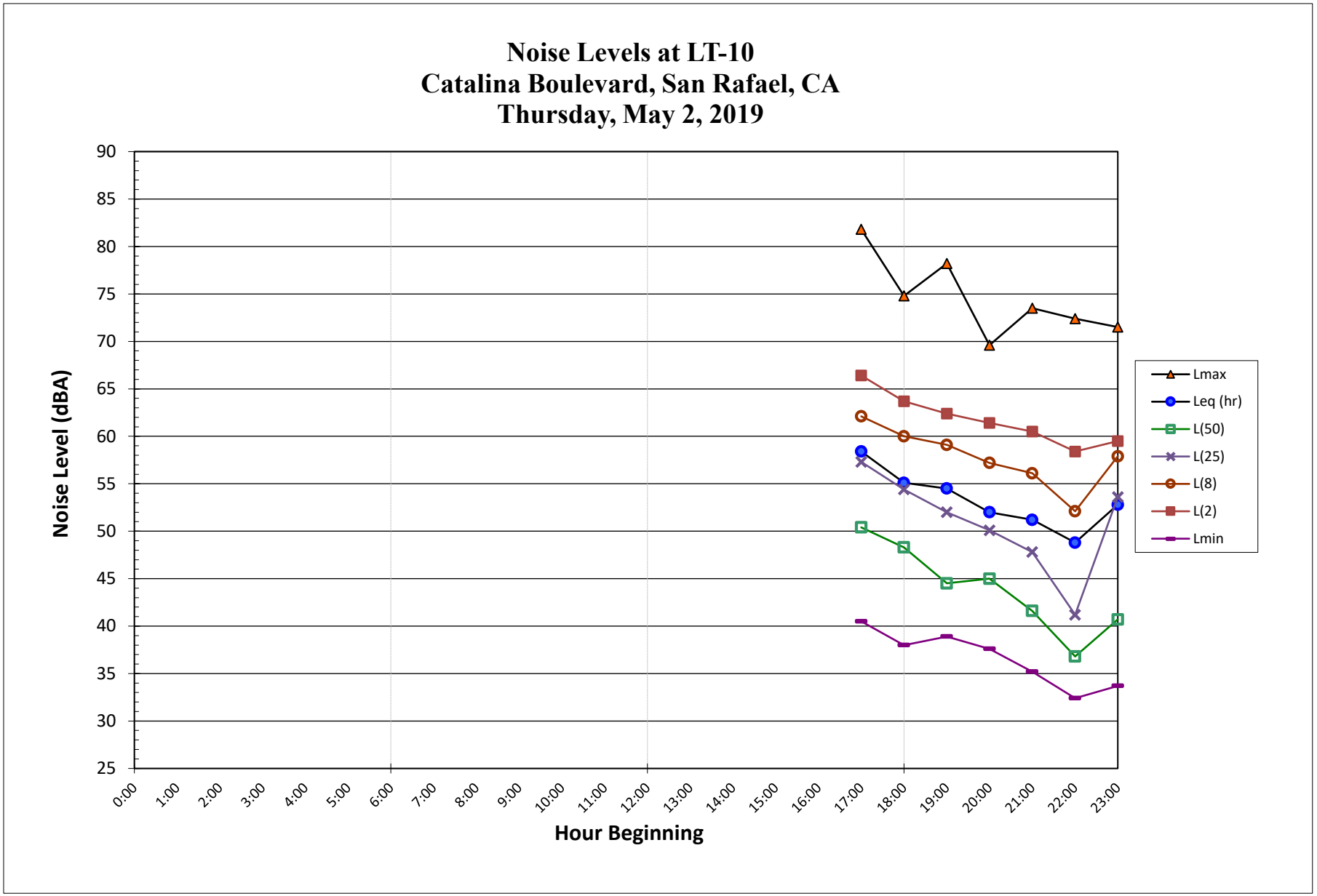


Noise Levels at LT-9
Southern Heights Boulevard, San Rafael, CA
Wednesday, May 8, 2019

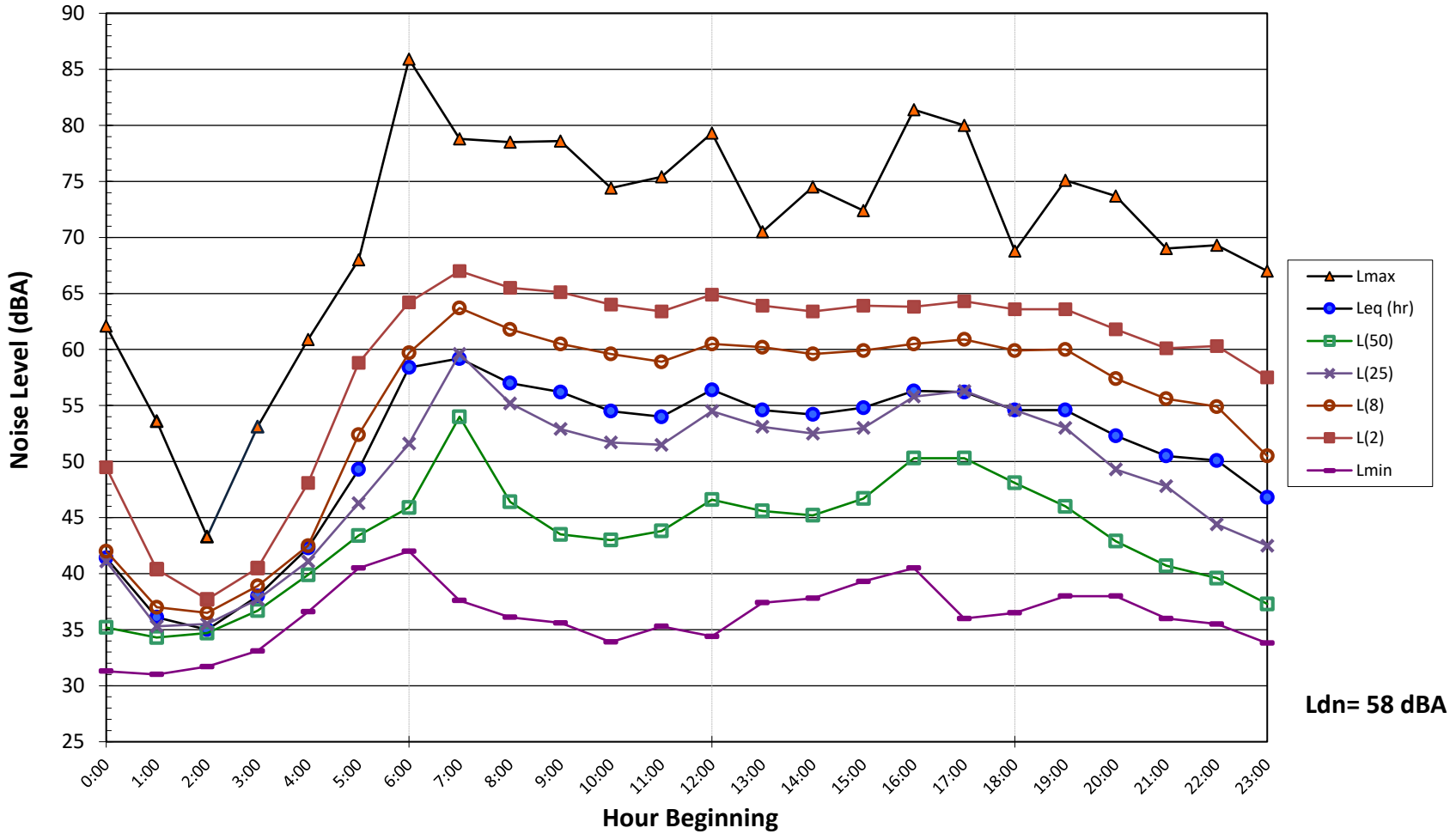


Ldn = 47 dBA


Noise Levels at LT-9
Southern Heights Boulevard, San Rafael, CA
Thursday, May 9, 2019
Noise Level (dBA)
85
80
75
70
65
60
55
50
45
40
35
30
25
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin


Noise Levels at LT-10
Catalina Boulevard, San Rafael, CA
Thursday, May 2, 2019
Noise Level (dBA)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Hour Beginning
Lmax
Leq (hr)
L(50)
L(25)
L(8)
L(2)
Lmin

Noise Levels at LT-10
Catalina Boulevard, San Rafael, CA
Friday, May 3, 2019



Ldn= 58 dBA

TRAFFIC DATA AND TRAFFIC NOISE INCREASES

DISTRICT	RTE	RTE_SFX	CNTY	PM_PFX	PM	PM_SFX	DESCRIPTION	BACK_PEAK_HOUR	BACK_PEAK_MADT	BACK_AADT	AHEAD_PEAK_HOUR	AHEAD_PEAK_MADT	AHEAD_AADT
04	101		MRN		9.960		JCT. RTE. 580	13200	164000	154400	17700	220000	206900
04	101		MRN		10.600		SAN RAFAEL, IRWIN STREET	17700	220000	206900	13400	166000	156500
04	101		MRN		11.250		SAN RAFAEL, MISSION AVENUE	13400	166000	156500	17300	214000	201600
04	101		MRN		12.190		SAN RAFAEL, LINCOLN/ VILLA AVENUE	17300	214000	201600	17900	222000	209000
04	101		MRN		12.694		SAN PEDRO ROAD	17900	222000	209000	16800	208000	196400
04	101		MRN		13.713		MANUEL FREITAS PARKWAY	16800	208000	196400	16000	199000	186900
04	101		MRN		14.707		LUCAS VALLEY ROAD	16000	199000	186900	15300	189000	178500
04	101		MRN		15.570		MILLER CREEK ROAD	15300	189000	178500	15200	188000	177500
04	580		MRN		0.000		CONTRA COSTA/MARIN COUNTY LINE				7000	87000	82000
04	580		MRN		2.477		SAN RAFAEL, W END RICHMOND-SAN RAFAEL BRIDGE	7000	87000	82000	7300	88000	82000
04	580		MRN		2.633		SAN RAFAEL, SAN QUENTIN	7300	88000	82000	7700	92000	85000
04	580		MRN		3.087		WB OFF TO SIR FRANCIS DRAKE BLVD	7700	92000	85000	5100	61000	56000
04	580		MRN		4.498		BELLAM BOULEVARD	5100	61000	56000	6400	77000	71000
04	580		MRN		4.782		JCT. RTE. 101	6400	77000	71000			

Source: California Department of Transportation, data for 2017

2017 Daily Truck Traffic

RTE	DIST	CNTY	POST MILE	LE G	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT	TRUCK AADT TOTAL By Axle 2	3	4	5+	% TRUCK AADT By Axle 2	3	4	5+	EAL 2-WAY (1000)	YEAR VER/ EST	%MD Trucks from Total Vehicle AADT (2 axles)	%HD Trucks from Total Vehicle AADT (3+ axles)
101	04	MRN	9.96	A	JCT. RTE. 580	206900	7056	3.41	4,088	727	267	1,974	57.94	10.30	3.78	27.98	930	01V	0.020	0.014
101	04	MRN	13.713	B	MANUEL FREITAS PARKWAY	196400	8643	4.40	4,632	1,141	251	2,619	53.60	13.20	2.90	30.30	1,208	01E	0.024	0.020
580	04	MRN	4.782	B	JCT. RTE. 101	71000	4898	6.90	2,190	607	274	1,827	44.70	12.40	5.60	37.30	803	96E	0.031	0.038

Source: California Department of Transportation, data for 2017

Rte	Post Mile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
101	9.96	JCT. RTE. 580	13200	164000	154400	17700	220000	206900
101	10.6	SAN RAFAEL, IRWIN STREET	17700	220000	206900	13400	166000	156500
101	11.25	SAN RAFAEL, MISSION AVENUE	13400	166000	156500	17300	214000	201600
101	12.19	SAN RAFAEL, LINCOLN/ VILLA AVENUE	17300	214000	201600	17900	222000	209000
101	12.694	SAN PEDRO ROAD	17900	222000	209000	16800	208000	196400
101	13.713	MANUEL FREITAS PARKWAY	16800	208000	196400	16000	199000	186900
101	14.707	LUCAS VALLEY ROAD	16000	199000	186900	15300	189000	178500
101	15.57	MILLER CREEK ROAD	15300	189000	178500	15200	188000	177500

Source: California Department of Transportation, 2019

Rte	CO	Post Mile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
580	MRN	0	CONTRA COSTA/MARIN COUNTY LINE				7000	87000	82000
580	MRN	2.477	SAN RAFAEL, W END RICHMOND-SAN RAFAEL BRIDGE	7000	87000	82000	7300	88000	82000
580	MRN	2.633	SAN RAFAEL, SAN QUENTIN	7300	88000	82000	7700	92000	85000
580	MRN	3.087	WB OFF TO SIR FRANCIS DRAKE BLVD	7700	92000	85000	5100	61000	56000
580	MRN	4.498	BELLAM BOULEVARD	5100	61000	56000	6400	77000	71000
580	MRN	4.782	JCT. RTE. 101	6400	77000	71000			

Source: California Department of Transportation, 2019

Vehicle Classification Report Summary

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 01

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	84	12,378	3,575	12	666	122	0	41	57	60	5	2	27	17,029
Percent	0.5%	72.7%	21.0%	0.1%	3.9%	0.7%	0.0%	0.2%	0.3%	0.4%	0.0%	0.0%	0.2%	100%
Westbound	89	11,349	2,923	10	722	131	0	27	46	67	2	3	49	15,418
Percent	0.6%	73.6%	19.0%	0.1%	4.7%	0.8%	0.0%	0.2%	0.3%	0.4%	0.0%	0.0%	0.3%	100%
Total	173	23,727	6,498	22	1,388	253	0	68	103	127	7	5	76	32,447
Percent	0.5%	73.1%	20.0%	0.1%	4.3%	0.8%	0.0%	0.2%	0.3%	0.4%	0.0%	0.0%	0.2%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	35	2	0	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	30	4	0	3	1	0	0	0	0	0	0	0	**38**
2:00 AM	0	15	1	0	1	0	0	0	0	0	0	0	0	**17**
3:00 AM	1	16	4	0	1	1	0	0	0	0	0	0	0	**23**
4:00 AM	0	58	16	0	8	1	0	0	1	0	0	0	0	**84**
5:00 AM	4	192	64	0	14	3	0	0	1	0	0	0	0	**278**
6:00 AM	9	569	162	0	37	6	0	2	4	3	0	0	2	**794**
7:00 AM	7	932	269	0	42	8	0	6	1	7	0	0	3	**1,275**
8:00 AM	8	1,014	279	0	35	15	0	4	7	6	0	0	3	**1,371**
9:00 AM	7	939	249	0	53	11	0	1	2	5	0	0	1	**1,268**
10:00 AM	2	759	314	0	51	6	0	3	2	0	1	0	2	**1,140**
11:00 AM	1	791	238	0	52	10	0	1	3	3	1	0	0	**1,100**
12:00 PM	7	807	219	1	47	7	0	3	3	4	0	0	1	**1,099**
1:00 PM	7	759	275	0	60	8	0	5	6	3	1	0	1	**1,125**
2:00 PM	4	823	233	0	49	10	0	2	8	3	0	0	2	**1,134**
3:00 PM	2	771	274	2	52	8	0	3	6	4	2	1	4	**1,129**
4:00 PM	8	775	268	2	43	5	0	5	3	4	0	0	3	**1,116**
5:00 PM	2	799	190	2	44	8	0	3	3	5	0	0	1	**1,057**
6:00 PM	8	693	190	3	23	7	0	1	3	4	0	1	0	**933**
7:00 PM	2	515	123	2	20	4	0	2	3	4	0	0	3	**678**
8:00 PM	2	417	89	0	15	2	0	0	0	4	0	0	0	**529**
9:00 PM	2	357	66	0	8	0	0	0	0	0	0	0	1	**434**
10:00 PM	1	210	32	0	6	1	0	0	1	1	0	0	0	**252**
11:00 PM	0	102	14	0	1	0	0	0	0	0	0	0	0	**117**
Total	**84**	**12,378**	**3,575**	**12**	**666**	**122**	**0**	**41**	**57**	**60**	**5**	**2**	**27**	**17,029**
Percent	**0.5%**	**72.7%**	**21.0%**	**0.1%**	**3.9%**	**0.7%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.2%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	71	9	0	0	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	31	4	0	2	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
3:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	32	10	1	4	1	0	0	2	0	0	0	0	**50**
5:00 AM	1	109	43	2	19	1	0	0	2	1	0	0	2	**180**
6:00 AM	2	240	86	4	29	12	0	2	3	1	0	0	5	**384**
7:00 AM	5	450	190	0	73	9	0	1	8	12	0	0	8	**756**
8:00 AM	6	614	237	1	68	20	0	4	6	5	0	0	8	**969**
9:00 AM	8	532	196	0	48	10	0	3	8	8	1	0	5	**819**
10:00 AM	4	609	188	0	60	11	0	2	3	5	0	1	2	**885**
11:00 AM	4	690	191	0	45	4	0	0	2	1	0	0	3	**940**
12:00 PM	1	751	185	0	52	9	0	5	1	3	1	0	1	**1,009**
1:00 PM	5	695	210	0	64	4	0	2	0	2	0	2	0	**984**
2:00 PM	7	792	185	2	53	3	0	1	3	7	0	0	1	**1,054**
3:00 PM	6	847	197	0	51	4	0	3	2	4	0	0	3	**1,117**
4:00 PM	9	862	218	0	37	12	0	2	2	4	0	0	2	**1,148**
5:00 PM	13	966	214	0	30	7	0	1	2	6	0	0	8	**1,247**
6:00 PM	5	885	167	0	27	5	0	0	0	3	0	0	0	**1,092**
7:00 PM	4	687	136	0	15	7	0	0	1	2	0	0	0	**852**
8:00 PM	2	533	106	0	11	5	0	0	1	2	0	0	1	**661**
9:00 PM	4	448	69	0	17	4	0	1	0	1	0	0	0	**544**
10:00 PM	2	297	55	0	11	2	0	0	0	0	0	0	0	**367**
11:00 PM	1	173	20	0	5	1	0	0	0	0	0	0	0	**200**
Total	**89**	**11,349**	**2,923**	**10**	**722**	**131**	**0**	**27**	**46**	**67**	**2**	**3**	**49**	**15,418**
Percent	**0.6%**	**73.6%**	**19.0%**	**0.1%**	**4.7%**	**0.8%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.3%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	35	2	0	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	30	4	0	3	1	0	0	0	0	0	0	0	**38**
2:00 AM	0	15	1	0	1	0	0	0	0	0	0	0	0	**17**
3:00 AM	1	16	4	0	1	1	0	0	0	0	0	0	0	**23**
4:00 AM	0	58	16	0	8	1	0	0	1	0	0	0	0	**84**
5:00 AM	4	192	64	0	14	3	0	0	1	0	0	0	0	**278**
6:00 AM	9	569	162	0	37	6	0	2	4	3	0	0	2	**794**
7:00 AM	7	932	269	0	42	8	0	6	1	7	0	0	3	**1,275**
8:00 AM	8	1,014	279	0	35	15	0	4	7	6	0	0	3	**1,371**
9:00 AM	7	939	249	0	53	11	0	1	2	5	0	0	1	**1,268**
10:00 AM	2	759	314	0	51	6	0	3	2	0	1	0	2	**1,140**
11:00 AM	1	791	238	0	52	10	0	1	3	3	1	0	0	**1,100**
12:00 PM	7	807	219	1	47	7	0	3	3	4	0	0	1	**1,099**
1:00 PM	7	759	275	0	60	8	0	5	6	3	1	0	1	**1,125**
2:00 PM	4	823	233	0	49	10	0	2	8	3	0	0	2	**1,134**
3:00 PM	2	771	274	2	52	8	0	3	6	4	2	1	4	**1,129**
4:00 PM	8	775	268	2	43	5	0	5	3	4	0	0	3	**1,116**
5:00 PM	2	799	190	2	44	8	0	3	3	5	0	0	1	**1,057**
6:00 PM	8	693	190	3	23	7	0	1	3	4	0	1	0	**933**
7:00 PM	2	515	123	2	20	4	0	2	3	4	0	0	3	**678**
8:00 PM	2	417	89	0	15	2	0	0	0	4	0	0	0	**529**
9:00 PM	2	357	66	0	8	0	0	0	0	0	0	0	1	**434**
10:00 PM	1	210	32	0	6	1	0	0	1	1	0	0	0	**252**
11:00 PM	0	102	14	0	1	0	0	0	0	0	0	0	0	**117**
Total	**84**	**12,378**	**3,575**	**12**	**666**	**122**	**0**	**41**	**57**	**60**	**5**	**2**	**27**	**17,029**
Percent	**0.5%**	**72.7%**	**21.0%**	**0.1%**	**3.9%**	**0.7%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.2%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	71	9	0	0	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	31	4	0	2	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
3:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	32	10	1	4	1	0	0	2	0	0	0	0	**50**
5:00 AM	1	109	43	2	19	1	0	0	2	1	0	0	2	**180**
6:00 AM	2	240	86	4	29	12	0	2	3	1	0	0	5	**384**
7:00 AM	5	450	190	0	73	9	0	1	8	12	0	0	8	**756**
8:00 AM	6	614	237	1	68	20	0	4	6	5	0	0	8	**969**
9:00 AM	8	532	196	0	48	10	0	3	8	8	1	0	5	**819**
10:00 AM	4	609	188	0	60	11	0	2	3	5	0	1	2	**885**
11:00 AM	4	690	191	0	45	4	0	0	2	1	0	0	3	**940**
12:00 PM	1	751	185	0	52	9	0	5	1	3	1	0	1	**1,009**
1:00 PM	5	695	210	0	64	4	0	2	0	2	0	2	0	**984**
2:00 PM	7	792	185	2	53	3	0	1	3	7	0	0	1	**1,054**
3:00 PM	6	847	197	0	51	4	0	3	2	4	0	0	3	**1,117**
4:00 PM	9	862	218	0	37	12	0	2	2	4	0	0	2	**1,148**
5:00 PM	13	966	214	0	30	7	0	1	2	6	0	0	8	**1,247**
6:00 PM	5	885	167	0	27	5	0	0	0	3	0	0	0	**1,092**
7:00 PM	4	687	136	0	15	7	0	0	1	2	0	0	0	**852**
8:00 PM	2	533	106	0	11	5	0	0	1	2	0	0	1	**661**
9:00 PM	4	448	69	0	17	4	0	1	0	1	0	0	0	**544**
10:00 PM	2	297	55	0	11	2	0	0	0	0	0	0	0	**367**
11:00 PM	1	173	20	0	5	1	0	0	0	0	0	0	0	**200**
Total	**89**	**11,349**	**2,923**	**10**	**722**	**131**	**0**	**27**	**46**	**67**	**2**	**3**	**49**	**15,418**
Percent	**0.6%**	**73.6%**	**19.0%**	**0.1%**	**4.7%**	**0.8%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.3%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	35	2	0	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	30	4	0	3	1	0	0	0	0	0	0	0	**38**
2:00 AM	0	15	1	0	1	0	0	0	0	0	0	0	0	**17**
3:00 AM	1	16	4	0	1	1	0	0	0	0	0	0	0	**23**
4:00 AM	0	58	16	0	8	1	0	0	1	0	0	0	0	**84**
5:00 AM	4	192	64	0	14	3	0	0	1	0	0	0	0	**278**
6:00 AM	9	569	162	0	37	6	0	2	4	3	0	0	2	**794**
7:00 AM	7	932	269	0	42	8	0	6	1	7	0	0	3	**1,275**
8:00 AM	8	1,014	279	0	35	15	0	4	7	6	0	0	3	**1,371**
9:00 AM	7	939	249	0	53	11	0	1	2	5	0	0	1	**1,268**
10:00 AM	2	759	314	0	51	6	0	3	2	0	1	0	2	**1,140**
11:00 AM	1	791	238	0	52	10	0	1	3	3	1	0	0	**1,100**
12:00 PM	7	807	219	1	47	7	0	3	3	4	0	0	1	**1,099**
1:00 PM	7	759	275	0	60	8	0	5	6	3	1	0	1	**1,125**
2:00 PM	4	823	233	0	49	10	0	2	8	3	0	0	2	**1,134**
3:00 PM	2	771	274	2	52	8	0	3	6	4	2	1	4	**1,129**
4:00 PM	8	775	268	2	43	5	0	5	3	4	0	0	3	**1,116**
5:00 PM	2	799	190	2	44	8	0	3	3	5	0	0	1	**1,057**
6:00 PM	8	693	190	3	23	7	0	1	3	4	0	1	0	**933**
7:00 PM	2	515	123	2	20	4	0	2	3	4	0	0	3	**678**
8:00 PM	2	417	89	0	15	2	0	0	0	4	0	0	0	**529**
9:00 PM	2	357	66	0	8	0	0	0	0	0	0	0	1	**434**
10:00 PM	1	210	32	0	6	1	0	0	1	1	0	0	0	**252**
11:00 PM	0	102	14	0	1	0	0	0	0	0	0	0	0	**117**
Total	**84**	**12,378**	**3,575**	**12**	**666**	**122**	**0**	**41**	**57**	**60**	**5**	**2**	**27**	**17,029**
Percent	**0.5%**	**72.7%**	**21.0%**	**0.1%**	**3.9%**	**0.7%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.2%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	71	9	0	0	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	31	4	0	2	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
3:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	32	10	1	4	1	0	0	2	0	0	0	0	**50**
5:00 AM	1	109	43	2	19	1	0	0	2	1	0	0	2	**180**
6:00 AM	2	240	86	4	29	12	0	2	3	1	0	0	5	**384**
7:00 AM	5	450	190	0	73	9	0	1	8	12	0	0	8	**756**
8:00 AM	6	614	237	1	68	20	0	4	6	5	0	0	8	**969**
9:00 AM	8	532	196	0	48	10	0	3	8	8	1	0	5	**819**
10:00 AM	4	609	188	0	60	11	0	2	3	5	0	1	2	**885**
11:00 AM	4	690	191	0	45	4	0	0	2	1	0	0	3	**940**
12:00 PM	1	751	185	0	52	9	0	5	1	3	1	0	1	**1,009**
1:00 PM	5	695	210	0	64	4	0	2	0	2	0	2	0	**984**
2:00 PM	7	792	185	2	53	3	0	1	3	7	0	0	1	**1,054**
3:00 PM	6	847	197	0	51	4	0	3	2	4	0	0	3	**1,117**
4:00 PM	9	862	218	0	37	12	0	2	2	4	0	0	2	**1,148**
5:00 PM	13	966	214	0	30	7	0	1	2	6	0	0	8	**1,247**
6:00 PM	5	885	167	0	27	5	0	0	0	3	0	0	0	**1,092**
7:00 PM	4	687	136	0	15	7	0	0	1	2	0	0	0	**852**
8:00 PM	2	533	106	0	11	5	0	0	1	2	0	0	1	**661**
9:00 PM	4	448	69	0	17	4	0	1	0	1	0	0	0	**544**
10:00 PM	2	297	55	0	11	2	0	0	0	0	0	0	0	**367**
11:00 PM	1	173	20	0	5	1	0	0	0	0	0	0	0	**200**
Total	**89**	**11,349**	**2,923**	**10**	**722**	**131**	**0**	**27**	**46**	**67**	**2**	**3**	**49**	**15,418**
Percent	**0.6%**	**73.6%**	**19.0%**	**0.1%**	**4.7%**	**0.8%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.3%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 01

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	38	80	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	80	118
1:00 AM	38	37	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	37	75
2:00 AM	17	20	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	20	37
3:00 AM	23	23	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	23	46
4:00 AM	84	50	134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	50	134
5:00 AM	278	180	458	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	278	180	458
6:00 AM	794	384	1,178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	794	384	1,178
7:00 AM	1,275	756	2,031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,275	756	2,031
8:00 AM	**1,371**	**969**	**2,340**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,371**	**969**	**2,340**
9:00 AM	1,268	819	2,087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,268	819	2,087
10:00 AM	1,140	885	2,025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,140	885	2,025
11:00 AM	1,100	940	2,040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100	940	2,040
12:00 PM	1,099	1,009	2,108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,099	1,009	2,108
1:00 PM	1,125	984	2,109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,125	984	2,109
2:00 PM	**1,134**	1,054	2,188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,134**	1,054	2,188
3:00 PM	1,129	1,117	2,246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,129	1,117	2,246
4:00 PM	1,116	1,148	2,264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,116	1,148	2,264
5:00 PM	1,057	**1,247**	**2,304**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,057	**1,247**	**2,304**
6:00 PM	933	1,092	2,025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933	1,092	2,025
7:00 PM	678	852	1,530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	678	852	1,530
8:00 PM	529	661	1,190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	529	661	1,190
9:00 PM	434	544	978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	434	544	978
10:00 PM	252	367	619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	252	367	619
11:00 PM	117	200	317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	200	317
Total	17,029	15,418	32,447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,029	15,418	32,447
Percent	52%	48%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	1,371	969	2,340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,371	969	2,340
PM Peak	14:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:00	17:00	17:00
Vol.	1,134	1,247	2,304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,134	1,247	2,304

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 2nd St, B/W Hayes St & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 02

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	125	18,231	2,873	7	369	259	0	17	193	427	9	3	349	22,862
Percent	0.5%	79.7%	12.6%	0.0%	1.6%	1.1%	0.0%	0.1%	0.8%	1.9%	0.0%	0.0%	1.5%	100%
Westbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	125	18,231	2,873	7	369	259	0	17	193	427	9	3	349	22,862
Percent	0.5%	79.7%	12.6%	0.0%	1.6%	1.1%	0.0%	0.1%	0.8%	1.9%	0.0%	0.0%	1.5%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	59	3	0	2	0	0	0	0	0	0	0	0	**64**
1:00 AM	1	42	4	0	2	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	29	1	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	26	7	0	1	0	0	0	0	0	0	0	0	**34**
4:00 AM	1	93	17	0	8	0	0	0	1	0	0	0	0	**120**
5:00 AM	5	289	54	0	9	1	0	0	1	0	0	0	1	**360**
6:00 AM	1	757	150	0	15	12	0	2	5	20	0	0	14	**976**
7:00 AM	6	1,222	142	0	15	24	0	1	14	44	0	0	55	**1,523**
8:00 AM	3	1,232	105	0	24	26	0	0	14	43	0	0	45	**1,492**
9:00 AM	11	1,140	181	0	24	20	0	0	19	25	1	0	46	**1,467**
10:00 AM	7	1,045	219	0	29	13	0	1	14	29	0	1	26	**1,384**
11:00 AM	4	1,046	230	1	29	20	0	1	15	39	2	0	21	**1,408**
12:00 PM	10	1,118	236	1	29	13	0	2	19	33	0	0	20	**1,481**
1:00 PM	11	1,147	236	1	28	11	0	3	16	34	1	0	20	**1,508**
2:00 PM	9	1,261	209	0	33	19	0	2	14	31	1	0	14	**1,593**
3:00 PM	14	1,280	182	0	24	31	0	1	6	27	1	0	24	**1,590**
4:00 PM	13	1,293	172	0	30	14	0	1	14	32	1	1	15	**1,586**
5:00 PM	4	1,212	154	1	15	20	0	1	10	22	1	0	20	**1,460**
6:00 PM	9	1,097	204	3	17	8	0	1	15	17	0	1	12	**1,384**
7:00 PM	8	909	163	0	18	6	0	1	4	11	1	0	3	**1,124**
8:00 PM	4	732	92	0	7	6	0	0	5	13	0	0	9	**868**
9:00 PM	0	638	60	0	5	3	0	0	4	7	0	0	4	**721**
10:00 PM	3	396	42	0	2	9	0	0	1	0	0	0	0	**453**
11:00 PM	1	168	10	0	3	3	0	0	2	0	0	0	0	**187**
Total	**125**	**18,231**	**2,873**	**7**	**369**	**259**	**0**	**17**	**193**	**427**	**9**	**3**	**349**	**22,862**
Percent	**0.5%**	**79.7%**	**12.6%**	**0.0%**	**1.6%**	**1.1%**	**0.0%**	**0.1%**	**0.8%**	**1.9%**	**0.0%**	**0.0%**	**1.5%**	

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	59	3	0	2	0	0	0	0	0	0	0	0	**64**
1:00 AM	1	42	4	0	2	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	29	1	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	26	7	0	1	0	0	0	0	0	0	0	0	**34**
4:00 AM	1	93	17	0	8	0	0	0	1	0	0	0	0	**120**
5:00 AM	5	289	54	0	9	1	0	0	1	0	0	0	1	**360**
6:00 AM	1	757	150	0	15	12	0	2	5	20	0	0	14	**976**
7:00 AM	6	1,222	142	0	15	24	0	1	14	44	0	0	55	**1,523**
8:00 AM	3	1,232	105	0	24	26	0	0	14	43	0	0	45	**1,492**
9:00 AM	11	1,140	181	0	24	20	0	0	19	25	1	0	46	**1,467**
10:00 AM	7	1,045	219	0	29	13	0	1	14	29	0	1	26	**1,384**
11:00 AM	4	1,046	230	1	29	20	0	1	15	39	2	0	21	**1,408**
12:00 PM	10	1,118	236	1	29	13	0	2	19	33	0	0	20	**1,481**
1:00 PM	11	1,147	236	1	28	11	0	3	16	34	1	0	20	**1,508**
2:00 PM	9	1,261	209	0	33	19	0	2	14	31	1	0	14	**1,593**
3:00 PM	14	1,280	182	0	24	31	0	1	6	27	1	0	24	**1,590**
4:00 PM	13	1,293	172	0	30	14	0	1	14	32	1	1	15	**1,586**
5:00 PM	4	1,212	154	1	15	20	0	1	10	22	1	0	20	**1,460**
6:00 PM	9	1,097	204	3	17	8	0	1	15	17	0	1	12	**1,384**
7:00 PM	8	909	163	0	18	6	0	1	4	11	1	0	3	**1,124**
8:00 PM	4	732	92	0	7	6	0	0	5	13	0	0	9	**868**
9:00 PM	0	638	60	0	5	3	0	0	4	7	0	0	4	**721**
10:00 PM	3	396	42	0	2	9	0	0	1	0	0	0	0	**453**
11:00 PM	1	168	10	0	3	3	0	0	2	0	0	0	0	**187**
Total	**125**	**18,231**	**2,873**	**7**	**369**	**259**	**0**	**17**	**193**	**427**	**9**	**3**	**349**	**22,862**
Percent	**0.5%**	**79.7%**	**12.6%**	**0.0%**	**1.6%**	**1.1%**	**0.0%**	**0.1%**	**0.8%**	**1.9%**	**0.0%**	**0.0%**	**1.5%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	59	3	0	2	0	0	0	0	0	0	0	0	**64**
1:00 AM	1	42	4	0	2	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	29	1	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	26	7	0	1	0	0	0	0	0	0	0	0	**34**
4:00 AM	1	93	17	0	8	0	0	0	1	0	0	0	0	**120**
5:00 AM	5	289	54	0	9	1	0	0	1	0	0	0	1	**360**
6:00 AM	1	757	150	0	15	12	0	2	5	20	0	0	14	**976**
7:00 AM	6	1,222	142	0	15	24	0	1	14	44	0	0	55	**1,523**
8:00 AM	3	1,232	105	0	24	26	0	0	14	43	0	0	45	**1,492**
9:00 AM	11	1,140	181	0	24	20	0	0	19	25	1	0	46	**1,467**
10:00 AM	7	1,045	219	0	29	13	0	1	14	29	0	1	26	**1,384**
11:00 AM	4	1,046	230	1	29	20	0	1	15	39	2	0	21	**1,408**
12:00 PM	10	1,118	236	1	29	13	0	2	19	33	0	0	20	**1,481**
1:00 PM	11	1,147	236	1	28	11	0	3	16	34	1	0	20	**1,508**
2:00 PM	9	1,261	209	0	33	19	0	2	14	31	1	0	14	**1,593**
3:00 PM	14	1,280	182	0	24	31	0	1	6	27	1	0	24	**1,590**
4:00 PM	13	1,293	172	0	30	14	0	1	14	32	1	1	15	**1,586**
5:00 PM	4	1,212	154	1	15	20	0	1	10	22	1	0	20	**1,460**
6:00 PM	9	1,097	204	3	17	8	0	1	15	17	0	1	12	**1,384**
7:00 PM	8	909	163	0	18	6	0	1	4	11	1	0	3	**1,124**
8:00 PM	4	732	92	0	7	6	0	0	5	13	0	0	9	**868**
9:00 PM	0	638	60	0	5	3	0	0	4	7	0	0	4	**721**
10:00 PM	3	396	42	0	2	9	0	0	1	0	0	0	0	**453**
11:00 PM	1	168	10	0	3	3	0	0	2	0	0	0	0	**187**
Total	**125**	**18,231**	**2,873**	**7**	**369**	**259**	**0**	**17**	**193**	**427**	**9**	**3**	**349**	**22,862**
Percent	**0.5%**	**79.7%**	**12.6%**	**0.0%**	**1.6%**	**1.1%**	**0.0%**	**0.1%**	**0.8%**	**1.9%**	**0.0%**	**0.0%**	**1.5%**	

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 02

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	64	0	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	0	64
1:00 AM	49	0	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	0	49
2:00 AM	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	0	30
3:00 AM	34	0	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	0	34
4:00 AM	120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	0	120
5:00 AM	360	0	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	360	0	360
6:00 AM	976	0	976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	976	0	976
7:00 AM	**1,523**	0	**1,523**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,523**	0	**1,523**
8:00 AM	1,492	0	1,492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,492	0	1,492
9:00 AM	1,467	0	1,467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,467	0	1,467
10:00 AM	1,384	0	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,384	0	1,384
11:00 AM	1,408	0	1,408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,408	0	1,408
12:00 PM	1,481	0	1,481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,481	0	1,481
1:00 PM	1,508	0	1,508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,508	0	1,508
2:00 PM	**1,593**	0	**1,593**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,593**	0	**1,593**
3:00 PM	1,590	0	1,590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,590	0	1,590
4:00 PM	1,586	0	1,586	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,586	0	1,586
5:00 PM	1,460	0	1,460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,460	0	1,460
6:00 PM	1,384	0	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,384	0	1,384
7:00 PM	1,124	0	1,124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,124	0	1,124
8:00 PM	868	0	868	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	868	0	868
9:00 PM	721	0	721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	721	0	721
10:00 PM	453	0	453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	453	0	453
11:00 PM	187	0	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	187	0	187
Total	22,862	-	22,862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,862	-	22,862
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	07:00	-	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	-	07:00
Vol.	1,523	-	1,523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,523	-	1,523
PM Peak	14:00	-	14:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:00	-	14:00
Vol.	1,593	-	1,593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,593	-	1,593

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 3rd St, B/W Shaver St & Union St

Count Direction: Westbound / Eastbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 03

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Westbound	114	15,493	3,510	6	817	116	0	27	117	158	6	3	89	20,456
Percent	0.6%	75.7%	17.2%	0.0%	4.0%	0.6%	0.0%	0.1%	0.6%	0.8%	0.0%	0.0%	0.4%	100%
Eastbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	114	15,493	3,510	6	817	116	0	27	117	158	6	3	89	20,456
Percent	0.6%	75.7%	17.2%	0.0%	4.0%	0.6%	0.0%	0.1%	0.6%	0.8%	0.0%	0.0%	0.4%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

DATA SOLUTIONS

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	103	19	0	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	0	45	5	0	2	1	0	0	0	0	0	0	0	**53**
2:00 AM	1	25	4	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	34	9	0	2	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	43	13	2	5	4	0	0	2	0	0	0	0	**69**
5:00 AM	3	144	55	0	19	2	0	2	2	0	0	0	0	**227**
6:00 AM	7	376	115	0	44	4	0	2	3	4	0	0	1	**556**
7:00 AM	5	658	232	2	78	7	0	1	6	7	1	1	7	**1,005**
8:00 AM	1	827	248	0	55	8	0	2	8	17	1	0	18	**1,185**
9:00 AM	7	889	235	0	65	5	0	3	6	10	0	1	7	**1,228**
10:00 AM	3	967	232	0	74	9	0	1	2	9	0	0	6	**1,303**
11:00 AM	7	1,004	209	1	68	9	0	4	8	10	2	1	2	**1,325**
12:00 PM	5	1,042	234	0	68	10	0	1	5	8	0	0	2	**1,375**
1:00 PM	6	1,014	273	0	54	7	0	2	3	14	0	0	2	**1,375**
2:00 PM	8	1,146	207	0	51	11	0	3	10	8	1	0	4	**1,449**
3:00 PM	8	1,046	251	1	48	6	0	1	9	8	0	0	6	**1,384**
4:00 PM	8	1,030	226	0	42	6	0	1	11	12	0	0	10	**1,346**
5:00 PM	13	1,214	204	0	37	9	0	0	15	13	0	0	10	**1,515**
6:00 PM	4	1,156	207	0	22	7	0	1	11	14	1	0	9	**1,432**
7:00 PM	14	902	182	0	25	4	0	1	3	10	0	0	1	**1,142**
8:00 PM	5	645	135	0	16	5	0	1	5	7	0	0	3	**822**
9:00 PM	2	556	100	0	21	1	0	1	2	3	0	0	0	**686**
10:00 PM	4	386	76	0	14	0	0	0	4	2	0	0	1	**487**
11:00 PM	1	241	39	0	7	1	0	0	2	2	0	0	0	**293**
Total	**114**	**15,493**	**3,510**	**6**	**817**	**116**	**0**	**27**	**117**	**158**	**6**	**3**	**89**	**20,456**
Percent	**0.6%**	**75.7%**	**17.2%**	**0.0%**	**4.0%**	**0.6%**	**0.0%**	**0.1%**	**0.6%**	**0.8%**	**0.0%**	**0.0%**	**0.4%**	

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	103	19	0	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	0	45	5	0	2	1	0	0	0	0	0	0	0	**53**
2:00 AM	1	25	4	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	34	9	0	2	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	43	13	2	5	4	0	0	2	0	0	0	0	**69**
5:00 AM	3	144	55	0	19	2	0	2	2	0	0	0	0	**227**
6:00 AM	7	376	115	0	44	4	0	2	3	4	0	0	1	**556**
7:00 AM	5	658	232	2	78	7	0	1	6	7	1	1	7	**1,005**
8:00 AM	1	827	248	0	55	8	0	2	8	17	1	0	18	**1,185**
9:00 AM	7	889	235	0	65	5	0	3	6	10	0	1	7	**1,228**
10:00 AM	3	967	232	0	74	9	0	1	2	9	0	0	6	**1,303**
11:00 AM	7	1,004	209	1	68	9	0	4	8	10	2	1	2	**1,325**
12:00 PM	5	1,042	234	0	68	10	0	1	5	8	0	0	2	**1,375**
1:00 PM	6	1,014	273	0	54	7	0	2	3	14	0	0	2	**1,375**
2:00 PM	8	1,146	207	0	51	11	0	3	10	8	1	0	4	**1,449**
3:00 PM	8	1,046	251	1	48	6	0	1	9	8	0	0	6	**1,384**
4:00 PM	8	1,030	226	0	42	6	0	1	11	12	0	0	10	**1,346**
5:00 PM	13	1,214	204	0	37	9	0	0	15	13	0	0	10	**1,515**
6:00 PM	4	1,156	207	0	22	7	0	1	11	14	1	0	9	**1,432**
7:00 PM	14	902	182	0	25	4	0	1	3	10	0	0	1	**1,142**
8:00 PM	5	645	135	0	16	5	0	1	5	7	0	0	3	**822**
9:00 PM	2	556	100	0	21	1	0	1	2	3	0	0	0	**686**
10:00 PM	4	386	76	0	14	0	0	0	4	2	0	0	1	**487**
11:00 PM	1	241	39	0	7	1	0	0	2	2	0	0	0	**293**
Total	**114**	**15,493**	**3,510**	**6**	**817**	**116**	**0**	**27**	**117**	**158**	**6**	**3**	**89**	**20,456**
Percent	**0.6%**	**75.7%**	**17.2%**	**0.0%**	**4.0%**	**0.6%**	**0.0%**	**0.1%**	**0.6%**	**0.8%**	**0.0%**	**0.0%**	**0.4%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	103	19	0	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	0	45	5	0	2	1	0	0	0	0	0	0	0	**53**
2:00 AM	1	25	4	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	34	9	0	2	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	43	13	2	5	4	0	0	2	0	0	0	0	**69**
5:00 AM	3	144	55	0	19	2	0	2	2	0	0	0	0	**227**
6:00 AM	7	376	115	0	44	4	0	2	3	4	0	0	1	**556**
7:00 AM	5	658	232	2	78	7	0	1	6	7	1	1	7	**1,005**
8:00 AM	1	827	248	0	55	8	0	2	8	17	1	0	18	**1,185**
9:00 AM	7	889	235	0	65	5	0	3	6	10	0	1	7	**1,228**
10:00 AM	3	967	232	0	74	9	0	1	2	9	0	0	6	**1,303**
11:00 AM	7	1,004	209	1	68	9	0	4	8	10	2	1	2	**1,325**
12:00 PM	5	1,042	234	0	68	10	0	1	5	8	0	0	2	**1,375**
1:00 PM	6	1,014	273	0	54	7	0	2	3	14	0	0	2	**1,375**
2:00 PM	8	1,146	207	0	51	11	0	3	10	8	1	0	4	**1,449**
3:00 PM	8	1,046	251	1	48	6	0	1	9	8	0	0	6	**1,384**
4:00 PM	8	1,030	226	0	42	6	0	1	11	12	0	0	10	**1,346**
5:00 PM	13	1,214	204	0	37	9	0	0	15	13	0	0	10	**1,515**
6:00 PM	4	1,156	207	0	22	7	0	1	11	14	1	0	9	**1,432**
7:00 PM	14	902	182	0	25	4	0	1	3	10	0	0	1	**1,142**
8:00 PM	5	645	135	0	16	5	0	1	5	7	0	0	3	**822**
9:00 PM	2	556	100	0	21	1	0	1	2	3	0	0	0	**686**
10:00 PM	4	386	76	0	14	0	0	0	4	2	0	0	1	**487**
11:00 PM	1	241	39	0	7	1	0	0	2	2	0	0	0	**293**
Total	**114**	**15,493**	**3,510**	**6**	**817**	**116**	**0**	**27**	**117**	**158**	**6**	**3**	**89**	**20,456**
Percent	**0.6%**	**75.7%**	**17.2%**	**0.0%**	**4.0%**	**0.6%**	**0.0%**	**0.1%**	**0.6%**	**0.8%**	**0.0%**	**0.0%**	**0.4%**	

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 03

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total
12:00 AM	124	0	124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	124	0	124
1:00 AM	53	0	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	0	53
2:00 AM	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	0	30
3:00 AM	45	0	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	0	45
4:00 AM	69	0	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	0	69
5:00 AM	227	0	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	0	227
6:00 AM	556	0	556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	556	0	556
7:00 AM	1,005	0	1,005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,005	0	1,005
8:00 AM	1,185	0	1,185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,185	0	1,185
9:00 AM	1,228	0	1,228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,228	0	1,228
10:00 AM	1,303	0	1,303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,303	0	1,303
11:00 AM	**1,325**	0	**1,325**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,325**	0	**1,325**
12:00 PM	1,375	0	1,375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,375	0	1,375
1:00 PM	1,375	0	1,375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,375	0	1,375
2:00 PM	1,449	0	1,449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,449	0	1,449
3:00 PM	1,384	0	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,384	0	1,384
4:00 PM	1,346	0	1,346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,346	0	1,346
5:00 PM	**1,515**	0	**1,515**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,515**	0	**1,515**
6:00 PM	1,432	0	1,432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,432	0	1,432
7:00 PM	1,142	0	1,142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,142	0	1,142
8:00 PM	822	0	822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	822	0	822
9:00 PM	686	0	686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	686	0	686
10:00 PM	487	0	487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	487	0	487
11:00 PM	293	0	293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	293	0	293
Total	20,456	-	20,456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,456	-	20,456
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	11:00	-	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	-	11:00
Vol.	1,325	-	1,325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,325	-	1,325
PM Peak	17:00	-	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	-	17:00
Vol.	1,515	-	1,515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,515	-	1,515

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 3rd St, B/W Union & Mooring

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 04

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	43	7,290	2,038	41	471	50	0	10	28	9	10	0	7	9,997
Percent	0.4%	72.9%	20.4%	0.4%	4.7%	0.5%	0.0%	0.1%	0.3%	0.1%	0.1%	0.0%	0.1%	100%
Westbound	60	8,267	1,398	5	294	70	0	1	20	9	10	1	4	10,139
Percent	0.6%	81.5%	13.8%	0.0%	2.9%	0.7%	0.0%	0.0%	0.2%	0.1%	0.1%	0.0%	0.0%	100%
Total	103	15,557	3,436	46	765	120	0	11	48	18	20	1	11	20,136
Percent	0.5%	77.3%	17.1%	0.2%	3.8%	0.6%	0.0%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	23	7	0	3	0	0	0	0	0	0	0	0	**33**
1:00 AM	1	8	3	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	6	0	0	2	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	13	4	0	3	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	52	18	0	10	1	0	1	1	0	0	0	0	**83**
6:00 AM	3	135	52	4	34	3	0	0	2	0	1	0	0	**234**
7:00 AM	0	336	138	4	49	6	0	0	3	2	0	0	0	**538**
8:00 AM	0	428	172	2	38	7	0	1	4	2	1	0	1	**656**
9:00 AM	0	310	132	8	44	3	0	1	4	0	2	0	2	**506**
10:00 AM	2	338	134	10	37	9	0	1	2	1	2	0	0	**536**
11:00 AM	6	444	129	3	33	8	0	1	4	0	0	0	1	**629**
12:00 PM	4	478	145	3	35	3	0	1	3	1	2	0	0	**675**
1:00 PM	3	505	149	3	34	2	0	1	2	1	1	0	1	**702**
2:00 PM	2	547	135	2	30	0	0	0	0	0	0	0	1	**717**
3:00 PM	1	601	166	1	23	1	0	2	1	1	1	0	0	**798**
4:00 PM	5	588	145	0	29	1	0	1	0	0	0	0	0	**769**
5:00 PM	7	621	147	0	21	1	0	0	0	0	0	0	0	**797**
6:00 PM	3	557	113	0	11	1	0	0	0	0	0	0	1	**686**
7:00 PM	2	422	88	0	9	2	0	0	2	0	0	0	0	**525**
8:00 PM	1	349	69	0	12	2	0	0	0	1	0	0	0	**434**
9:00 PM	1	277	51	0	6	0	0	0	0	0	0	0	0	**335**
10:00 PM	0	162	29	0	3	0	0	0	0	0	0	0	0	**194**
11:00 PM	1	80	8	0	5	0	0	0	0	0	0	0	0	**94**
Total	**43**	**7,290**	**2,038**	**41**	**471**	**50**	**0**	**10**	**28**	**9**	**10**	**0**	**7**	**9,997**
Percent	**0.4%**	**72.9%**	**20.4%**	**0.4%**	**4.7%**	**0.5%**	**0.0%**	**0.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	**15**
1:00 AM	1	6	1	0	0	1	0	0	0	0	0	0	0	**9**
2:00 AM	2	6	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	34	4	0	4	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	101	15	0	2	0	0	0	0	0	0	0	0	**118**
6:00 AM	4	271	33	0	12	0	0	0	0	0	0	0	0	**320**
7:00 AM	4	695	97	0	25	6	0	0	1	3	1	0	0	**832**
8:00 AM	2	809	133	1	19	4	0	0	2	0	2	0	0	**972**
9:00 AM	3	641	101	0	21	6	0	0	4	1	0	0	0	**777**
10:00 AM	0	567	118	1	19	10	0	0	2	1	1	0	1	**720**
11:00 AM	8	573	111	2	25	17	0	0	0	0	1	0	1	**738**
12:00 PM	1	557	113	0	17	7	0	1	6	0	2	0	0	**704**
1:00 PM	11	531	103	0	31	5	0	0	4	1	1	1	0	**688**
2:00 PM	2	587	104	1	20	4	0	0	0	0	2	0	1	**721**
3:00 PM	7	563	123	0	34	6	0	0	0	1	0	0	0	**734**
4:00 PM	1	535	108	0	25	0	0	0	1	1	0	0	1	**672**
5:00 PM	4	504	81	0	7	2	0	0	0	1	0	0	0	**599**
6:00 PM	7	467	51	0	10	1	0	0	0	0	0	0	0	**536**
7:00 PM	1	330	37	0	5	0	0	0	0	0	0	0	0	**373**
8:00 PM	2	199	29	0	13	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	108	14	0	1	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	115	11	0	2	1	0	0	0	0	0	0	0	**129**
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	**55**
Total	**60**	**8,267**	**1,398**	**5**	**294**	**70**	**0**	**1**	**20**	**9**	**10**	**1**	**4**	**10,139**
Percent	**0.6%**	**81.5%**	**13.8%**	**0.0%**	**2.9%**	**0.7%**	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	23	7	0	3	0	0	0	0	0	0	0	0	**33**
1:00 AM	1	8	3	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	6	0	0	2	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	13	4	0	3	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	52	18	0	10	1	0	1	1	0	0	0	0	**83**
6:00 AM	3	135	52	4	34	3	0	0	2	0	1	0	0	**234**
7:00 AM	0	336	138	4	49	6	0	0	3	2	0	0	0	**538**
8:00 AM	0	428	172	2	38	7	0	1	4	2	1	0	1	**656**
9:00 AM	0	310	132	8	44	3	0	1	4	0	2	0	2	**506**
10:00 AM	2	338	134	10	37	9	0	1	2	1	2	0	0	**536**
11:00 AM	6	444	129	3	33	8	0	1	4	0	0	0	1	**629**
12:00 PM	4	478	145	3	35	3	0	1	3	1	2	0	0	**675**
1:00 PM	3	505	149	3	34	2	0	1	2	1	1	0	1	**702**
2:00 PM	2	547	135	2	30	0	0	0	0	0	0	0	1	**717**
3:00 PM	1	601	166	1	23	1	0	2	1	1	1	0	0	**798**
4:00 PM	5	588	145	0	29	1	0	1	0	0	0	0	0	**769**
5:00 PM	7	621	147	0	21	1	0	0	0	0	0	0	0	**797**
6:00 PM	3	557	113	0	11	1	0	0	0	0	0	0	1	**686**
7:00 PM	2	422	88	0	9	2	0	0	2	0	0	0	0	**525**
8:00 PM	1	349	69	0	12	2	0	0	0	1	0	0	0	**434**
9:00 PM	1	277	51	0	6	0	0	0	0	0	0	0	0	**335**
10:00 PM	0	162	29	0	3	0	0	0	0	0	0	0	0	**194**
11:00 PM	1	80	8	0	5	0	0	0	0	0	0	0	0	**94**
Total	**43**	**7,290**	**2,038**	**41**	**471**	**50**	**0**	**10**	**28**	**9**	**10**	**0**	**7**	**9,997**
Percent	**0.4%**	**72.9%**	**20.4%**	**0.4%**	**4.7%**	**0.5%**	**0.0%**	**0.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	**15**
1:00 AM	1	6	1	0	0	1	0	0	0	0	0	0	0	**9**
2:00 AM	2	6	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	34	4	0	4	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	101	15	0	2	0	0	0	0	0	0	0	0	**118**
6:00 AM	4	271	33	0	12	0	0	0	0	0	0	0	0	**320**
7:00 AM	4	695	97	0	25	6	0	0	1	3	1	0	0	**832**
8:00 AM	2	809	133	1	19	4	0	0	2	0	2	0	0	**972**
9:00 AM	3	641	101	0	21	6	0	0	4	1	0	0	0	**777**
10:00 AM	0	567	118	1	19	10	0	0	2	1	1	0	1	**720**
11:00 AM	8	573	111	2	25	17	0	0	0	0	1	0	1	**738**
12:00 PM	1	557	113	0	17	7	0	1	6	0	2	0	0	**704**
1:00 PM	11	531	103	0	31	5	0	0	4	1	1	1	0	**688**
2:00 PM	2	587	104	1	20	4	0	0	0	0	2	0	1	**721**
3:00 PM	7	563	123	0	34	6	0	0	0	1	0	0	0	**734**
4:00 PM	1	535	108	0	25	0	0	0	1	1	0	0	1	**672**
5:00 PM	4	504	81	0	7	2	0	0	0	1	0	0	0	**599**
6:00 PM	7	467	51	0	10	1	0	0	0	0	0	0	0	**536**
7:00 PM	1	330	37	0	5	0	0	0	0	0	0	0	0	**373**
8:00 PM	2	199	29	0	13	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	108	14	0	1	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	115	11	0	2	1	0	0	0	0	0	0	0	**129**
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	**55**
Total	**60**	**8,267**	**1,398**	**5**	**294**	**70**	**0**	**1**	**20**	**9**	**10**	**1**	**4**	**10,139**
Percent	**0.6%**	**81.5%**	**13.8%**	**0.0%**	**2.9%**	**0.7%**	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	23	7	0	3	0	0	0	0	0	0	0	0	**33**
1:00 AM	1	8	3	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	6	0	0	2	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	13	4	0	3	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	52	18	0	10	1	0	1	1	0	0	0	0	**83**
6:00 AM	3	135	52	4	34	3	0	0	2	0	1	0	0	**234**
7:00 AM	0	336	138	4	49	6	0	0	3	2	0	0	0	**538**
8:00 AM	0	428	172	2	38	7	0	1	4	2	1	0	1	**656**
9:00 AM	0	310	132	8	44	3	0	1	4	0	2	0	2	**506**
10:00 AM	2	338	134	10	37	9	0	1	2	1	2	0	0	**536**
11:00 AM	6	444	129	3	33	8	0	1	4	0	0	0	1	**629**
12:00 PM	4	478	145	3	35	3	0	1	3	1	2	0	0	**675**
1:00 PM	3	505	149	3	34	2	0	1	2	1	1	0	1	**702**
2:00 PM	2	547	135	2	30	0	0	0	0	0	0	0	1	**717**
3:00 PM	1	601	166	1	23	1	0	2	1	1	1	0	0	**798**
4:00 PM	5	588	145	0	29	1	0	1	0	0	0	0	0	**769**
5:00 PM	7	621	147	0	21	1	0	0	0	0	0	0	0	**797**
6:00 PM	3	557	113	0	11	1	0	0	0	0	0	0	1	**686**
7:00 PM	2	422	88	0	9	2	0	0	2	0	0	0	0	**525**
8:00 PM	1	349	69	0	12	2	0	0	0	1	0	0	0	**434**
9:00 PM	1	277	51	0	6	0	0	0	0	0	0	0	0	**335**
10:00 PM	0	162	29	0	3	0	0	0	0	0	0	0	0	**194**
11:00 PM	1	80	8	0	5	0	0	0	0	0	0	0	0	**94**
Total	**43**	**7,290**	**2,038**	**41**	**471**	**50**	**0**	**10**	**28**	**9**	**10**	**0**	**7**	**9,997**
Percent	**0.4%**	**72.9%**	**20.4%**	**0.4%**	**4.7%**	**0.5%**	**0.0%**	**0.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	**15**
1:00 AM	1	6	1	0	0	1	0	0	0	0	0	0	0	**9**
2:00 AM	2	6	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	34	4	0	4	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	101	15	0	2	0	0	0	0	0	0	0	0	**118**
6:00 AM	4	271	33	0	12	0	0	0	0	0	0	0	0	**320**
7:00 AM	4	695	97	0	25	6	0	0	1	3	1	0	0	**832**
8:00 AM	2	809	133	1	19	4	0	0	2	0	2	0	0	**972**
9:00 AM	3	641	101	0	21	6	0	0	4	1	0	0	0	**777**
10:00 AM	0	567	118	1	19	10	0	0	2	1	1	0	1	**720**
11:00 AM	8	573	111	2	25	17	0	0	0	0	1	0	1	**738**
12:00 PM	1	557	113	0	17	7	0	1	6	0	2	0	0	**704**
1:00 PM	11	531	103	0	31	5	0	0	4	1	1	1	0	**688**
2:00 PM	2	587	104	1	20	4	0	0	0	0	2	0	1	**721**
3:00 PM	7	563	123	0	34	6	0	0	0	1	0	0	0	**734**
4:00 PM	1	535	108	0	25	0	0	0	1	1	0	0	1	**672**
5:00 PM	4	504	81	0	7	2	0	0	0	1	0	0	0	**599**
6:00 PM	7	467	51	0	10	1	0	0	0	0	0	0	0	**536**
7:00 PM	1	330	37	0	5	0	0	0	0	0	0	0	0	**373**
8:00 PM	2	199	29	0	13	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	108	14	0	1	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	115	11	0	2	1	0	0	0	0	0	0	0	**129**
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	**55**
Total	**60**	**8,267**	**1,398**	**5**	**294**	**70**	**0**	**1**	**20**	**9**	**10**	**1**	**4**	**10,139**
Percent	**0.6%**	**81.5%**	**13.8%**	**0.0%**	**2.9%**	**0.7%**	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 - 5/1/2019
Site Code: 04

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	33	15	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	15	48
1:00 AM	13	9	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	9	22
2:00 AM	9	9	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	18
3:00 AM	14	10	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	10	24
4:00 AM	20	42	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	42	62
5:00 AM	83	118	201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	118	201
6:00 AM	234	320	554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	234	320	554
7:00 AM	538	832	1,370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	538	832	1,370
8:00 AM	**656**	**972**	**1,628**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**656**	**972**	**1,628**
9:00 AM	506	777	1,283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	506	777	1,283
10:00 AM	536	720	1,256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	536	720	1,256
11:00 AM	629	738	1,367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	629	738	1,367
12:00 PM	675	704	1,379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	675	704	1,379
1:00 PM	702	688	1,390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	702	688	1,390
2:00 PM	717	721	1,438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	717	721	1,438
3:00 PM	**798**	**734**	**1,532**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**798**	**734**	**1,532**
4:00 PM	769	672	1,441	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	769	672	1,441
5:00 PM	797	599	1,396	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	797	599	1,396
6:00 PM	686	536	1,222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	686	536	1,222
7:00 PM	525	373	898	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	525	373	898
8:00 PM	434	243	677	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	434	243	677
9:00 PM	335	123	458	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	335	123	458
10:00 PM	194	129	323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	129	323
11:00 PM	94	55	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	55	149
Total	9,997	10,139	20,136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,997	10,139	20,136
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	656	972	1,628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	656	972	1,628
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	798	734	1,532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	798	734	1,532

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 05

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	84	13,805	4,082	12	959	92	0	38	113	235	3	10	108	19,541
Percent	0.4%	70.6%	20.9%	0.1%	4.9%	0.5%	0.0%	0.2%	0.6%	1.2%	0.0%	0.1%	0.6%	100%
Westbound	80	13,709	4,229	21	1,328	74	0	38	77	108	7	5	59	19,735
Percent	0.4%	69.5%	21.4%	0.1%	6.7%	0.4%	0.0%	0.2%	0.4%	0.5%	0.0%	0.0%	0.3%	100%
Total	164	27,514	8,311	33	2,287	166	0	76	190	343	10	15	167	39,276
Percent	0.4%	70.1%	21.2%	0.1%	5.8%	0.4%	0.0%	0.2%	0.5%	0.9%	0.0%	0.0%	0.4%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

idax DATA SOLUTIONS

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	41	5	0	3	0	0	0	0	0	0	0	0	**49**
1:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
2:00 AM	0	21	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	25	4	0	3	0	0	1	0	0	0	0	0	**33**
4:00 AM	0	75	16	0	8	0	0	2	0	0	0	0	0	**101**
5:00 AM	1	171	50	2	18	1	0	1	3	0	0	0	0	**247**
6:00 AM	3	504	170	0	46	0	0	1	4	7	0	0	2	**737**
7:00 AM	7	944	281	2	54	7	0	2	9	17	0	0	8	**1,331**
8:00 AM	3	1,038	269	2	56	7	0	1	7	20	0	0	9	**1,412**
9:00 AM	2	1,036	334	0	77	11	0	6	12	20	1	2	12	**1,513**
10:00 AM	7	918	273	0	71	5	0	2	8	14	0	3	12	**1,313**
11:00 AM	8	863	307	0	69	5	0	5	8	17	0	1	9	**1,292**
12:00 PM	6	884	250	0	69	7	0	2	8	14	0	1	8	**1,249**
1:00 PM	7	854	275	0	60	6	0	5	8	19	0	1	6	**1,241**
2:00 PM	8	920	329	0	62	11	0	3	12	11	0	0	5	**1,361**
3:00 PM	7	957	313	0	83	6	0	1	10	20	0	0	11	**1,408**
4:00 PM	3	903	326	0	65	7	0	3	7	12	2	0	10	**1,338**
5:00 PM	5	968	252	0	68	5	0	0	2	25	0	0	11	**1,336**
6:00 PM	7	840	223	4	61	4	0	1	8	19	0	0	4	**1,171**
7:00 PM	2	586	132	2	29	3	0	1	1	13	0	1	1	**771**
8:00 PM	6	460	106	0	22	3	0	1	4	2	0	0	0	**604**
9:00 PM	1	450	85	0	13	3	0	0	0	1	0	1	0	**554**
10:00 PM	1	231	54	0	11	0	0	0	2	2	0	0	0	**301**
11:00 PM	0	100	22	0	11	1	0	0	0	2	0	0	0	**136**
Total	**84**	**13,805**	**4,082**	**12**	**959**	**92**	**0**	**38**	**113**	**235**	**3**	**10**	**108**	**19,541**
Percent	**0.4%**	**70.6%**	**20.9%**	**0.1%**	**4.9%**	**0.5%**	**0.0%**	**0.2%**	**0.6%**	**1.2%**	**0.0%**	**0.1%**	**0.6%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

idax DATA SOLUTIONS

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	82	18	0	1	1	0	0	0	0	0	0	0	**103**
1:00 AM	0	33	4	0	2	0	0	0	0	0	0	0	0	**39**
2:00 AM	0	24	4	0	2	0	0	0	1	0	0	0	0	**31**
3:00 AM	0	26	3	0	3	1	0	1	1	0	0	0	0	**35**
4:00 AM	0	48	11	2	5	1	0	3	0	0	0	0	0	**70**
5:00 AM	1	140	42	2	33	2	0	2	4	0	0	0	1	**227**
6:00 AM	1	297	99	6	76	4	0	1	4	0	0	0	1	**489**
7:00 AM	3	542	241	7	146	4	0	5	4	4	0	0	0	**956**
8:00 AM	2	717	335	2	131	7	0	3	4	8	1	0	5	**1,215**
9:00 AM	3	671	265	0	108	4	0	2	3	5	0	0	3	**1,064**
10:00 AM	3	731	287	0	85	4	0	2	9	10	0	1	3	**1,135**
11:00 AM	5	814	324	0	100	4	0	5	2	2	0	0	1	**1,257**
12:00 PM	9	927	293	0	92	7	0	1	3	11	1	1	2	**1,347**
1:00 PM	4	836	274	0	92	2	0	4	5	5	0	0	4	**1,226**
2:00 PM	8	973	326	0	86	4	0	1	6	17	0	2	7	**1,430**
3:00 PM	3	1,005	323	0	75	3	0	2	5	7	0	0	10	**1,433**
4:00 PM	5	1,071	357	0	70	6	0	3	5	10	2	0	6	**1,535**
5:00 PM	12	1,173	224	0	71	12	0	1	9	10	1	0	6	**1,519**
6:00 PM	7	1,057	236	2	43	4	0	1	4	10	2	0	7	**1,373**
7:00 PM	5	747	195	0	31	0	0	1	1	6	0	0	2	**988**
8:00 PM	3	642	145	0	28	3	0	0	3	2	0	1	0	**827**
9:00 PM	4	609	124	0	29	0	0	0	4	1	0	0	1	**772**
10:00 PM	0	356	62	0	12	1	0	0	0	0	0	0	0	**431**
11:00 PM	1	188	37	0	7	0	0	0	0	0	0	0	0	**233**
Total	**80**	**13,709**	**4,229**	**21**	**1,328**	**74**	**0**	**38**	**77**	**108**	**7**	**5**	**59**	**19,735**
Percent	**0.4%**	**69.5%**	**21.4%**	**0.1%**	**6.7%**	**0.4%**	**0.0%**	**0.2%**	**0.4%**	**0.5%**	**0.0%**	**0.0%**	**0.3%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	41	5	0	3	0	0	0	0	0	0	0	0	**49**
1:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
2:00 AM	0	21	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	25	4	0	3	0	0	1	0	0	0	0	0	**33**
4:00 AM	0	75	16	0	8	0	0	2	0	0	0	0	0	**101**
5:00 AM	1	171	50	2	18	1	0	1	3	0	0	0	0	**247**
6:00 AM	3	504	170	0	46	0	0	1	4	7	0	0	2	**737**
7:00 AM	7	944	281	2	54	7	0	2	9	17	0	0	8	**1,331**
8:00 AM	3	1,038	269	2	56	7	0	1	7	20	0	0	9	**1,412**
9:00 AM	2	1,036	334	0	77	11	0	6	12	20	1	2	12	**1,513**
10:00 AM	7	918	273	0	71	5	0	2	8	14	0	3	12	**1,313**
11:00 AM	8	863	307	0	69	5	0	5	8	17	0	1	9	**1,292**
12:00 PM	6	884	250	0	69	7	0	2	8	14	0	1	8	**1,249**
1:00 PM	7	854	275	0	60	6	0	5	8	19	0	1	6	**1,241**
2:00 PM	8	920	329	0	62	11	0	3	12	11	0	0	5	**1,361**
3:00 PM	7	957	313	0	83	6	0	1	10	20	0	0	11	**1,408**
4:00 PM	3	903	326	0	65	7	0	3	7	12	2	0	10	**1,338**
5:00 PM	5	968	252	0	68	5	0	0	2	25	0	0	11	**1,336**
6:00 PM	7	840	223	4	61	4	0	1	8	19	0	0	4	**1,171**
7:00 PM	2	586	132	2	29	3	0	1	1	13	0	1	1	**771**
8:00 PM	6	460	106	0	22	3	0	1	4	2	0	0	0	**604**
9:00 PM	1	450	85	0	13	3	0	0	0	1	0	1	0	**554**
10:00 PM	1	231	54	0	11	0	0	0	2	2	0	0	0	**301**
11:00 PM	0	100	22	0	11	1	0	0	0	2	0	0	0	**136**
Total	**84**	**13,805**	**4,082**	**12**	**959**	**92**	**0**	**38**	**113**	**235**	**3**	**10**	**108**	**19,541**
Percent	**0.4%**	**70.6%**	**20.9%**	**0.1%**	**4.9%**	**0.5%**	**0.0%**	**0.2%**	**0.6%**	**1.2%**	**0.0%**	**0.1%**	**0.6%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	82	18	0	1	1	0	0	0	0	0	0	0	**103**
1:00 AM	0	33	4	0	2	0	0	0	0	0	0	0	0	**39**
2:00 AM	0	24	4	0	2	0	0	0	1	0	0	0	0	**31**
3:00 AM	0	26	3	0	3	1	0	1	1	0	0	0	0	**35**
4:00 AM	0	48	11	2	5	1	0	3	0	0	0	0	0	**70**
5:00 AM	1	140	42	2	33	2	0	2	4	0	0	0	1	**227**
6:00 AM	1	297	99	6	76	4	0	1	4	0	0	0	1	**489**
7:00 AM	3	542	241	7	146	4	0	5	4	4	0	0	0	**956**
8:00 AM	2	717	335	2	131	7	0	3	4	8	1	0	5	**1,215**
9:00 AM	3	671	265	0	108	4	0	2	3	5	0	0	3	**1,064**
10:00 AM	3	731	287	0	85	4	0	2	9	10	0	1	3	**1,135**
11:00 AM	5	814	324	0	100	4	0	5	2	2	0	0	1	**1,257**
12:00 PM	9	927	293	0	92	7	0	1	3	11	1	1	2	**1,347**
1:00 PM	4	836	274	0	92	2	0	4	5	5	0	0	4	**1,226**
2:00 PM	8	973	326	0	86	4	0	1	6	17	0	2	7	**1,430**
3:00 PM	3	1,005	323	0	75	3	0	2	5	7	0	0	10	**1,433**
4:00 PM	5	1,071	357	0	70	6	0	3	5	10	2	0	6	**1,535**
5:00 PM	12	1,173	224	0	71	12	0	1	9	10	1	0	6	**1,519**
6:00 PM	7	1,057	236	2	43	4	0	1	4	10	2	0	7	**1,373**
7:00 PM	5	747	195	0	31	0	0	1	1	6	0	0	2	**988**
8:00 PM	3	642	145	0	28	3	0	0	3	2	0	1	0	**827**
9:00 PM	4	609	124	0	29	0	0	0	4	1	0	0	1	**772**
10:00 PM	0	356	62	0	12	1	0	0	0	0	0	0	0	**431**
11:00 PM	1	188	37	0	7	0	0	0	0	0	0	0	0	**233**
Total	**80**	**13,709**	**4,229**	**21**	**1,328**	**74**	**0**	**38**	**77**	**108**	**7**	**5**	**59**	**19,735**
Percent	**0.4%**	**69.5%**	**21.4%**	**0.1%**	**6.7%**	**0.4%**	**0.0%**	**0.2%**	**0.4%**	**0.5%**	**0.0%**	**0.0%**	**0.3%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	41	5	0	3	0	0	0	0	0	0	0	0	**49**
1:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
2:00 AM	0	21	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	25	4	0	3	0	0	1	0	0	0	0	0	**33**
4:00 AM	0	75	16	0	8	0	0	2	0	0	0	0	0	**101**
5:00 AM	1	171	50	2	18	1	0	1	3	0	0	0	0	**247**
6:00 AM	3	504	170	0	46	0	0	1	4	7	0	0	2	**737**
7:00 AM	7	944	281	2	54	7	0	2	9	17	0	0	8	**1,331**
8:00 AM	3	1,038	269	2	56	7	0	1	7	20	0	0	9	**1,412**
9:00 AM	2	1,036	334	0	77	11	0	6	12	20	1	2	12	**1,513**
10:00 AM	7	918	273	0	71	5	0	2	8	14	0	3	12	**1,313**
11:00 AM	8	863	307	0	69	5	0	5	8	17	0	1	9	**1,292**
12:00 PM	6	884	250	0	69	7	0	2	8	14	0	1	8	**1,249**
1:00 PM	7	854	275	0	60	6	0	5	8	19	0	1	6	**1,241**
2:00 PM	8	920	329	0	62	11	0	3	12	11	0	0	5	**1,361**
3:00 PM	7	957	313	0	83	6	0	1	10	20	0	0	11	**1,408**
4:00 PM	3	903	326	0	65	7	0	3	7	12	2	0	10	**1,338**
5:00 PM	5	968	252	0	68	5	0	0	2	25	0	0	11	**1,336**
6:00 PM	7	840	223	4	61	4	0	1	8	19	0	0	4	**1,171**
7:00 PM	2	586	132	2	29	3	0	1	1	13	0	1	1	**771**
8:00 PM	6	460	106	0	22	3	0	1	4	2	0	0	0	**604**
9:00 PM	1	450	85	0	13	3	0	0	0	1	0	1	0	**554**
10:00 PM	1	231	54	0	11	0	0	0	2	2	0	0	0	**301**
11:00 PM	0	100	22	0	11	1	0	0	0	2	0	0	0	**136**
Total	**84**	**13,805**	**4,082**	**12**	**959**	**92**	**0**	**38**	**113**	**235**	**3**	**10**	**108**	**19,541**
Percent	**0.4%**	**70.6%**	**20.9%**	**0.1%**	**4.9%**	**0.5%**	**0.0%**	**0.2%**	**0.6%**	**1.2%**	**0.0%**	**0.1%**	**0.6%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	82	18	0	1	1	0	0	0	0	0	0	0	**103**
1:00 AM	0	33	4	0	2	0	0	0	0	0	0	0	0	**39**
2:00 AM	0	24	4	0	2	0	0	0	1	0	0	0	0	**31**
3:00 AM	0	26	3	0	3	1	0	1	1	0	0	0	0	**35**
4:00 AM	0	48	11	2	5	1	0	3	0	0	0	0	0	**70**
5:00 AM	1	140	42	2	33	2	0	2	4	0	0	0	1	**227**
6:00 AM	1	297	99	6	76	4	0	1	4	0	0	0	1	**489**
7:00 AM	3	542	241	7	146	4	0	5	4	4	0	0	0	**956**
8:00 AM	2	717	335	2	131	7	0	3	4	8	1	0	5	**1,215**
9:00 AM	3	671	265	0	108	4	0	2	3	5	0	0	3	**1,064**
10:00 AM	3	731	287	0	85	4	0	2	9	10	0	1	3	**1,135**
11:00 AM	5	814	324	0	100	4	0	5	2	2	0	0	1	**1,257**
12:00 PM	9	927	293	0	92	7	0	1	3	11	1	1	2	**1,347**
1:00 PM	4	836	274	0	92	2	0	4	5	5	0	0	4	**1,226**
2:00 PM	8	973	326	0	86	4	0	1	6	17	0	2	7	**1,430**
3:00 PM	3	1,005	323	0	75	3	0	2	5	7	0	0	10	**1,433**
4:00 PM	5	1,071	357	0	70	6	0	3	5	10	2	0	6	**1,535**
5:00 PM	12	1,173	224	0	71	12	0	1	9	10	1	0	6	**1,519**
6:00 PM	7	1,057	236	2	43	4	0	1	4	10	2	0	7	**1,373**
7:00 PM	5	747	195	0	31	0	0	1	1	6	0	0	2	**988**
8:00 PM	3	642	145	0	28	3	0	0	3	2	0	1	0	**827**
9:00 PM	4	609	124	0	29	0	0	0	4	1	0	0	1	**772**
10:00 PM	0	356	62	0	12	1	0	0	0	0	0	0	0	**431**
11:00 PM	1	188	37	0	7	0	0	0	0	0	0	0	0	**233**
Total	**80**	**13,709**	**4,229**	**21**	**1,328**	**74**	**0**	**38**	**77**	**108**	**7**	**5**	**59**	**19,735**
Percent	**0.4%**	**69.5%**	**21.4%**	**0.1%**	**6.7%**	**0.4%**	**0.0%**	**0.2%**	**0.4%**	**0.5%**	**0.0%**	**0.0%**	**0.3%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 - 5/1/2019
Site Code: 05

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	49	103	152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	103	152
1:00 AM	21	39	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	39	60
2:00 AM	22	31	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	31	53
3:00 AM	33	35	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	35	68
4:00 AM	101	70	171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	70	171
5:00 AM	247	227	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	227	474
6:00 AM	737	489	1,226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	737	489	1,226
7:00 AM	1,331	956	2,287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,331	956	2,287
8:00 AM	1,412	1,215	**2,627**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,412	1,215	**2,627**
9:00 AM	**1,513**	1,064	2,577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,513**	1,064	2,577
10:00 AM	1,313	1,135	2,448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,313	1,135	2,448
11:00 AM	1,292	**1,257**	2,549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,292	**1,257**	2,549
12:00 PM	1,249	1,347	2,596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,249	1,347	2,596
1:00 PM	1,241	1,226	2,467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,241	1,226	2,467
2:00 PM	1,361	1,430	2,791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,361	1,430	2,791
3:00 PM	**1,408**	1,433	2,841	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,408**	1,433	2,841
4:00 PM	1,338	**1,535**	**2,873**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,338	**1,535**	**2,873**
5:00 PM	1,336	1,519	2,855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,336	1,519	2,855
6:00 PM	1,171	1,373	2,544	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,171	1,373	2,544
7:00 PM	771	988	1,759	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	771	988	1,759
8:00 PM	604	827	1,431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	604	827	1,431
9:00 PM	554	772	1,326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	554	772	1,326
10:00 PM	301	431	732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301	431	732
11:00 PM	136	233	369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	136	233	369
Total	19,541	19,735	39,276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,541	19,735	39,276
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	09:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	09:00	11:00	08:00
Vol.	1,513	1,257	2,627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,513	1,257	2,627
PM Peak	15:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:00	16:00
Vol.	1,408	1,535	2,873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,408	1,535	2,873

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 4th St, B/W 2nd-Marquard & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 06

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	85	3,661	565	6	232	9	0	0	0	0	0	0	0	4,558
Percent	1.9%	80.3%	12.4%	0.1%	5.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	123	3,633	588	3	258	12	0	2	1	2	0	0	0	4,622
Percent	2.7%	78.6%	12.7%	0.1%	5.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	208	7,294	1,153	9	490	21	0	2	1	2	0	0	0	9,180
Percent	2.3%	79.5%	12.6%	0.1%	5.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	32	4	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
2:00 AM	3	3	2	0	2	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	9	3	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	4	4	0	4	0	0	0	0	0	0	0	0	**13**
5:00 AM	3	32	6	1	5	1	0	0	0	0	0	0	0	**48**
6:00 AM	3	45	8	0	7	0	0	0	0	0	0	0	0	**63**
7:00 AM	3	164	42	3	13	0	0	0	0	0	0	0	0	**225**
8:00 AM	7	215	45	1	22	0	0	0	0	0	0	0	0	**290**
9:00 AM	3	201	36	0	21	1	0	0	0	0	0	0	0	**262**
10:00 AM	6	209	38	1	17	1	0	0	0	0	0	0	0	**272**
11:00 AM	6	253	36	0	24	0	0	0	0	0	0	0	0	**319**
12:00 PM	7	325	44	0	16	1	0	0	0	0	0	0	0	**393**
1:00 PM	3	283	44	0	18	0	0	0	0	0	0	0	0	**348**
2:00 PM	6	276	50	0	14	0	0	0	0	0	0	0	0	**346**
3:00 PM	3	276	49	0	21	1	0	0	0	0	0	0	0	**350**
4:00 PM	4	286	44	0	17	0	0	0	0	0	0	0	0	**351**
5:00 PM	4	285	38	0	11	1	0	0	0	0	0	0	0	**339**
6:00 PM	4	189	25	0	9	0	0	0	0	0	0	0	0	**227**
7:00 PM	5	183	13	0	1	2	0	0	0	0	0	0	0	**204**
8:00 PM	4	135	11	0	3	1	0	0	0	0	0	0	0	**154**
9:00 PM	5	135	6	0	2	0	0	0	0	0	0	0	0	**148**
10:00 PM	3	72	10	0	1	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	35	5	0	2	0	0	0	0	0	0	0	0	**42**
Total	**85**	**3,661**	**565**	**6**	**232**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**1.9%**	**80.3%**	**12.4%**	**0.1%**	**5.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	3	1	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	**10**
2:00 AM	1	4	3	0	1	1	0	0	0	0	0	0	0	**10**
3:00 AM	0	6	2	0	0	0	0	0	0	1	0	0	0	**9**
4:00 AM	0	22	4	0	4	0	0	1	0	0	0	0	0	**31**
5:00 AM	3	42	14	0	11	1	0	0	0	0	0	0	0	**71**
6:00 AM	2	75	19	1	14	1	0	0	0	0	0	0	0	**112**
7:00 AM	4	162	48	0	25	1	0	0	0	0	0	0	0	**240**
8:00 AM	8	212	41	0	19	1	0	0	0	0	0	0	0	**281**
9:00 AM	3	184	31	0	16	0	0	0	0	0	0	0	0	**234**
10:00 AM	10	223	41	0	25	0	0	0	0	1	0	0	0	**300**
11:00 AM	8	247	41	0	28	0	0	0	0	0	0	0	0	**324**
12:00 PM	7	273	39	0	11	1	0	0	0	0	0	0	0	**331**
1:00 PM	8	276	49	0	9	1	0	0	0	0	0	0	0	**343**
2:00 PM	7	276	29	0	22	0	0	0	0	0	0	0	0	**334**
3:00 PM	9	314	43	0	21	0	0	0	0	0	0	0	0	**387**
4:00 PM	9	272	41	0	8	2	0	0	0	0	0	0	0	**332**
5:00 PM	12	295	51	0	10	0	0	1	0	0	0	0	0	**369**
6:00 PM	8	276	28	0	13	2	0	0	1	0	0	0	0	**328**
7:00 PM	9	177	18	1	6	0	0	0	0	0	0	0	0	**211**
8:00 PM	5	137	18	0	7	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	82	12	0	2	0	0	0	0	0	0	0	0	**103**
10:00 PM	3	42	8	0	3	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	**25**
Total	**123**	**3,633**	**588**	**3**	**258**	**12**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**4,622**
Percent	**2.7%**	**78.6%**	**12.7%**	**0.1%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	32	4	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
2:00 AM	3	3	2	0	2	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	9	3	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	4	4	0	4	0	0	0	0	0	0	0	0	**13**
5:00 AM	3	32	6	1	5	1	0	0	0	0	0	0	0	**48**
6:00 AM	3	45	8	0	7	0	0	0	0	0	0	0	0	**63**
7:00 AM	3	164	42	3	13	0	0	0	0	0	0	0	0	**225**
8:00 AM	7	215	45	1	22	0	0	0	0	0	0	0	0	**290**
9:00 AM	3	201	36	0	21	1	0	0	0	0	0	0	0	**262**
10:00 AM	6	209	38	1	17	1	0	0	0	0	0	0	0	**272**
11:00 AM	6	253	36	0	24	0	0	0	0	0	0	0	0	**319**
12:00 PM	7	325	44	0	16	1	0	0	0	0	0	0	0	**393**
1:00 PM	3	283	44	0	18	0	0	0	0	0	0	0	0	**348**
2:00 PM	6	276	50	0	14	0	0	0	0	0	0	0	0	**346**
3:00 PM	3	276	49	0	21	1	0	0	0	0	0	0	0	**350**
4:00 PM	4	286	44	0	17	0	0	0	0	0	0	0	0	**351**
5:00 PM	4	285	38	0	11	1	0	0	0	0	0	0	0	**339**
6:00 PM	4	189	25	0	9	0	0	0	0	0	0	0	0	**227**
7:00 PM	5	183	13	0	1	2	0	0	0	0	0	0	0	**204**
8:00 PM	4	135	11	0	3	1	0	0	0	0	0	0	0	**154**
9:00 PM	5	135	6	0	2	0	0	0	0	0	0	0	0	**148**
10:00 PM	3	72	10	0	1	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	35	5	0	2	0	0	0	0	0	0	0	0	**42**
Total	**85**	**3,661**	**565**	**6**	**232**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**1.9%**	**80.3%**	**12.4%**	**0.1%**	**5.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	3	1	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	**10**
2:00 AM	1	4	3	0	1	1	0	0	0	0	0	0	0	**10**
3:00 AM	0	6	2	0	0	0	0	0	0	1	0	0	0	**9**
4:00 AM	0	22	4	0	4	0	0	1	0	0	0	0	0	**31**
5:00 AM	3	42	14	0	11	1	0	0	0	0	0	0	0	**71**
6:00 AM	2	75	19	1	14	1	0	0	0	0	0	0	0	**112**
7:00 AM	4	162	48	0	25	1	0	0	0	0	0	0	0	**240**
8:00 AM	8	212	41	0	19	1	0	0	0	0	0	0	0	**281**
9:00 AM	3	184	31	0	16	0	0	0	0	0	0	0	0	**234**
10:00 AM	10	223	41	0	25	0	0	0	0	1	0	0	0	**300**
11:00 AM	8	247	41	0	28	0	0	0	0	0	0	0	0	**324**
12:00 PM	7	273	39	0	11	1	0	0	0	0	0	0	0	**331**
1:00 PM	8	276	49	0	9	1	0	0	0	0	0	0	0	**343**
2:00 PM	7	276	29	0	22	0	0	0	0	0	0	0	0	**334**
3:00 PM	9	314	43	0	21	0	0	0	0	0	0	0	0	**387**
4:00 PM	9	272	41	0	8	2	0	0	0	0	0	0	0	**332**
5:00 PM	12	295	51	0	10	0	0	1	0	0	0	0	0	**369**
6:00 PM	8	276	28	0	13	2	0	0	1	0	0	0	0	**328**
7:00 PM	9	177	18	1	6	0	0	0	0	0	0	0	0	**211**
8:00 PM	5	137	18	0	7	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	82	12	0	2	0	0	0	0	0	0	0	0	**103**
10:00 PM	3	42	8	0	3	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	**25**
Total	**123**	**3,633**	**588**	**3**	**258**	**12**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**4,622**
Percent	**2.7%**	**78.6%**	**12.7%**	**0.1%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	32	4	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
2:00 AM	3	3	2	0	2	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	9	3	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	4	4	0	4	0	0	0	0	0	0	0	0	**13**
5:00 AM	3	32	6	1	5	1	0	0	0	0	0	0	0	**48**
6:00 AM	3	45	8	0	7	0	0	0	0	0	0	0	0	**63**
7:00 AM	3	164	42	3	13	0	0	0	0	0	0	0	0	**225**
8:00 AM	7	215	45	1	22	0	0	0	0	0	0	0	0	**290**
9:00 AM	3	201	36	0	21	1	0	0	0	0	0	0	0	**262**
10:00 AM	6	209	38	1	17	1	0	0	0	0	0	0	0	**272**
11:00 AM	6	253	36	0	24	0	0	0	0	0	0	0	0	**319**
12:00 PM	7	325	44	0	16	1	0	0	0	0	0	0	0	**393**
1:00 PM	3	283	44	0	18	0	0	0	0	0	0	0	0	**348**
2:00 PM	6	276	50	0	14	0	0	0	0	0	0	0	0	**346**
3:00 PM	3	276	49	0	21	1	0	0	0	0	0	0	0	**350**
4:00 PM	4	286	44	0	17	0	0	0	0	0	0	0	0	**351**
5:00 PM	4	285	38	0	11	1	0	0	0	0	0	0	0	**339**
6:00 PM	4	189	25	0	9	0	0	0	0	0	0	0	0	**227**
7:00 PM	5	183	13	0	1	2	0	0	0	0	0	0	0	**204**
8:00 PM	4	135	11	0	3	1	0	0	0	0	0	0	0	**154**
9:00 PM	5	135	6	0	2	0	0	0	0	0	0	0	0	**148**
10:00 PM	3	72	10	0	1	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	35	5	0	2	0	0	0	0	0	0	0	0	**42**
Total	**85**	**3,661**	**565**	**6**	**232**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**1.9%**	**80.3%**	**12.4%**	**0.1%**	**5.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	3	1	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	**10**
2:00 AM	1	4	3	0	1	1	0	0	0	0	0	0	0	**10**
3:00 AM	0	6	2	0	0	0	0	0	0	1	0	0	0	**9**
4:00 AM	0	22	4	0	4	0	0	1	0	0	0	0	0	**31**
5:00 AM	3	42	14	0	11	1	0	0	0	0	0	0	0	**71**
6:00 AM	2	75	19	1	14	1	0	0	0	0	0	0	0	**112**
7:00 AM	4	162	48	0	25	1	0	0	0	0	0	0	0	**240**
8:00 AM	8	212	41	0	19	1	0	0	0	0	0	0	0	**281**
9:00 AM	3	184	31	0	16	0	0	0	0	0	0	0	0	**234**
10:00 AM	10	223	41	0	25	0	0	0	0	1	0	0	0	**300**
11:00 AM	8	247	41	0	28	0	0	0	0	0	0	0	0	**324**
12:00 PM	7	273	39	0	11	1	0	0	0	0	0	0	0	**331**
1:00 PM	8	276	49	0	9	1	0	0	0	0	0	0	0	**343**
2:00 PM	7	276	29	0	22	0	0	0	0	0	0	0	0	**334**
3:00 PM	9	314	43	0	21	0	0	0	0	0	0	0	0	**387**
4:00 PM	9	272	41	0	8	2	0	0	0	0	0	0	0	**332**
5:00 PM	12	295	51	0	10	0	0	1	0	0	0	0	0	**369**
6:00 PM	8	276	28	0	13	2	0	0	1	0	0	0	0	**328**
7:00 PM	9	177	18	1	6	0	0	0	0	0	0	0	0	**211**
8:00 PM	5	137	18	0	7	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	82	12	0	2	0	0	0	0	0	0	0	0	**103**
10:00 PM	3	42	8	0	3	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	**25**
Total	**123**	**3,633**	**588**	**3**	**258**	**12**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**4,622**
Percent	**2.7%**	**78.6%**	**12.7%**	**0.1%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 06

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	37	14	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	14	51
1:00 AM	17	10	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	10	27
2:00 AM	10	10	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	20
3:00 AM	14	9	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	9	23
4:00 AM	13	31	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	31	44
5:00 AM	48	71	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	71	119
6:00 AM	63	112	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	112	175
7:00 AM	225	240	465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	240	465
8:00 AM	290	281	571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	290	281	571
9:00 AM	262	234	496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262	234	496
10:00 AM	272	300	572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	272	300	572
11:00 AM	**319**	**324**	**643**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**319**	**324**	**643**
12:00 PM	**393**	331	724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**393**	331	724
1:00 PM	348	343	691	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	348	343	691
2:00 PM	346	334	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	346	334	680
3:00 PM	350	**387**	**737**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	**387**	**737**
4:00 PM	351	332	683	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	351	332	683
5:00 PM	339	369	708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	339	369	708
6:00 PM	227	328	555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	328	555
7:00 PM	204	211	415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	211	415
8:00 PM	154	167	321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	167	321
9:00 PM	148	103	251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	103	251
10:00 PM	86	56	142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	56	142
11:00 PM	42	25	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	25	67
Total	4,558	4,622	9,180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,558	4,622	9,180
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	11:00	11:00
Vol.	319	324	643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	319	324	643
PM Peak	12:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	15:00	15:00
Vol.	393	387	737	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	393	387	737

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 5th Ave, B/W H St & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 07

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	15	1,086	141	0	22	33	0	1	0	0	0	0	2	1,300
Percent	1.2%	83.5%	10.8%	0.0%	1.7%	2.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	100%
Westbound	35	1,730	343	0	30	26	0	4	0	1	0	0	1	2,170
Percent	1.6%	79.7%	15.8%	0.0%	1.4%	1.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	50	2,816	484	0	52	59	0	5	0	1	0	0	3	3,470
Percent	1.4%	81.2%	13.9%	0.0%	1.5%	1.7%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
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Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	13	2	0	1	0	0	0	0	0	0	0	0	**17**
7:00 AM	1	58	11	0	2	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	46	8	0	0	1	0	0	0	0	0	0	1	**56**
9:00 AM	0	54	3	0	4	1	0	0	0	0	0	0	0	**62**
10:00 AM	0	54	6	0	2	0	0	0	0	0	0	0	0	**62**
11:00 AM	1	59	9	0	1	4	0	0	0	0	0	0	0	**74**
12:00 PM	1	93	15	0	0	6	0	0	0	0	0	0	0	**115**
1:00 PM	1	90	11	0	1	0	0	1	0	0	0	0	0	**104**
2:00 PM	0	98	11	0	1	6	0	0	0	0	0	0	0	**116**
3:00 PM	2	82	17	0	1	1	0	0	0	0	0	0	0	**103**
4:00 PM	1	109	15	0	1	6	0	0	0	0	0	0	1	**133**
5:00 PM	2	118	8	0	2	4	0	0	0	0	0	0	0	**134**
6:00 PM	1	79	6	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	1	48	9	0	2	1	0	0	0	0	0	0	0	**61**
8:00 PM	0	30	4	0	0	2	0	0	0	0	0	0	0	**36**
9:00 PM	1	27	2	0	1	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	8	4	0	0	1	0	0	0	0	0	0	0	**14**
11:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**15**	**1,086**	**141**	**0**	**22**	**33**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1,300**
Percent	**1.2%**	**83.5%**	**10.8%**	**0.0%**	**1.7%**	**2.5%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	40	5	0	0	1	0	0	0	0	0	0	0	**46**
7:00 AM	2	137	31	0	2	3	0	1	0	0	0	0	0	**176**
8:00 AM	3	138	26	0	0	4	0	1	0	0	0	0	0	**172**
9:00 AM	1	79	13	0	1	1	0	0	0	0	0	0	0	**95**
10:00 AM	3	90	19	0	5	0	0	0	0	0	0	0	0	**117**
11:00 AM	0	93	16	0	1	2	0	0	0	0	0	0	0	**112**
12:00 PM	2	100	29	0	3	1	0	0	0	0	0	0	0	**135**
1:00 PM	1	95	18	0	6	1	0	0	0	0	0	0	0	**121**
2:00 PM	1	138	29	0	0	2	0	0	0	1	0	0	0	**171**
3:00 PM	4	130	42	0	5	1	0	0	0	0	0	0	0	**182**
4:00 PM	9	194	24	0	3	4	0	0	0	0	0	0	1	**235**
5:00 PM	0	170	26	0	1	1	0	2	0	0	0	0	0	**200**
6:00 PM	2	125	32	0	0	3	0	0	0	0	0	0	0	**162**
7:00 PM	2	85	13	0	1	1	0	0	0	0	0	0	0	**102**
8:00 PM	0	31	9	0	0	1	0	0	0	0	0	0	0	**41**
9:00 PM	5	33	4	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
Total	**35**	**1,730**	**343**	**0**	**30**	**26**	**0**	**4**	**0**	**1**	**0**	**0**	**1**	**2,170**
Percent	**1.6%**	**79.7%**	**15.8%**	**0.0%**	**1.4%**	**1.2%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	13	2	0	1	0	0	0	0	0	0	0	0	**17**
7:00 AM	1	58	11	0	2	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	46	8	0	0	1	0	0	0	0	0	0	1	**56**
9:00 AM	0	54	3	0	4	1	0	0	0	0	0	0	0	**62**
10:00 AM	0	54	6	0	2	0	0	0	0	0	0	0	0	**62**
11:00 AM	1	59	9	0	1	4	0	0	0	0	0	0	0	**74**
12:00 PM	1	93	15	0	0	6	0	0	0	0	0	0	0	**115**
1:00 PM	1	90	11	0	1	0	0	1	0	0	0	0	0	**104**
2:00 PM	0	98	11	0	1	6	0	0	0	0	0	0	0	**116**
3:00 PM	2	82	17	0	1	1	0	0	0	0	0	0	0	**103**
4:00 PM	1	109	15	0	1	6	0	0	0	0	0	0	1	**133**
5:00 PM	2	118	8	0	2	4	0	0	0	0	0	0	0	**134**
6:00 PM	1	79	6	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	1	48	9	0	2	1	0	0	0	0	0	0	0	**61**
8:00 PM	0	30	4	0	0	2	0	0	0	0	0	0	0	**36**
9:00 PM	1	27	2	0	1	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	8	4	0	0	1	0	0	0	0	0	0	0	**14**
11:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**15**	**1,086**	**141**	**0**	**22**	**33**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1,300**
Percent	**1.2%**	**83.5%**	**10.8%**	**0.0%**	**1.7%**	**2.5%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	40	5	0	0	1	0	0	0	0	0	0	0	**46**
7:00 AM	2	137	31	0	2	3	0	1	0	0	0	0	0	**176**
8:00 AM	3	138	26	0	0	4	0	1	0	0	0	0	0	**172**
9:00 AM	1	79	13	0	1	1	0	0	0	0	0	0	0	**95**
10:00 AM	3	90	19	0	5	0	0	0	0	0	0	0	0	**117**
11:00 AM	0	93	16	0	1	2	0	0	0	0	0	0	0	**112**
12:00 PM	2	100	29	0	3	1	0	0	0	0	0	0	0	**135**
1:00 PM	1	95	18	0	6	1	0	0	0	0	0	0	0	**121**
2:00 PM	1	138	29	0	0	2	0	0	0	1	0	0	0	**171**
3:00 PM	4	130	42	0	5	1	0	0	0	0	0	0	0	**182**
4:00 PM	9	194	24	0	3	4	0	0	0	0	0	0	1	**235**
5:00 PM	0	170	26	0	1	1	0	2	0	0	0	0	0	**200**
6:00 PM	2	125	32	0	0	3	0	0	0	0	0	0	0	**162**
7:00 PM	2	85	13	0	1	1	0	0	0	0	0	0	0	**102**
8:00 PM	0	31	9	0	0	1	0	0	0	0	0	0	0	**41**
9:00 PM	5	33	4	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
Total	**35**	**1,730**	**343**	**0**	**30**	**26**	**0**	**4**	**0**	**1**	**0**	**0**	**1**	**2,170**
Percent	**1.6%**	**79.7%**	**15.8%**	**0.0%**	**1.4%**	**1.2%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	13	2	0	1	0	0	0	0	0	0	0	0	**17**
7:00 AM	1	58	11	0	2	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	46	8	0	0	1	0	0	0	0	0	0	1	**56**
9:00 AM	0	54	3	0	4	1	0	0	0	0	0	0	0	**62**
10:00 AM	0	54	6	0	2	0	0	0	0	0	0	0	0	**62**
11:00 AM	1	59	9	0	1	4	0	0	0	0	0	0	0	**74**
12:00 PM	1	93	15	0	0	6	0	0	0	0	0	0	0	**115**
1:00 PM	1	90	11	0	1	0	0	1	0	0	0	0	0	**104**
2:00 PM	0	98	11	0	1	6	0	0	0	0	0	0	0	**116**
3:00 PM	2	82	17	0	1	1	0	0	0	0	0	0	0	**103**
4:00 PM	1	109	15	0	1	6	0	0	0	0	0	0	1	**133**
5:00 PM	2	118	8	0	2	4	0	0	0	0	0	0	0	**134**
6:00 PM	1	79	6	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	1	48	9	0	2	1	0	0	0	0	0	0	0	**61**
8:00 PM	0	30	4	0	0	2	0	0	0	0	0	0	0	**36**
9:00 PM	1	27	2	0	1	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	8	4	0	0	1	0	0	0	0	0	0	0	**14**
11:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**15**	**1,086**	**141**	**0**	**22**	**33**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1,300**
Percent	**1.2%**	**83.5%**	**10.8%**	**0.0%**	**1.7%**	**2.5%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	40	5	0	0	1	0	0	0	0	0	0	0	**46**
7:00 AM	2	137	31	0	2	3	0	1	0	0	0	0	0	**176**
8:00 AM	3	138	26	0	0	4	0	1	0	0	0	0	0	**172**
9:00 AM	1	79	13	0	1	1	0	0	0	0	0	0	0	**95**
10:00 AM	3	90	19	0	5	0	0	0	0	0	0	0	0	**117**
11:00 AM	0	93	16	0	1	2	0	0	0	0	0	0	0	**112**
12:00 PM	2	100	29	0	3	1	0	0	0	0	0	0	0	**135**
1:00 PM	1	95	18	0	6	1	0	0	0	0	0	0	0	**121**
2:00 PM	1	138	29	0	0	2	0	0	0	1	0	0	0	**171**
3:00 PM	4	130	42	0	5	1	0	0	0	0	0	0	0	**182**
4:00 PM	9	194	24	0	3	4	0	0	0	0	0	0	1	**235**
5:00 PM	0	170	26	0	1	1	0	2	0	0	0	0	0	**200**
6:00 PM	2	125	32	0	0	3	0	0	0	0	0	0	0	**162**
7:00 PM	2	85	13	0	1	1	0	0	0	0	0	0	0	**102**
8:00 PM	0	31	9	0	0	1	0	0	0	0	0	0	0	**41**
9:00 PM	5	33	4	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
Total	**35**	**1,730**	**343**	**0**	**30**	**26**	**0**	**4**	**0**	**1**	**0**	**0**	**1**	**2,170**
Percent	**1.6%**	**79.7%**	**15.8%**	**0.0%**	**1.4%**	**1.2%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 07

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	5	6	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	11
1:00 AM	3	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4
2:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
5:00 AM	8	11	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	11	19
6:00 AM	17	46	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	46	63
7:00 AM	72	**176**	**248**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	**176**	**248**
8:00 AM	56	172	228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	172	228
9:00 AM	62	95	157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	95	157
10:00 AM	62	117	179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	117	179
11:00 AM	**74**	112	186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**74**	112	186
12:00 PM	115	135	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	135	250
1:00 PM	104	121	225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	121	225
2:00 PM	116	171	287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	171	287
3:00 PM	103	182	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	182	285
4:00 PM	133	**235**	**368**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	**235**	**368**
5:00 PM	**134**	200	334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**134**	200	334
6:00 PM	86	162	248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	162	248
7:00 PM	61	102	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	102	163
8:00 PM	36	41	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	41	77
9:00 PM	31	42	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	42	73
10:00 PM	14	19	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	19	33
11:00 PM	3	18	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	18	21
Total	1,300	2,170	3,470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,300	2,170	3,470
Percent	37%	63%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37%	63%	-
AM Peak	11:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	07:00
Vol.	74	176	248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	176	248
PM Peak	17:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	16:00
Vol.	134	235	368	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	235	368

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: A St, B/W 2nd St & 5th St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 08

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	31	2,130	274	0	69	8	0	1	0	1	0	0	0	2,514
Percent	1.2%	84.7%	10.9%	0.0%	2.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	50	1,362	273	0	49	23	0	0	0	1	0	0	0	1,758
Percent	2.8%	77.5%	15.5%	0.0%	2.8%	1.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	81	3,492	547	0	118	31	0	1	0	2	0	0	0	4,272
Percent	1.9%	81.7%	12.8%	0.0%	2.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	10	1	0	1	1	0	0	0	0	0	0	0	**13**
6:00 AM	0	37	7	0	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	85	16	0	5	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	149	17	0	4	2	0	0	0	0	0	0	0	**172**
9:00 AM	1	119	18	0	8	0	0	0	0	0	0	0	0	**146**
10:00 AM	2	143	20	0	0	2	0	0	0	0	0	0	0	**167**
11:00 AM	3	164	22	0	5	2	0	0	0	0	0	0	0	**196**
12:00 PM	3	196	25	0	8	0	0	0	0	0	0	0	0	**232**
1:00 PM	3	165	19	0	3	0	0	0	0	0	0	0	0	**190**
2:00 PM	2	183	21	0	7	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	190	22	0	5	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	156	21	0	7	0	0	1	0	0	0	0	0	**189**
5:00 PM	3	183	20	0	7	1	0	0	0	0	0	0	0	**214**
6:00 PM	4	123	18	0	2	0	0	0	0	1	0	0	0	**148**
7:00 PM	2	84	12	0	3	0	0	0	0	0	0	0	0	**101**
8:00 PM	1	57	2	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	1	33	2	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	17	6	0	2	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
Total	**31**	**2,130**	**274**	**0**	**69**	**8**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2,514**
Percent	**1.2%**	**84.7%**	**10.9%**	**0.0%**	**2.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	3	4	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	2	15	19	0	1	3	0	0	0	0	0	0	0	**40**
7:00 AM	5	78	22	0	5	0	0	0	0	0	0	0	0	**110**
8:00 AM	4	67	14	0	5	2	0	0	0	0	0	0	0	**92**
9:00 AM	2	73	16	0	2	1	0	0	0	0	0	0	0	**94**
10:00 AM	5	67	15	0	5	4	0	0	0	1	0	0	0	**97**
11:00 AM	2	83	16	0	4	3	0	0	0	0	0	0	0	**108**
12:00 PM	3	102	25	0	3	2	0	0	0	0	0	0	0	**135**
1:00 PM	4	98	19	0	5	2	0	0	0	0	0	0	0	**128**
2:00 PM	7	111	16	0	2	2	0	0	0	0	0	0	0	**138**
3:00 PM	2	114	24	0	2	0	0	0	0	0	0	0	0	**142**
4:00 PM	5	121	20	0	5	2	0	0	0	0	0	0	0	**153**
5:00 PM	2	148	21	0	4	1	0	0	0	0	0	0	0	**176**
6:00 PM	1	98	9	0	3	0	0	0	0	0	0	0	0	**111**
7:00 PM	3	63	10	0	1	0	0	0	0	0	0	0	0	**77**
8:00 PM	1	51	9	0	0	1	0	0	0	0	0	0	0	**62**
9:00 PM	1	35	5	0	2	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
Total	**50**	**1,362**	**273**	**0**	**49**	**23**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1,758**
Percent	**2.8%**	**77.5%**	**15.5%**	**0.0%**	**2.8%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	10	1	0	1	1	0	0	0	0	0	0	0	**13**
6:00 AM	0	37	7	0	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	85	16	0	5	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	149	17	0	4	2	0	0	0	0	0	0	0	**172**
9:00 AM	1	119	18	0	8	0	0	0	0	0	0	0	0	**146**
10:00 AM	2	143	20	0	0	2	0	0	0	0	0	0	0	**167**
11:00 AM	3	164	22	0	5	2	0	0	0	0	0	0	0	**196**
12:00 PM	3	196	25	0	8	0	0	0	0	0	0	0	0	**232**
1:00 PM	3	165	19	0	3	0	0	0	0	0	0	0	0	**190**
2:00 PM	2	183	21	0	7	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	190	22	0	5	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	156	21	0	7	0	0	1	0	0	0	0	0	**189**
5:00 PM	3	183	20	0	7	1	0	0	0	0	0	0	0	**214**
6:00 PM	4	123	18	0	2	0	0	0	0	1	0	0	0	**148**
7:00 PM	2	84	12	0	3	0	0	0	0	0	0	0	0	**101**
8:00 PM	1	57	2	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	1	33	2	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	17	6	0	2	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
Total	**31**	**2,130**	**274**	**0**	**69**	**8**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2,514**
Percent	**1.2%**	**84.7%**	**10.9%**	**0.0%**	**2.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	3	4	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	2	15	19	0	1	3	0	0	0	0	0	0	0	**40**
7:00 AM	5	78	22	0	5	0	0	0	0	0	0	0	0	**110**
8:00 AM	4	67	14	0	5	2	0	0	0	0	0	0	0	**92**
9:00 AM	2	73	16	0	2	1	0	0	0	0	0	0	0	**94**
10:00 AM	5	67	15	0	5	4	0	0	0	1	0	0	0	**97**
11:00 AM	2	83	16	0	4	3	0	0	0	0	0	0	0	**108**
12:00 PM	3	102	25	0	3	2	0	0	0	0	0	0	0	**135**
1:00 PM	4	98	19	0	5	2	0	0	0	0	0	0	0	**128**
2:00 PM	7	111	16	0	2	2	0	0	0	0	0	0	0	**138**
3:00 PM	2	114	24	0	2	0	0	0	0	0	0	0	0	**142**
4:00 PM	5	121	20	0	5	2	0	0	0	0	0	0	0	**153**
5:00 PM	2	148	21	0	4	1	0	0	0	0	0	0	0	**176**
6:00 PM	1	98	9	0	3	0	0	0	0	0	0	0	0	**111**
7:00 PM	3	63	10	0	1	0	0	0	0	0	0	0	0	**77**
8:00 PM	1	51	9	0	0	1	0	0	0	0	0	0	0	**62**
9:00 PM	1	35	5	0	2	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
Total	**50**	**1,362**	**273**	**0**	**49**	**23**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1,758**
Percent	**2.8%**	**77.5%**	**15.5%**	**0.0%**	**2.8%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	10	1	0	1	1	0	0	0	0	0	0	0	**13**
6:00 AM	0	37	7	0	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	85	16	0	5	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	149	17	0	4	2	0	0	0	0	0	0	0	**172**
9:00 AM	1	119	18	0	8	0	0	0	0	0	0	0	0	**146**
10:00 AM	2	143	20	0	0	2	0	0	0	0	0	0	0	**167**
11:00 AM	3	164	22	0	5	2	0	0	0	0	0	0	0	**196**
12:00 PM	3	196	25	0	8	0	0	0	0	0	0	0	0	**232**
1:00 PM	3	165	19	0	3	0	0	0	0	0	0	0	0	**190**
2:00 PM	2	183	21	0	7	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	190	22	0	5	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	156	21	0	7	0	0	1	0	0	0	0	0	**189**
5:00 PM	3	183	20	0	7	1	0	0	0	0	0	0	0	**214**
6:00 PM	4	123	18	0	2	0	0	0	0	1	0	0	0	**148**
7:00 PM	2	84	12	0	3	0	0	0	0	0	0	0	0	**101**
8:00 PM	1	57	2	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	1	33	2	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	17	6	0	2	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
Total	**31**	**2,130**	**274**	**0**	**69**	**8**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2,514**
Percent	**1.2%**	**84.7%**	**10.9%**	**0.0%**	**2.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	3	4	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	2	15	19	0	1	3	0	0	0	0	0	0	0	**40**
7:00 AM	5	78	22	0	5	0	0	0	0	0	0	0	0	**110**
8:00 AM	4	67	14	0	5	2	0	0	0	0	0	0	0	**92**
9:00 AM	2	73	16	0	2	1	0	0	0	0	0	0	0	**94**
10:00 AM	5	67	15	0	5	4	0	0	0	1	0	0	0	**97**
11:00 AM	2	83	16	0	4	3	0	0	0	0	0	0	0	**108**
12:00 PM	3	102	25	0	3	2	0	0	0	0	0	0	0	**135**
1:00 PM	4	98	19	0	5	2	0	0	0	0	0	0	0	**128**
2:00 PM	7	111	16	0	2	2	0	0	0	0	0	0	0	**138**
3:00 PM	2	114	24	0	2	0	0	0	0	0	0	0	0	**142**
4:00 PM	5	121	20	0	5	2	0	0	0	0	0	0	0	**153**
5:00 PM	2	148	21	0	4	1	0	0	0	0	0	0	0	**176**
6:00 PM	1	98	9	0	3	0	0	0	0	0	0	0	0	**111**
7:00 PM	3	63	10	0	1	0	0	0	0	0	0	0	0	**77**
8:00 PM	1	51	9	0	0	1	0	0	0	0	0	0	0	**62**
9:00 PM	1	35	5	0	2	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
Total	**50**	**1,362**	**273**	**0**	**49**	**23**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1,758**
Percent	**2.8%**	**77.5%**	**15.5%**	**0.0%**	**2.8%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 08

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	11	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	3	14
1:00 AM	3	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	8
2:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
3:00 AM	3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	3
4:00 AM	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	6
5:00 AM	13	8	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	8	21
6:00 AM	45	40	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	40	85
7:00 AM	106	**110**	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	**110**	216
8:00 AM	172	92	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	92	264
9:00 AM	146	94	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	94	240
10:00 AM	167	97	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	167	97	264
11:00 AM	**196**	108	**304**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**196**	108	**304**
12:00 PM	**232**	135	367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**232**	135	367
1:00 PM	190	128	318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	128	318
2:00 PM	213	138	351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	213	138	351
3:00 PM	219	142	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	219	142	361
4:00 PM	189	153	342	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189	153	342
5:00 PM	214	**176**	**390**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	**176**	**390**
6:00 PM	148	111	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	111	259
7:00 PM	101	77	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	77	178
8:00 PM	60	62	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	62	122
9:00 PM	36	43	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	43	79
10:00 PM	25	28	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	28	53
11:00 PM	18	4	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	4	22
Total	2,514	1,758	4,272	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,514	1,758	4,272
Percent	59%	41%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59%	41%	-
AM Peak	11:00	07:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	11:00
Vol.	196	110	304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	110	304
PM Peak	12:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	17:00	17:00
Vol.	232	176	390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	176	390

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Andersen Dr, B/W 2nd St & Bellam Blvd

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 09

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	93	3,581	1,002	10	500	15	0	2	0	0	2	0	0	5,205
Percent	1.8%	68.8%	19.3%	0.2%	9.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	113	2,878	882	2	323	20	0	2	0	1	0	0	2	4,223
Percent	2.7%	68.2%	20.9%	0.0%	7.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	206	6,459	1,884	12	823	35	0	4	0	1	2	0	2	9,428
Percent	2.2%	68.5%	20.0%	0.1%	8.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	2	5	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	1	7	0	0	2	1	0	0	0	0	0	0	0	**11**
4:00 AM	0	9	1	1	1	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	26	5	1	11	3	0	0	0	0	0	0	0	**46**
6:00 AM	3	64	26	4	29	0	0	0	0	0	0	0	0	**126**
7:00 AM	1	182	80	4	44	2	0	0	0	0	0	0	0	**313**
8:00 AM	2	206	103	0	61	0	0	0	0	0	0	0	0	**372**
9:00 AM	2	205	78	0	41	1	0	0	0	0	0	0	0	**327**
10:00 AM	0	218	89	0	38	2	0	0	0	0	0	0	0	**347**
11:00 AM	3	289	72	0	46	2	0	1	0	0	0	0	0	**413**
12:00 PM	6	277	88	0	32	1	0	0	0	0	0	0	0	**404**
1:00 PM	5	304	76	0	30	1	0	0	0	0	1	0	0	**417**
2:00 PM	5	319	86	0	34	1	0	1	0	0	1	0	0	**447**
3:00 PM	10	307	54	0	44	1	0	0	0	0	0	0	0	**416**
4:00 PM	8	296	84	0	30	0	0	0	0	0	0	0	0	**418**
5:00 PM	15	309	63	0	23	0	0	0	0	0	0	0	0	**410**
6:00 PM	16	225	33	0	18	0	0	0	0	0	0	0	0	**292**
7:00 PM	6	156	35	0	8	0	0	0	0	0	0	0	0	**205**
8:00 PM	3	105	13	0	5	0	0	0	0	0	0	0	0	**126**
9:00 PM	4	52	13	0	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	1	4	1	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
Total	**93**	**3,581**	**1,002**	**10**	**500**	**15**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**5,205**
Percent	**1.8%**	**68.8%**	**19.3%**	**0.2%**	**9.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	0	0	3	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
5:00 AM	1	21	9	0	2	2	0	1	0	0	0	0	0	**36**
6:00 AM	12	65	38	0	19	0	0	0	0	0	0	0	0	**134**
7:00 AM	20	189	107	0	29	3	0	0	0	0	0	0	0	**348**
8:00 AM	21	262	97	0	38	0	0	0	0	0	0	0	1	**419**
9:00 AM	12	157	78	0	31	0	0	0	0	0	0	0	0	**278**
10:00 AM	3	200	62	0	28	2	0	0	0	1	0	0	1	**297**
11:00 AM	2	216	67	0	31	1	0	0	0	0	0	0	0	**317**
12:00 PM	7	210	60	0	14	2	0	0	0	0	0	0	0	**293**
1:00 PM	1	204	67	0	22	5	0	0	0	0	0	0	0	**299**
2:00 PM	9	232	47	0	20	2	0	0	0	0	0	0	0	**310**
3:00 PM	4	249	77	0	25	1	0	0	0	0	0	0	0	**356**
4:00 PM	7	237	61	0	24	1	0	1	0	0	0	0	0	**331**
5:00 PM	3	257	44	1	19	0	0	0	0	0	0	0	0	**324**
6:00 PM	6	125	25	1	2	0	0	0	0	0	0	0	0	**159**
7:00 PM	1	78	25	0	5	1	0	0	0	0	0	0	0	**110**
8:00 PM	0	63	4	0	3	0	0	0	0	0	0	0	0	**70**
9:00 PM	1	41	8	0	3	0	0	0	0	0	0	0	0	**53**
10:00 PM	3	19	3	0	2	0	0	0	0	0	0	0	0	**27**
11:00 PM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
Total	**113**	**2,878**	**882**	**2**	**323**	**20**	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**4,223**
Percent	**2.7%**	**68.2%**	**20.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	2	5	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	1	7	0	0	2	1	0	0	0	0	0	0	0	**11**
4:00 AM	0	9	1	1	1	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	26	5	1	11	3	0	0	0	0	0	0	0	**46**
6:00 AM	3	64	26	4	29	0	0	0	0	0	0	0	0	**126**
7:00 AM	1	182	80	4	44	2	0	0	0	0	0	0	0	**313**
8:00 AM	2	206	103	0	61	0	0	0	0	0	0	0	0	**372**
9:00 AM	2	205	78	0	41	1	0	0	0	0	0	0	0	**327**
10:00 AM	0	218	89	0	38	2	0	0	0	0	0	0	0	**347**
11:00 AM	3	289	72	0	46	2	0	1	0	0	0	0	0	**413**
12:00 PM	6	277	88	0	32	1	0	0	0	0	0	0	0	**404**
1:00 PM	5	304	76	0	30	1	0	0	0	0	1	0	0	**417**
2:00 PM	5	319	86	0	34	1	0	1	0	0	1	0	0	**447**
3:00 PM	10	307	54	0	44	1	0	0	0	0	0	0	0	**416**
4:00 PM	8	296	84	0	30	0	0	0	0	0	0	0	0	**418**
5:00 PM	15	309	63	0	23	0	0	0	0	0	0	0	0	**410**
6:00 PM	16	225	33	0	18	0	0	0	0	0	0	0	0	**292**
7:00 PM	6	156	35	0	8	0	0	0	0	0	0	0	0	**205**
8:00 PM	3	105	13	0	5	0	0	0	0	0	0	0	0	**126**
9:00 PM	4	52	13	0	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	1	4	1	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
Total	**93**	**3,581**	**1,002**	**10**	**500**	**15**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**5,205**
Percent	**1.8%**	**68.8%**	**19.3%**	**0.2%**	**9.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	0	0	3	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
5:00 AM	1	21	9	0	2	2	0	1	0	0	0	0	0	**36**
6:00 AM	12	65	38	0	19	0	0	0	0	0	0	0	0	**134**
7:00 AM	20	189	107	0	29	3	0	0	0	0	0	0	0	**348**
8:00 AM	21	262	97	0	38	0	0	0	0	0	0	0	1	**419**
9:00 AM	12	157	78	0	31	0	0	0	0	0	0	0	0	**278**
10:00 AM	3	200	62	0	28	2	0	0	0	1	0	0	1	**297**
11:00 AM	2	216	67	0	31	1	0	0	0	0	0	0	0	**317**
12:00 PM	7	210	60	0	14	2	0	0	0	0	0	0	0	**293**
1:00 PM	1	204	67	0	22	5	0	0	0	0	0	0	0	**299**
2:00 PM	9	232	47	0	20	2	0	0	0	0	0	0	0	**310**
3:00 PM	4	249	77	0	25	1	0	0	0	0	0	0	0	**356**
4:00 PM	7	237	61	0	24	1	0	1	0	0	0	0	0	**331**
5:00 PM	3	257	44	1	19	0	0	0	0	0	0	0	0	**324**
6:00 PM	6	125	25	1	2	0	0	0	0	0	0	0	0	**159**
7:00 PM	1	78	25	0	5	1	0	0	0	0	0	0	0	**110**
8:00 PM	0	63	4	0	3	0	0	0	0	0	0	0	0	**70**
9:00 PM	1	41	8	0	3	0	0	0	0	0	0	0	0	**53**
10:00 PM	3	19	3	0	2	0	0	0	0	0	0	0	0	**27**
11:00 PM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
Total	**113**	**2,878**	**882**	**2**	**323**	**20**	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**4,223**
Percent	**2.7%**	**68.2%**	**20.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	2	5	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	1	7	0	0	2	1	0	0	0	0	0	0	0	**11**
4:00 AM	0	9	1	1	1	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	26	5	1	11	3	0	0	0	0	0	0	0	**46**
6:00 AM	3	64	26	4	29	0	0	0	0	0	0	0	0	**126**
7:00 AM	1	182	80	4	44	2	0	0	0	0	0	0	0	**313**
8:00 AM	2	206	103	0	61	0	0	0	0	0	0	0	0	**372**
9:00 AM	2	205	78	0	41	1	0	0	0	0	0	0	0	**327**
10:00 AM	0	218	89	0	38	2	0	0	0	0	0	0	0	**347**
11:00 AM	3	289	72	0	46	2	0	1	0	0	0	0	0	**413**
12:00 PM	6	277	88	0	32	1	0	0	0	0	0	0	0	**404**
1:00 PM	5	304	76	0	30	1	0	0	0	0	1	0	0	**417**
2:00 PM	5	319	86	0	34	1	0	1	0	0	1	0	0	**447**
3:00 PM	10	307	54	0	44	1	0	0	0	0	0	0	0	**416**
4:00 PM	8	296	84	0	30	0	0	0	0	0	0	0	0	**418**
5:00 PM	15	309	63	0	23	0	0	0	0	0	0	0	0	**410**
6:00 PM	16	225	33	0	18	0	0	0	0	0	0	0	0	**292**
7:00 PM	6	156	35	0	8	0	0	0	0	0	0	0	0	**205**
8:00 PM	3	105	13	0	5	0	0	0	0	0	0	0	0	**126**
9:00 PM	4	52	13	0	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	1	4	1	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
Total	**93**	**3,581**	**1,002**	**10**	**500**	**15**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**5,205**
Percent	**1.8%**	**68.8%**	**19.3%**	**0.2%**	**9.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	0	0	3	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
5:00 AM	1	21	9	0	2	2	0	1	0	0	0	0	0	**36**
6:00 AM	12	65	38	0	19	0	0	0	0	0	0	0	0	**134**
7:00 AM	20	189	107	0	29	3	0	0	0	0	0	0	0	**348**
8:00 AM	21	262	97	0	38	0	0	0	0	0	0	0	1	**419**
9:00 AM	12	157	78	0	31	0	0	0	0	0	0	0	0	**278**
10:00 AM	3	200	62	0	28	2	0	0	0	1	0	0	1	**297**
11:00 AM	2	216	67	0	31	1	0	0	0	0	0	0	0	**317**
12:00 PM	7	210	60	0	14	2	0	0	0	0	0	0	0	**293**
1:00 PM	1	204	67	0	22	5	0	0	0	0	0	0	0	**299**
2:00 PM	9	232	47	0	20	2	0	0	0	0	0	0	0	**310**
3:00 PM	4	249	77	0	25	1	0	0	0	0	0	0	0	**356**
4:00 PM	7	237	61	0	24	1	0	1	0	0	0	0	0	**331**
5:00 PM	3	257	44	1	19	0	0	0	0	0	0	0	0	**324**
6:00 PM	6	125	25	1	2	0	0	0	0	0	0	0	0	**159**
7:00 PM	1	78	25	0	5	1	0	0	0	0	0	0	0	**110**
8:00 PM	0	63	4	0	3	0	0	0	0	0	0	0	0	**70**
9:00 PM	1	41	8	0	3	0	0	0	0	0	0	0	0	**53**
10:00 PM	3	19	3	0	2	0	0	0	0	0	0	0	0	**27**
11:00 PM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
Total	**113**	**2,878**	**882**	**2**	**323**	**20**	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**4,223**
Percent	**2.7%**	**68.2%**	**20.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 - 5/14/2019
Site Code: 09

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	8	10	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	18
1:00 AM	7	8	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	15
2:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
3:00 AM	11	12	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	12	23
4:00 AM	12	8	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	8	20
5:00 AM	46	36	82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	36	82
6:00 AM	126	134	260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	126	134	260
7:00 AM	313	348	661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	313	348	661
8:00 AM	372	**419**	**791**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	372	**419**	**791**
9:00 AM	327	278	605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	278	605
10:00 AM	347	297	644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	347	297	644
11:00 AM	**413**	317	730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**413**	317	730
12:00 PM	404	293	697	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	293	697
1:00 PM	417	299	716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	417	299	716
2:00 PM	**447**	310	757	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**447**	310	757
3:00 PM	416	**356**	**772**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	416	**356**	**772**
4:00 PM	418	331	749	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	418	331	749
5:00 PM	410	324	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	410	324	734
6:00 PM	292	159	451	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292	159	451
7:00 PM	205	110	315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	205	110	315
8:00 PM	126	70	196	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	126	70	196
9:00 PM	70	53	123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	53	123
10:00 PM	8	27	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	27	35
11:00 PM	5	17	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	17	22
Total	5,205	4,223	9,428	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,205	4,223	9,428
Percent	55%	45%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55%	45%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	413	419	791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413	419	791
PM Peak	14:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:00	15:00	15:00
Vol.	447	356	772	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	447	356	772

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Andersen Dr, B/W Bellam & Sir Francis Drake

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 10

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	13	2,722	1,154	75	523	75	0	3	74	2	2	0	4	4,647
Percent	0.3%	58.6%	24.8%	1.6%	11.3%	1.6%	0.0%	0.1%	1.6%	0.0%	0.0%	0.0%	0.1%	100%
Southbound	30	1,955	850	88	590	37	0	2	23	1	1	0	2	3,579
Percent	0.8%	54.6%	23.7%	2.5%	16.5%	1.0%	0.0%	0.1%	0.6%	0.0%	0.0%	0.0%	0.1%	100%
Total	43	4,677	2,004	163	1,113	112	0	5	97	3	3	0	6	8,226
Percent	0.5%	56.9%	24.4%	2.0%	13.5%	1.4%	0.0%	0.1%	1.2%	0.0%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	5	1	0	0	0	0	3	0	0	0	0	**22**
1:00 AM	0	8	2	0	1	0	0	0	2	0	0	0	0	**13**
2:00 AM	0	8	1	1	0	0	0	0	2	0	0	0	0	**12**
3:00 AM	0	6	1	0	9	3	0	0	3	0	0	0	0	**22**
4:00 AM	0	10	6	3	6	8	0	0	3	0	1	0	0	**37**
5:00 AM	0	48	11	5	32	9	0	0	9	0	1	0	1	**116**
6:00 AM	2	122	83	13	64	11	0	1	6	0	0	0	2	**304**
7:00 AM	0	149	159	12	64	8	0	0	4	1	0	0	0	**397**
8:00 AM	3	141	134	1	41	5	0	0	9	1	0	0	0	**335**
9:00 AM	0	164	95	2	37	7	0	0	6	0	0	0	0	**311**
10:00 AM	1	201	89	1	42	4	0	0	6	0	0	0	0	**344**
11:00 AM	0	208	81	2	48	9	0	0	4	0	0	0	0	**352**
12:00 PM	0	216	88	4	32	5	0	0	9	0	0	0	1	**355**
1:00 PM	0	175	91	6	38	2	0	0	1	0	0	0	0	**313**
2:00 PM	1	218	77	3	35	2	0	0	2	0	0	0	0	**338**
3:00 PM	2	266	89	5	32	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	224	67	2	11	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	187	34	0	10	0	0	0	1	0	0	0	0	**232**
6:00 PM	1	123	11	2	9	0	0	0	2	0	0	0	0	**148**
7:00 PM	3	79	7	3	3	0	0	1	0	0	0	0	0	**96**
8:00 PM	0	49	7	2	2	0	0	0	1	0	0	0	0	**61**
9:00 PM	0	52	6	2	4	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	31	6	2	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	24	4	3	1	0	0	1	1	0	0	0	0	**34**
Total	**13**	**2,722**	**1,154**	**75**	**523**	**75**	**0**	**3**	**74**	**2**	**2**	**0**	**4**	**4,647**
Percent	**0.3%**	**58.6%**	**24.8%**	**1.6%**	**11.3%**	**1.6%**	**0.0%**	**0.1%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	12	5	2	7	0	0	0	1	0	0	0	0	**28**
1:00 AM	0	9	1	1	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	5	1	0	5	1	0	0	1	0	1	0	0	**14**
3:00 AM	1	37	6	1	3	0	0	0	0	0	0	0	0	**48**
4:00 AM	0	50	16	1	3	2	0	0	1	0	0	0	0	**73**
5:00 AM	7	108	30	3	33	2	0	0	1	0	0	0	0	**184**
6:00 AM	3	153	96	2	62	4	0	0	2	0	0	0	0	**322**
7:00 AM	1	142	97	0	74	3	0	0	2	0	0	0	1	**320**
8:00 AM	1	119	71	3	43	5	0	1	3	0	0	0	0	**246**
9:00 AM	1	122	62	5	45	1	0	0	2	0	0	0	0	**238**
10:00 AM	0	148	72	2	51	3	0	0	2	0	0	0	0	**278**
11:00 AM	0	132	57	3	49	3	0	0	1	1	0	0	0	**246**
12:00 PM	6	156	71	6	42	5	0	0	2	0	0	0	0	**288**
1:00 PM	2	132	52	3	28	3	0	0	1	0	0	0	1	**222**
2:00 PM	1	144	43	1	42	0	0	0	0	0	0	0	0	**231**
3:00 PM	1	111	57	2	34	5	0	0	0	0	0	0	0	**210**
4:00 PM	0	93	41	4	14	0	0	0	2	0	0	0	0	**154**
5:00 PM	1	95	16	5	11	0	0	0	1	0	0	0	0	**129**
6:00 PM	0	50	26	16	16	0	0	0	0	0	0	0	0	**108**
7:00 PM	0	34	14	16	10	0	0	0	0	0	0	0	0	**74**
8:00 PM	3	32	6	3	8	0	0	0	1	0	0	0	0	**53**
9:00 PM	0	38	5	4	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	1	23	3	3	2	0	0	1	0	0	0	0	0	**33**
11:00 PM	0	10	2	2	4	0	0	0	0	0	0	0	0	**18**
Total	**30**	**1,955**	**850**	**88**	**590**	**37**	**0**	**2**	**23**	**1**	**1**	**0**	**2**	**3,579**
Percent	**0.8%**	**54.6%**	**23.7%**	**2.5%**	**16.5%**	**1.0%**	**0.0%**	**0.1%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	5	1	0	0	0	0	3	0	0	0	0	**22**
1:00 AM	0	8	2	0	1	0	0	0	2	0	0	0	0	**13**
2:00 AM	0	8	1	1	0	0	0	0	2	0	0	0	0	**12**
3:00 AM	0	6	1	0	9	3	0	0	3	0	0	0	0	**22**
4:00 AM	0	10	6	3	6	8	0	0	3	0	1	0	0	**37**
5:00 AM	0	48	11	5	32	9	0	0	9	0	1	0	1	**116**
6:00 AM	2	122	83	13	64	11	0	1	6	0	0	0	2	**304**
7:00 AM	0	149	159	12	64	8	0	0	4	1	0	0	0	**397**
8:00 AM	3	141	134	1	41	5	0	0	9	1	0	0	0	**335**
9:00 AM	0	164	95	2	37	7	0	0	6	0	0	0	0	**311**
10:00 AM	1	201	89	1	42	4	0	0	6	0	0	0	0	**344**
11:00 AM	0	208	81	2	48	9	0	0	4	0	0	0	0	**352**
12:00 PM	0	216	88	4	32	5	0	0	9	0	0	0	1	**355**
1:00 PM	0	175	91	6	38	2	0	0	1	0	0	0	0	**313**
2:00 PM	1	218	77	3	35	2	0	0	2	0	0	0	0	**338**
3:00 PM	2	266	89	5	32	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	224	67	2	11	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	187	34	0	10	0	0	0	1	0	0	0	0	**232**
6:00 PM	1	123	11	2	9	0	0	0	2	0	0	0	0	**148**
7:00 PM	3	79	7	3	3	0	0	1	0	0	0	0	0	**96**
8:00 PM	0	49	7	2	2	0	0	0	1	0	0	0	0	**61**
9:00 PM	0	52	6	2	4	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	31	6	2	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	24	4	3	1	0	0	1	1	0	0	0	0	**34**
Total	**13**	**2,722**	**1,154**	**75**	**523**	**75**	**0**	**3**	**74**	**2**	**2**	**0**	**4**	**4,647**
Percent	**0.3%**	**58.6%**	**24.8%**	**1.6%**	**11.3%**	**1.6%**	**0.0%**	**0.1%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	12	5	2	7	0	0	0	1	0	0	0	0	**28**
1:00 AM	0	9	1	1	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	5	1	0	5	1	0	0	1	0	1	0	0	**14**
3:00 AM	1	37	6	1	3	0	0	0	0	0	0	0	0	**48**
4:00 AM	0	50	16	1	3	2	0	0	1	0	0	0	0	**73**
5:00 AM	7	108	30	3	33	2	0	0	1	0	0	0	0	**184**
6:00 AM	3	153	96	2	62	4	0	0	2	0	0	0	0	**322**
7:00 AM	1	142	97	0	74	3	0	0	2	0	0	0	1	**320**
8:00 AM	1	119	71	3	43	5	0	1	3	0	0	0	0	**246**
9:00 AM	1	122	62	5	45	1	0	0	2	0	0	0	0	**238**
10:00 AM	0	148	72	2	51	3	0	0	2	0	0	0	0	**278**
11:00 AM	0	132	57	3	49	3	0	0	1	1	0	0	0	**246**
12:00 PM	6	156	71	6	42	5	0	0	2	0	0	0	0	**288**
1:00 PM	2	132	52	3	28	3	0	0	1	0	0	0	1	**222**
2:00 PM	1	144	43	1	42	0	0	0	0	0	0	0	0	**231**
3:00 PM	1	111	57	2	34	5	0	0	0	0	0	0	0	**210**
4:00 PM	0	93	41	4	14	0	0	0	2	0	0	0	0	**154**
5:00 PM	1	95	16	5	11	0	0	0	1	0	0	0	0	**129**
6:00 PM	0	50	26	16	16	0	0	0	0	0	0	0	0	**108**
7:00 PM	0	34	14	16	10	0	0	0	0	0	0	0	0	**74**
8:00 PM	3	32	6	3	8	0	0	0	1	0	0	0	0	**53**
9:00 PM	0	38	5	4	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	1	23	3	3	2	0	0	1	0	0	0	0	0	**33**
11:00 PM	0	10	2	2	4	0	0	0	0	0	0	0	0	**18**
Total	**30**	**1,955**	**850**	**88**	**590**	**37**	**0**	**2**	**23**	**1**	**1**	**0**	**2**	**3,579**
Percent	**0.8%**	**54.6%**	**23.7%**	**2.5%**	**16.5%**	**1.0%**	**0.0%**	**0.1%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	5	1	0	0	0	0	3	0	0	0	0	**22**
1:00 AM	0	8	2	0	1	0	0	0	2	0	0	0	0	**13**
2:00 AM	0	8	1	1	0	0	0	0	2	0	0	0	0	**12**
3:00 AM	0	6	1	0	9	3	0	0	3	0	0	0	0	**22**
4:00 AM	0	10	6	3	6	8	0	0	3	0	1	0	0	**37**
5:00 AM	0	48	11	5	32	9	0	0	9	0	1	0	1	**116**
6:00 AM	2	122	83	13	64	11	0	1	6	0	0	0	2	**304**
7:00 AM	0	149	159	12	64	8	0	0	4	1	0	0	0	**397**
8:00 AM	3	141	134	1	41	5	0	0	9	1	0	0	0	**335**
9:00 AM	0	164	95	2	37	7	0	0	6	0	0	0	0	**311**
10:00 AM	1	201	89	1	42	4	0	0	6	0	0	0	0	**344**
11:00 AM	0	208	81	2	48	9	0	0	4	0	0	0	0	**352**
12:00 PM	0	216	88	4	32	5	0	0	9	0	0	0	1	**355**
1:00 PM	0	175	91	6	38	2	0	0	1	0	0	0	0	**313**
2:00 PM	1	218	77	3	35	2	0	0	2	0	0	0	0	**338**
3:00 PM	2	266	89	5	32	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	224	67	2	11	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	187	34	0	10	0	0	0	1	0	0	0	0	**232**
6:00 PM	1	123	11	2	9	0	0	0	2	0	0	0	0	**148**
7:00 PM	3	79	7	3	3	0	0	1	0	0	0	0	0	**96**
8:00 PM	0	49	7	2	2	0	0	0	1	0	0	0	0	**61**
9:00 PM	0	52	6	2	4	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	31	6	2	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	24	4	3	1	0	0	1	1	0	0	0	0	**34**
Total	**13**	**2,722**	**1,154**	**75**	**523**	**75**	**0**	**3**	**74**	**2**	**2**	**0**	**4**	**4,647**
Percent	**0.3%**	**58.6%**	**24.8%**	**1.6%**	**11.3%**	**1.6%**	**0.0%**	**0.1%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	12	5	2	7	0	0	0	1	0	0	0	0	**28**
1:00 AM	0	9	1	1	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	5	1	0	5	1	0	0	1	0	1	0	0	**14**
3:00 AM	1	37	6	1	3	0	0	0	0	0	0	0	0	**48**
4:00 AM	0	50	16	1	3	2	0	0	1	0	0	0	0	**73**
5:00 AM	7	108	30	3	33	2	0	0	1	0	0	0	0	**184**
6:00 AM	3	153	96	2	62	4	0	0	2	0	0	0	0	**322**
7:00 AM	1	142	97	0	74	3	0	0	2	0	0	0	1	**320**
8:00 AM	1	119	71	3	43	5	0	1	3	0	0	0	0	**246**
9:00 AM	1	122	62	5	45	1	0	0	2	0	0	0	0	**238**
10:00 AM	0	148	72	2	51	3	0	0	2	0	0	0	0	**278**
11:00 AM	0	132	57	3	49	3	0	0	1	1	0	0	0	**246**
12:00 PM	6	156	71	6	42	5	0	0	2	0	0	0	0	**288**
1:00 PM	2	132	52	3	28	3	0	0	1	0	0	0	1	**222**
2:00 PM	1	144	43	1	42	0	0	0	0	0	0	0	0	**231**
3:00 PM	1	111	57	2	34	5	0	0	0	0	0	0	0	**210**
4:00 PM	0	93	41	4	14	0	0	0	2	0	0	0	0	**154**
5:00 PM	1	95	16	5	11	0	0	0	1	0	0	0	0	**129**
6:00 PM	0	50	26	16	16	0	0	0	0	0	0	0	0	**108**
7:00 PM	0	34	14	16	10	0	0	0	0	0	0	0	0	**74**
8:00 PM	3	32	6	3	8	0	0	0	1	0	0	0	0	**53**
9:00 PM	0	38	5	4	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	1	23	3	3	2	0	0	1	0	0	0	0	0	**33**
11:00 PM	0	10	2	2	4	0	0	0	0	0	0	0	0	**18**
Total	**30**	**1,955**	**850**	**88**	**590**	**37**	**0**	**2**	**23**	**1**	**1**	**0**	**2**	**3,579**
Percent	**0.8%**	**54.6%**	**23.7%**	**2.5%**	**16.5%**	**1.0%**	**0.0%**	**0.1%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 - 5/1/2019
Site Code: 10

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	22	28	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	28	50
1:00 AM	13	11	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	11	24
2:00 AM	12	14	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	14	26
3:00 AM	22	48	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	48	70
4:00 AM	37	73	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	73	110
5:00 AM	116	184	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	184	300
6:00 AM	304	**322**	626	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	304	**322**	626
7:00 AM	**397**	320	**717**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**397**	320	**717**
8:00 AM	335	246	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	335	246	581
9:00 AM	311	238	549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	311	238	549
10:00 AM	344	278	622	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344	278	622
11:00 AM	352	246	598	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	352	246	598
12:00 PM	355	**288**	**643**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	**288**	**643**
1:00 PM	313	222	535	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	313	222	535
2:00 PM	338	231	569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	338	231	569
3:00 PM	**395**	210	605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**395**	210	605
4:00 PM	305	154	459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305	154	459
5:00 PM	232	129	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	129	361
6:00 PM	148	108	256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	108	256
7:00 PM	96	74	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	74	170
8:00 PM	61	53	114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	53	114
9:00 PM	64	51	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	51	115
10:00 PM	41	33	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	33	74
11:00 PM	34	18	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	18	52
Total	4,647	3,579	8,226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,647	3,579	8,226
Percent	56%	44%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56%	44%	-
AM Peak	07:00	06:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	06:00	07:00
Vol.	397	322	717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	397	322	717
PM Peak	15:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	12:00	12:00
Vol.	395	288	643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	395	288	643

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Bellam Blvd, B/W Andersen & Kerner

Count Direction: Eastbound / Westbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 11

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	95	7,949	2,388	59	747	97	0	14	83	10	7	0	10	11,459
Percent	0.8%	69.4%	20.8%	0.5%	6.5%	0.8%	0.0%	0.1%	0.7%	0.1%	0.1%	0.0%	0.1%	100%
Westbound	111	12,674	3,502	64	854	128	0	19	108	104	16	4	96	17,680
Percent	0.6%	71.7%	19.8%	0.4%	4.8%	0.7%	0.0%	0.1%	0.6%	0.6%	0.1%	0.0%	0.5%	100%
Total	206	20,623	5,890	123	1,601	225	0	33	191	114	23	4	106	29,139
Percent	0.7%	70.8%	20.2%	0.4%	5.5%	0.8%	0.0%	0.1%	0.7%	0.4%	0.1%	0.0%	0.4%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Wednesday, April 24, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	100	14	1	3	1	0	0	2	0	0	0	0	**122**
1:00 AM	1	43	6	0	1	1	0	0	5	0	0	0	0	**57**
2:00 AM	0	35	7	0	3	0	0	1	3	0	0	0	0	**49**
3:00 AM	1	30	5	0	10	4	0	0	5	0	0	0	0	**55**
4:00 AM	2	25	9	3	8	3	0	1	6	0	0	0	0	**57**
5:00 AM	3	51	28	1	20	10	0	1	7	0	0	0	0	**121**
6:00 AM	6	126	84	6	55	10	0	0	10	0	0	0	0	**297**
7:00 AM	3	340	167	3	54	7	0	0	8	1	0	0	2	**585**
8:00 AM	5	379	180	4	58	8	0	1	4	0	1	0	0	**640**
9:00 AM	4	370	154	2	47	4	0	0	4	0	0	0	4	**589**
10:00 AM	7	442	138	1	44	5	0	1	7	2	2	0	0	**649**
11:00 AM	6	489	182	1	76	10	0	2	4	2	3	0	1	**776**
12:00 PM	3	550	158	5	60	11	0	1	6	0	0	0	0	**794**
1:00 PM	6	568	147	4	52	6	0	0	3	0	1	0	0	**787**
2:00 PM	12	631	187	4	56	4	0	0	2	0	0	0	1	**897**
3:00 PM	4	692	214	8	63	5	0	1	1	1	0	0	0	**989**
4:00 PM	7	726	241	1	58	4	0	1	0	3	0	0	0	**1,041**
5:00 PM	8	721	179	2	36	2	0	0	1	1	0	0	2	**952**
6:00 PM	9	496	105	2	14	1	0	0	2	0	0	0	0	**629**
7:00 PM	4	321	69	1	12	0	0	3	1	0	0	0	0	**411**
8:00 PM	0	298	46	2	8	1	0	0	1	0	0	0	0	**356**
9:00 PM	3	279	42	3	3	0	0	0	0	0	0	0	0	**330**
10:00 PM	0	176	17	2	4	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	61	9	3	2	0	0	1	1	0	0	0	0	**77**
Total	**95**	**7,949**	**2,388**	**59**	**747**	**97**	**0**	**14**	**83**	**10**	**7**	**0**	**10**	**11,459**
Percent	**0.8%**	**69.4%**	**20.8%**	**0.5%**	**6.5%**	**0.8%**	**0.0%**	**0.1%**	**0.7%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Wednesday, April 24, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	30	7	2	4	0	0	0	4	0	0	0	0	**47**
1:00 AM	2	20	5	0	3	1	0	1	1	0	0	0	0	**33**
2:00 AM	0	25	2	2	2	0	0	0	3	0	0	0	0	**34**
3:00 AM	2	65	12	2	5	0	0	0	3	0	0	0	0	**89**
4:00 AM	5	76	25	2	9	6	0	0	6	0	0	0	1	**130**
5:00 AM	4	268	98	3	33	9	0	3	6	1	0	0	1	**426**
6:00 AM	6	614	303	2	53	8	0	0	10	4	1	0	5	**1,006**
7:00 AM	15	940	333	2	57	12	0	2	7	18	0	1	16	**1,403**
8:00 AM	16	913	253	4	80	16	0	3	12	9	2	0	10	**1,318**
9:00 AM	4	763	260	6	67	6	0	2	10	9	3	0	3	**1,133**
10:00 AM	8	856	272	4	83	9	0	0	9	7	1	1	7	**1,257**
11:00 AM	7	957	215	7	78	13	0	2	2	0	4	0	5	**1,290**
12:00 PM	7	917	258	1	64	11	0	2	2	7	2	1	3	**1,275**
1:00 PM	6	886	237	2	69	11	0	0	2	7	0	0	7	**1,227**
2:00 PM	6	811	217	2	68	9	0	1	8	5	0	0	6	**1,133**
3:00 PM	4	725	207	2	48	6	0	0	5	7	0	0	5	**1,009**
4:00 PM	4	653	177	1	32	3	0	1	3	11	2	1	6	**894**
5:00 PM	5	666	157	0	15	4	0	0	5	4	1	0	15	**872**
6:00 PM	5	591	123	11	24	3	0	1	4	9	0	0	3	**774**
7:00 PM	1	549	121	7	17	0	0	1	0	2	0	0	3	**701**
8:00 PM	3	487	85	1	17	0	0	0	2	2	0	0	0	**597**
9:00 PM	1	292	63	1	6	0	0	0	0	1	0	0	0	**364**
10:00 PM	0	326	40	0	11	0	0	0	0	1	0	0	0	**378**
11:00 PM	0	244	32	0	9	1	0	0	4	0	0	0	0	**290**
Total	**111**	**12,674**	**3,502**	**64**	**854**	**128**	**0**	**19**	**108**	**104**	**16**	**4**	**96**	**17,680**
Percent	**0.6%**	**71.7%**	**19.8%**	**0.4%**	**4.8%**	**0.7%**	**0.0%**	**0.1%**	**0.6%**	**0.6%**	**0.1%**	**0.0%**	**0.5%**	

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	1	100	14	1	3	1	0	0	2	0	0	0	0	**122**
1:00 AM	1	43	6	0	1	1	0	0	5	0	0	0	0	**57**
2:00 AM	0	35	7	0	3	0	0	1	3	0	0	0	0	**49**
3:00 AM	1	30	5	0	10	4	0	0	5	0	0	0	0	**55**
4:00 AM	2	25	9	3	8	3	0	1	6	0	0	0	0	**57**
5:00 AM	3	51	28	1	20	10	0	1	7	0	0	0	0	**121**
6:00 AM	6	126	84	6	55	10	0	0	10	0	0	0	0	**297**
7:00 AM	3	340	167	3	54	7	0	0	8	1	0	0	2	**585**
8:00 AM	5	379	180	4	58	8	0	1	4	0	1	0	0	**640**
9:00 AM	4	370	154	2	47	4	0	0	4	0	0	0	4	**589**
10:00 AM	7	442	138	1	44	5	0	1	7	2	2	0	0	**649**
11:00 AM	6	489	182	1	76	10	0	2	4	2	3	0	1	**776**
12:00 PM	3	550	158	5	60	11	0	1	6	0	0	0	0	**794**
1:00 PM	6	568	147	4	52	6	0	0	3	0	1	0	0	**787**
2:00 PM	12	631	187	4	56	4	0	0	2	0	0	0	1	**897**
3:00 PM	4	692	214	8	63	5	0	1	1	1	0	0	0	**989**
4:00 PM	7	726	241	1	58	4	0	1	0	3	0	0	0	**1,041**
5:00 PM	8	721	179	2	36	2	0	0	1	1	0	0	2	**952**
6:00 PM	9	496	105	2	14	1	0	0	2	0	0	0	0	**629**
7:00 PM	4	321	69	1	12	0	0	3	1	0	0	0	0	**411**
8:00 PM	0	298	46	2	8	1	0	0	1	0	0	0	0	**356**
9:00 PM	3	279	42	3	3	0	0	0	0	0	0	0	0	**330**
10:00 PM	0	176	17	2	4	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	61	9	3	2	0	0	1	1	0	0	0	0	**77**
Total	**95**	**7,949**	**2,388**	**59**	**747**	**97**	**0**	**14**	**83**	**10**	**7**	**0**	**10**	**11,459**
Percent	**0.8%**	**69.4%**	**20.8%**	**0.5%**	**6.5%**	**0.8%**	**0.0%**	**0.1%**	**0.7%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	30	7	2	4	0	0	0	4	0	0	0	0	**47**
1:00 AM	2	20	5	0	3	1	0	1	1	0	0	0	0	**33**
2:00 AM	0	25	2	2	2	0	0	0	3	0	0	0	0	**34**
3:00 AM	2	65	12	2	5	0	0	0	3	0	0	0	0	**89**
4:00 AM	5	76	25	2	9	6	0	0	6	0	0	0	1	**130**
5:00 AM	4	268	98	3	33	9	0	3	6	1	0	0	1	**426**
6:00 AM	6	614	303	2	53	8	0	0	10	4	1	0	5	**1,006**
7:00 AM	15	940	333	2	57	12	0	2	7	18	0	1	16	**1,403**
8:00 AM	16	913	253	4	80	16	0	3	12	9	2	0	10	**1,318**
9:00 AM	4	763	260	6	67	6	0	2	10	9	3	0	3	**1,133**
10:00 AM	8	856	272	4	83	9	0	0	9	7	1	1	7	**1,257**
11:00 AM	7	957	215	7	78	13	0	2	2	0	4	0	5	**1,290**
12:00 PM	7	917	258	1	64	11	0	2	2	7	2	1	3	**1,275**
1:00 PM	6	886	237	2	69	11	0	0	2	7	0	0	7	**1,227**
2:00 PM	6	811	217	2	68	9	0	1	8	5	0	0	6	**1,133**
3:00 PM	4	725	207	2	48	6	0	0	5	7	0	0	5	**1,009**
4:00 PM	4	653	177	1	32	3	0	1	3	11	2	1	6	**894**
5:00 PM	5	666	157	0	15	4	0	0	5	4	1	0	15	**872**
6:00 PM	5	591	123	11	24	3	0	1	4	9	0	0	3	**774**
7:00 PM	1	549	121	7	17	0	0	1	0	2	0	0	3	**701**
8:00 PM	3	487	85	1	17	0	0	0	2	2	0	0	0	**597**
9:00 PM	1	292	63	1	6	0	0	0	0	1	0	0	0	**364**
10:00 PM	0	326	40	0	11	0	0	0	0	1	0	0	0	**378**
11:00 PM	0	244	32	0	9	1	0	0	4	0	0	0	0	**290**
Total	**111**	**12,674**	**3,502**	**64**	**854**	**128**	**0**	**19**	**108**	**104**	**16**	**4**	**96**	**17,680**
Percent	**0.6%**	**71.7%**	**19.8%**	**0.4%**	**4.8%**	**0.7%**	**0.0%**	**0.1%**	**0.6%**	**0.6%**	**0.1%**	**0.0%**	**0.5%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	100	14	1	3	1	0	0	2	0	0	0	0	**122**
1:00 AM	1	43	6	0	1	1	0	0	5	0	0	0	0	**57**
2:00 AM	0	35	7	0	3	0	0	1	3	0	0	0	0	**49**
3:00 AM	1	30	5	0	10	4	0	0	5	0	0	0	0	**55**
4:00 AM	2	25	9	3	8	3	0	1	6	0	0	0	0	**57**
5:00 AM	3	51	28	1	20	10	0	1	7	0	0	0	0	**121**
6:00 AM	6	126	84	6	55	10	0	0	10	0	0	0	0	**297**
7:00 AM	3	340	167	3	54	7	0	0	8	1	0	0	2	**585**
8:00 AM	5	379	180	4	58	8	0	1	4	0	1	0	0	**640**
9:00 AM	4	370	154	2	47	4	0	0	4	0	0	0	4	**589**
10:00 AM	7	442	138	1	44	5	0	1	7	2	2	0	0	**649**
11:00 AM	6	489	182	1	76	10	0	2	4	2	3	0	1	**776**
12:00 PM	3	550	158	5	60	11	0	1	6	0	0	0	0	**794**
1:00 PM	6	568	147	4	52	6	0	0	3	0	1	0	0	**787**
2:00 PM	12	631	187	4	56	4	0	0	2	0	0	0	1	**897**
3:00 PM	4	692	214	8	63	5	0	1	1	1	0	0	0	**989**
4:00 PM	7	726	241	1	58	4	0	1	0	3	0	0	0	**1,041**
5:00 PM	8	721	179	2	36	2	0	0	1	1	0	0	2	**952**
6:00 PM	9	496	105	2	14	1	0	0	2	0	0	0	0	**629**
7:00 PM	4	321	69	1	12	0	0	3	1	0	0	0	0	**411**
8:00 PM	0	298	46	2	8	1	0	0	1	0	0	0	0	**356**
9:00 PM	3	279	42	3	3	0	0	0	0	0	0	0	0	**330**
10:00 PM	0	176	17	2	4	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	61	9	3	2	0	0	1	1	0	0	0	0	**77**
Total	**95**	**7,949**	**2,388**	**59**	**747**	**97**	**0**	**14**	**83**	**10**	**7**	**0**	**10**	**11,459**
Percent	**0.8%**	**69.4%**	**20.8%**	**0.5%**	**6.5%**	**0.8%**	**0.0%**	**0.1%**	**0.7%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	30	7	2	4	0	0	0	4	0	0	0	0	**47**
1:00 AM	2	20	5	0	3	1	0	1	1	0	0	0	0	**33**
2:00 AM	0	25	2	2	2	0	0	0	3	0	0	0	0	**34**
3:00 AM	2	65	12	2	5	0	0	0	3	0	0	0	0	**89**
4:00 AM	5	76	25	2	9	6	0	0	6	0	0	0	1	**130**
5:00 AM	4	268	98	3	33	9	0	3	6	1	0	0	1	**426**
6:00 AM	6	614	303	2	53	8	0	0	10	4	1	0	5	**1,006**
7:00 AM	15	940	333	2	57	12	0	2	7	18	0	1	16	**1,403**
8:00 AM	16	913	253	4	80	16	0	3	12	9	2	0	10	**1,318**
9:00 AM	4	763	260	6	67	6	0	2	10	9	3	0	3	**1,133**
10:00 AM	8	856	272	4	83	9	0	0	9	7	1	1	7	**1,257**
11:00 AM	7	957	215	7	78	13	0	2	2	0	4	0	5	**1,290**
12:00 PM	7	917	258	1	64	11	0	2	2	7	2	1	3	**1,275**
1:00 PM	6	886	237	2	69	11	0	0	2	7	0	0	7	**1,227**
2:00 PM	6	811	217	2	68	9	0	1	8	5	0	0	6	**1,133**
3:00 PM	4	725	207	2	48	6	0	0	5	7	0	0	5	**1,009**
4:00 PM	4	653	177	1	32	3	0	1	3	11	2	1	6	**894**
5:00 PM	5	666	157	0	15	4	0	0	5	4	1	0	15	**872**
6:00 PM	5	591	123	11	24	3	0	1	4	9	0	0	3	**774**
7:00 PM	1	549	121	7	17	0	0	1	0	2	0	0	3	**701**
8:00 PM	3	487	85	1	17	0	0	0	2	2	0	0	0	**597**
9:00 PM	1	292	63	1	6	0	0	0	0	1	0	0	0	**364**
10:00 PM	0	326	40	0	11	0	0	0	0	1	0	0	0	**378**
11:00 PM	0	244	32	0	9	1	0	0	4	0	0	0	0	**290**
Total	**111**	**12,674**	**3,502**	**64**	**854**	**128**	**0**	**19**	**108**	**104**	**16**	**4**	**96**	**17,680**
Percent	**0.6%**	**71.7%**	**19.8%**	**0.4%**	**4.8%**	**0.7%**	**0.0%**	**0.1%**	**0.6%**	**0.6%**	**0.1%**	**0.0%**	**0.5%**	

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 - 4/30/2019
Site Code: 11

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	122	47	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	47	169
1:00 AM	57	33	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	33	90
2:00 AM	49	34	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	34	83
3:00 AM	55	89	144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	89	144
4:00 AM	57	130	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	130	187
5:00 AM	121	426	547	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	426	547
6:00 AM	297	1,006	1,303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	297	1,006	1,303
7:00 AM	585	**1,403**	1,988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	585	**1,403**	1,988
8:00 AM	640	1,318	1,958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	640	1,318	1,958
9:00 AM	589	1,133	1,722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	589	1,133	1,722
10:00 AM	649	1,257	1,906	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	649	1,257	1,906
11:00 AM	**776**	1,290	**2,066**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**776**	1,290	**2,066**
12:00 PM	794	**1,275**	**2,069**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	794	**1,275**	**2,069**
1:00 PM	787	1,227	2,014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	787	1,227	2,014
2:00 PM	897	1,133	2,030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	897	1,133	2,030
3:00 PM	989	1,009	1,998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	989	1,009	1,998
4:00 PM	**1,041**	894	1,935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,041**	894	1,935
5:00 PM	952	872	1,824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	952	872	1,824
6:00 PM	629	774	1,403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	629	774	1,403
7:00 PM	411	701	1,112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	411	701	1,112
8:00 PM	356	597	953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	356	597	953
9:00 PM	330	364	694	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	364	694
10:00 PM	199	378	577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	378	577
11:00 PM	77	290	367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	290	367
Total	11,459	17,680	29,139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,459	17,680	29,139
Percent	39%	61%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39%	61%	-
AM Peak	11:00	07:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	11:00
Vol.	776	1,403	2,066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	776	1,403	2,066
PM Peak	16:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	12:00	12:00
Vol.	1,041	1,275	2,069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,041	1,275	2,069

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Civic Center, B/W Freitas & Merrydale O/C

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 12

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	28	4,671	696	0	245	8	0	1	3	4	0	0	3	5,659
Percent	0.5%	82.5%	12.3%	0.0%	4.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%
Southbound	28	6,007	627	0	153	11	0	1	10	0	0	0	0	6,837
Percent	0.4%	87.9%	9.2%	0.0%	2.2%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	56	10,678	1,323	0	398	19	0	2	13	4	0	0	3	12,496
Percent	0.4%	85.5%	10.6%	0.0%	3.2%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	19	4	0	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	6	0	8	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	131	21	0	18	1	0	0	0	0	0	0	0	**172**
8:00 AM	2	212	27	0	12	0	0	0	1	0	0	0	0	**254**
9:00 AM	1	250	47	0	16	1	0	0	0	1	0	0	0	**316**
10:00 AM	2	284	56	0	19	1	0	0	0	0	0	0	1	**363**
11:00 AM	1	343	54	0	20	1	0	0	0	1	0	0	0	**420**
12:00 PM	2	397	65	0	27	0	0	0	0	1	0	0	1	**493**
1:00 PM	3	298	54	0	28	0	0	0	1	0	0	0	0	**384**
2:00 PM	2	320	74	0	17	1	0	0	0	0	0	0	0	**414**
3:00 PM	2	365	40	0	22	0	0	0	0	1	0	0	0	**430**
4:00 PM	2	455	65	0	11	1	0	0	1	0	0	0	1	**536**
5:00 PM	4	459	49	0	11	2	0	1	0	0	0	0	0	**526**
6:00 PM	0	269	30	0	10	0	0	0	0	0	0	0	0	**309**
7:00 PM	3	203	27	0	5	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	145	15	0	3	0	0	0	0	0	0	0	0	**164**
9:00 PM	1	339	34	0	5	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	52	15	0	5	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	40	4	0	3	0	0	0	0	0	0	0	0	**47**
Total	**28**	**4,671**	**696**	**0**	**245**	**8**	**0**	**1**	**3**	**4**	**0**	**0**	**3**	**5,659**
Percent	**0.5%**	**82.5%**	**12.3%**	**0.0%**	**4.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	2	0	1	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	8	3	0	0	1	0	0	1	0	0	0	0	**13**
5:00 AM	1	88	18	0	10	2	0	0	2	0	0	0	0	**121**
6:00 AM	4	170	30	0	10	1	0	0	2	0	0	0	0	**217**
7:00 AM	3	387	46	0	20	0	0	1	0	0	0	0	0	**457**
8:00 AM	1	469	49	0	16	2	0	0	0	0	0	0	0	**537**
9:00 AM	3	445	47	0	13	0	0	0	2	0	0	0	0	**510**
10:00 AM	2	370	35	0	5	1	0	0	0	0	0	0	0	**413**
11:00 AM	2	367	38	0	9	1	0	0	0	0	0	0	0	**417**
12:00 PM	0	411	49	0	6	0	0	0	1	0	0	0	0	**467**
1:00 PM	1	365	28	0	7	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	358	31	0	3	0	0	0	0	0	0	0	0	**392**
3:00 PM	3	397	43	0	5	1	0	0	0	0	0	0	0	**449**
4:00 PM	2	419	48	0	11	1	0	0	1	0	0	0	0	**482**
5:00 PM	2	506	51	0	10	0	0	0	0	0	0	0	0	**569**
6:00 PM	1	471	38	0	9	1	0	0	0	0	0	0	0	**520**
7:00 PM	1	356	24	0	4	0	0	0	0	0	0	0	0	**385**
8:00 PM	1	176	21	0	9	0	0	0	0	0	0	0	0	**207**
9:00 PM	1	130	13	0	2	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	67	9	0	1	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
Total	**28**	**6,007**	**627**	**0**	**153**	**11**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.4%**	**87.9%**	**9.2%**	**0.0%**	**2.2%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	19	4	0	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	6	0	8	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	131	21	0	18	1	0	0	0	0	0	0	0	**172**
8:00 AM	2	212	27	0	12	0	0	0	1	0	0	0	0	**254**
9:00 AM	1	250	47	0	16	1	0	0	0	1	0	0	0	**316**
10:00 AM	2	284	56	0	19	1	0	0	0	0	0	0	1	**363**
11:00 AM	1	343	54	0	20	1	0	0	0	1	0	0	0	**420**
12:00 PM	2	397	65	0	27	0	0	0	0	1	0	0	1	**493**
1:00 PM	3	298	54	0	28	0	0	0	1	0	0	0	0	**384**
2:00 PM	2	320	74	0	17	1	0	0	0	0	0	0	0	**414**
3:00 PM	2	365	40	0	22	0	0	0	0	1	0	0	0	**430**
4:00 PM	2	455	65	0	11	1	0	0	1	0	0	0	1	**536**
5:00 PM	4	459	49	0	11	2	0	1	0	0	0	0	0	**526**
6:00 PM	0	269	30	0	10	0	0	0	0	0	0	0	0	**309**
7:00 PM	3	203	27	0	5	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	145	15	0	3	0	0	0	0	0	0	0	0	**164**
9:00 PM	1	339	34	0	5	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	52	15	0	5	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	40	4	0	3	0	0	0	0	0	0	0	0	**47**
Total	**28**	**4,671**	**696**	**0**	**245**	**8**	**0**	**1**	**3**	**4**	**0**	**0**	**3**	**5,659**
Percent	**0.5%**	**82.5%**	**12.3%**	**0.0%**	**4.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	2	0	1	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	8	3	0	0	1	0	0	1	0	0	0	0	**13**
5:00 AM	1	88	18	0	10	2	0	0	2	0	0	0	0	**121**
6:00 AM	4	170	30	0	10	1	0	0	2	0	0	0	0	**217**
7:00 AM	3	387	46	0	20	0	0	1	0	0	0	0	0	**457**
8:00 AM	1	469	49	0	16	2	0	0	0	0	0	0	0	**537**
9:00 AM	3	445	47	0	13	0	0	0	2	0	0	0	0	**510**
10:00 AM	2	370	35	0	5	1	0	0	0	0	0	0	0	**413**
11:00 AM	2	367	38	0	9	1	0	0	0	0	0	0	0	**417**
12:00 PM	0	411	49	0	6	0	0	0	1	0	0	0	0	**467**
1:00 PM	1	365	28	0	7	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	358	31	0	3	0	0	0	0	0	0	0	0	**392**
3:00 PM	3	397	43	0	5	1	0	0	0	0	0	0	0	**449**
4:00 PM	2	419	48	0	11	1	0	0	1	0	0	0	0	**482**
5:00 PM	2	506	51	0	10	0	0	0	0	0	0	0	0	**569**
6:00 PM	1	471	38	0	9	1	0	0	0	0	0	0	0	**520**
7:00 PM	1	356	24	0	4	0	0	0	0	0	0	0	0	**385**
8:00 PM	1	176	21	0	9	0	0	0	0	0	0	0	0	**207**
9:00 PM	1	130	13	0	2	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	67	9	0	1	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
Total	**28**	**6,007**	**627**	**0**	**153**	**11**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.4%**	**87.9%**	**9.2%**	**0.0%**	**2.2%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	19	4	0	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	6	0	8	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	131	21	0	18	1	0	0	0	0	0	0	0	**172**
8:00 AM	2	212	27	0	12	0	0	0	1	0	0	0	0	**254**
9:00 AM	1	250	47	0	16	1	0	0	0	1	0	0	0	**316**
10:00 AM	2	284	56	0	19	1	0	0	0	0	0	0	1	**363**
11:00 AM	1	343	54	0	20	1	0	0	0	1	0	0	0	**420**
12:00 PM	2	397	65	0	27	0	0	0	0	1	0	0	1	**493**
1:00 PM	3	298	54	0	28	0	0	0	1	0	0	0	0	**384**
2:00 PM	2	320	74	0	17	1	0	0	0	0	0	0	0	**414**
3:00 PM	2	365	40	0	22	0	0	0	0	1	0	0	0	**430**
4:00 PM	2	455	65	0	11	1	0	0	1	0	0	0	1	**536**
5:00 PM	4	459	49	0	11	2	0	1	0	0	0	0	0	**526**
6:00 PM	0	269	30	0	10	0	0	0	0	0	0	0	0	**309**
7:00 PM	3	203	27	0	5	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	145	15	0	3	0	0	0	0	0	0	0	0	**164**
9:00 PM	1	339	34	0	5	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	52	15	0	5	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	40	4	0	3	0	0	0	0	0	0	0	0	**47**
Total	**28**	**4,671**	**696**	**0**	**245**	**8**	**0**	**1**	**3**	**4**	**0**	**0**	**3**	**5,659**
Percent	**0.5%**	**82.5%**	**12.3%**	**0.0%**	**4.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	2	0	1	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	8	3	0	0	1	0	0	1	0	0	0	0	**13**
5:00 AM	1	88	18	0	10	2	0	0	2	0	0	0	0	**121**
6:00 AM	4	170	30	0	10	1	0	0	2	0	0	0	0	**217**
7:00 AM	3	387	46	0	20	0	0	1	0	0	0	0	0	**457**
8:00 AM	1	469	49	0	16	2	0	0	0	0	0	0	0	**537**
9:00 AM	3	445	47	0	13	0	0	0	2	0	0	0	0	**510**
10:00 AM	2	370	35	0	5	1	0	0	0	0	0	0	0	**413**
11:00 AM	2	367	38	0	9	1	0	0	0	0	0	0	0	**417**
12:00 PM	0	411	49	0	6	0	0	0	1	0	0	0	0	**467**
1:00 PM	1	365	28	0	7	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	358	31	0	3	0	0	0	0	0	0	0	0	**392**
3:00 PM	3	397	43	0	5	1	0	0	0	0	0	0	0	**449**
4:00 PM	2	419	48	0	11	1	0	0	1	0	0	0	0	**482**
5:00 PM	2	506	51	0	10	0	0	0	0	0	0	0	0	**569**
6:00 PM	1	471	38	0	9	1	0	0	0	0	0	0	0	**520**
7:00 PM	1	356	24	0	4	0	0	0	0	0	0	0	0	**385**
8:00 PM	1	176	21	0	9	0	0	0	0	0	0	0	0	**207**
9:00 PM	1	130	13	0	2	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	67	9	0	1	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
Total	**28**	**6,007**	**627**	**0**	**153**	**11**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.4%**	**87.9%**	**9.2%**	**0.0%**	**2.2%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 - 5/1/2019
Site Code: 12

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	17	9	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	9	26
1:00 AM	8	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	5	13
2:00 AM	6	4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	4	10
3:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
4:00 AM	9	13	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	13	22
5:00 AM	26	121	147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	121	147
6:00 AM	73	217	290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	217	290
7:00 AM	172	457	629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	457	629
8:00 AM	254	**537**	791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254	**537**	791
9:00 AM	316	510	826	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	510	826
10:00 AM	363	413	776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	363	413	776
11:00 AM	**420**	417	**837**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**420**	417	**837**
12:00 PM	493	467	960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	493	467	960
1:00 PM	384	401	785	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	384	401	785
2:00 PM	414	392	806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	414	392	806
3:00 PM	430	449	879	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	430	449	879
4:00 PM	**536**	482	1,018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**536**	482	1,018
5:00 PM	526	**569**	**1,095**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	526	**569**	**1,095**
6:00 PM	309	520	829	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	309	520	829
7:00 PM	238	385	623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238	385	623
8:00 PM	164	207	371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	207	371
9:00 PM	379	146	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	379	146	525
10:00 PM	72	77	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	77	149
11:00 PM	47	35	82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	35	82
Total	5,659	6,837	12,496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,659	6,837	12,496
Percent	45%	55%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45%	55%	-
AM Peak	11:00	08:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	11:00
Vol.	420	537	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	537	837
PM Peak	16:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	17:00	17:00
Vol.	536	569	1,095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	536	569	1,095

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Civic Center, B/W Merrydale O/C & N San Pedro

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 13

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	48	3,022	348	0	99	2	0	1	3	1	0	0	0	3,524
Percent	1.4%	85.8%	9.9%	0.0%	2.8%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	18	3,330	592	2	206	5	0	0	6	0	0	0	0	4,159
Percent	0.4%	80.1%	14.2%	0.0%	5.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	66	6,352	940	2	305	7	0	1	9	1	0	0	0	7,683
Percent	0.9%	82.7%	12.2%	0.0%	4.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	1	12	4	0	4	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	42	18	0	8	0	0	0	0	0	0	0	0	**70**
7:00 AM	3	147	35	0	11	0	0	0	0	0	0	0	0	**196**
8:00 AM	5	278	24	0	5	0	0	0	0	0	0	0	0	**312**
9:00 AM	3	311	35	0	9	0	0	0	0	0	0	0	0	**358**
10:00 AM	5	250	28	0	9	0	0	0	0	0	0	0	0	**292**
11:00 AM	4	263	28	0	9	0	0	1	1	0	0	0	0	**306**
12:00 PM	1	226	26	0	9	0	0	0	1	0	0	0	0	**263**
1:00 PM	0	148	21	0	5	0	0	0	0	0	0	0	0	**174**
2:00 PM	4	145	23	0	8	0	0	0	0	0	0	0	0	**180**
3:00 PM	4	134	21	0	6	0	0	0	1	0	0	0	0	**166**
4:00 PM	4	150	20	0	3	1	0	0	0	0	0	0	0	**178**
5:00 PM	2	150	13	0	2	0	0	0	0	0	0	0	0	**167**
6:00 PM	4	292	18	0	5	0	0	0	0	0	0	0	0	**319**
7:00 PM	5	329	19	0	4	1	0	0	0	1	0	0	0	**359**
8:00 PM	1	69	7	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	30	3	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Total	**48**	**3,022**	**348**	**0**	**99**	**2**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**3,524**
Percent	**1.4%**	**85.8%**	**9.9%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	**7**
5:00 AM	0	14	4	0	0	0	0	0	1	0	0	0	0	**19**
6:00 AM	4	33	10	0	6	1	0	0	2	0	0	0	0	**56**
7:00 AM	2	153	28	1	20	2	0	0	0	0	0	0	0	**206**
8:00 AM	1	267	46	0	22	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	263	55	0	12	0	0	0	1	0	0	0	0	**331**
10:00 AM	2	229	50	0	12	0	0	0	0	0	0	0	0	**293**
11:00 AM	1	305	38	0	14	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	272	40	0	21	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	198	58	0	18	0	0	0	1	0	0	0	0	**275**
2:00 PM	2	192	36	0	13	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	172	32	0	13	0	0	0	0	0	0	0	0	**217**
4:00 PM	1	251	43	0	17	0	0	0	0	0	0	0	0	**312**
5:00 PM	2	292	52	1	20	0	0	0	0	0	0	0	0	**367**
6:00 PM	1	170	30	0	4	1	0	0	0	0	0	0	0	**206**
7:00 PM	1	141	14	0	4	1	0	0	0	0	0	0	0	**161**
8:00 PM	1	86	16	0	3	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	251	32	0	6	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	**15**
Total	**18**	**3,330**	**592**	**2**	**206**	**5**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**4,159**
Percent	**0.4%**	**80.1%**	**14.2%**	**0.0%**	**5.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	1	12	4	0	4	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	42	18	0	8	0	0	0	0	0	0	0	0	**70**
7:00 AM	3	147	35	0	11	0	0	0	0	0	0	0	0	**196**
8:00 AM	5	278	24	0	5	0	0	0	0	0	0	0	0	**312**
9:00 AM	3	311	35	0	9	0	0	0	0	0	0	0	0	**358**
10:00 AM	5	250	28	0	9	0	0	0	0	0	0	0	0	**292**
11:00 AM	4	263	28	0	9	0	0	1	1	0	0	0	0	**306**
12:00 PM	1	226	26	0	9	0	0	0	1	0	0	0	0	**263**
1:00 PM	0	148	21	0	5	0	0	0	0	0	0	0	0	**174**
2:00 PM	4	145	23	0	8	0	0	0	0	0	0	0	0	**180**
3:00 PM	4	134	21	0	6	0	0	0	1	0	0	0	0	**166**
4:00 PM	4	150	20	0	3	1	0	0	0	0	0	0	0	**178**
5:00 PM	2	150	13	0	2	0	0	0	0	0	0	0	0	**167**
6:00 PM	4	292	18	0	5	0	0	0	0	0	0	0	0	**319**
7:00 PM	5	329	19	0	4	1	0	0	0	1	0	0	0	**359**
8:00 PM	1	69	7	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	30	3	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Total	**48**	**3,022**	**348**	**0**	**99**	**2**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**3,524**
Percent	**1.4%**	**85.8%**	**9.9%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	**7**
5:00 AM	0	14	4	0	0	0	0	0	1	0	0	0	0	**19**
6:00 AM	4	33	10	0	6	1	0	0	2	0	0	0	0	**56**
7:00 AM	2	153	28	1	20	2	0	0	0	0	0	0	0	**206**
8:00 AM	1	267	46	0	22	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	263	55	0	12	0	0	0	1	0	0	0	0	**331**
10:00 AM	2	229	50	0	12	0	0	0	0	0	0	0	0	**293**
11:00 AM	1	305	38	0	14	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	272	40	0	21	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	198	58	0	18	0	0	0	1	0	0	0	0	**275**
2:00 PM	2	192	36	0	13	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	172	32	0	13	0	0	0	0	0	0	0	0	**217**
4:00 PM	1	251	43	0	17	0	0	0	0	0	0	0	0	**312**
5:00 PM	2	292	52	1	20	0	0	0	0	0	0	0	0	**367**
6:00 PM	1	170	30	0	4	1	0	0	0	0	0	0	0	**206**
7:00 PM	1	141	14	0	4	1	0	0	0	0	0	0	0	**161**
8:00 PM	1	86	16	0	3	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	251	32	0	6	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	**15**
Total	**18**	**3,330**	**592**	**2**	**206**	**5**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**4,159**
Percent	**0.4%**	**80.1%**	**14.2%**	**0.0%**	**5.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	1	12	4	0	4	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	42	18	0	8	0	0	0	0	0	0	0	0	**70**
7:00 AM	3	147	35	0	11	0	0	0	0	0	0	0	0	**196**
8:00 AM	5	278	24	0	5	0	0	0	0	0	0	0	0	**312**
9:00 AM	3	311	35	0	9	0	0	0	0	0	0	0	0	**358**
10:00 AM	5	250	28	0	9	0	0	0	0	0	0	0	0	**292**
11:00 AM	4	263	28	0	9	0	0	1	1	0	0	0	0	**306**
12:00 PM	1	226	26	0	9	0	0	0	1	0	0	0	0	**263**
1:00 PM	0	148	21	0	5	0	0	0	0	0	0	0	0	**174**
2:00 PM	4	145	23	0	8	0	0	0	0	0	0	0	0	**180**
3:00 PM	4	134	21	0	6	0	0	0	1	0	0	0	0	**166**
4:00 PM	4	150	20	0	3	1	0	0	0	0	0	0	0	**178**
5:00 PM	2	150	13	0	2	0	0	0	0	0	0	0	0	**167**
6:00 PM	4	292	18	0	5	0	0	0	0	0	0	0	0	**319**
7:00 PM	5	329	19	0	4	1	0	0	0	1	0	0	0	**359**
8:00 PM	1	69	7	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	30	3	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Total	**48**	**3,022**	**348**	**0**	**99**	**2**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**3,524**
Percent	**1.4%**	**85.8%**	**9.9%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	**7**
5:00 AM	0	14	4	0	0	0	0	0	1	0	0	0	0	**19**
6:00 AM	4	33	10	0	6	1	0	0	2	0	0	0	0	**56**
7:00 AM	2	153	28	1	20	2	0	0	0	0	0	0	0	**206**
8:00 AM	1	267	46	0	22	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	263	55	0	12	0	0	0	1	0	0	0	0	**331**
10:00 AM	2	229	50	0	12	0	0	0	0	0	0	0	0	**293**
11:00 AM	1	305	38	0	14	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	272	40	0	21	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	198	58	0	18	0	0	0	1	0	0	0	0	**275**
2:00 PM	2	192	36	0	13	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	172	32	0	13	0	0	0	0	0	0	0	0	**217**
4:00 PM	1	251	43	0	17	0	0	0	0	0	0	0	0	**312**
5:00 PM	2	292	52	1	20	0	0	0	0	0	0	0	0	**367**
6:00 PM	1	170	30	0	4	1	0	0	0	0	0	0	0	**206**
7:00 PM	1	141	14	0	4	1	0	0	0	0	0	0	0	**161**
8:00 PM	1	86	16	0	3	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	251	32	0	6	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	**15**
Total	**18**	**3,330**	**592**	**2**	**206**	**5**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**4,159**
Percent	**0.4%**	**80.1%**	**14.2%**	**0.0%**	**5.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 - 5/1/2019
Site Code: 13

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3	9
1:00 AM	5	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2	7
2:00 AM	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	6
3:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
4:00 AM	6	7	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	13
5:00 AM	21	19	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	19	40
6:00 AM	70	56	126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	56	126
7:00 AM	196	206	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	206	402
8:00 AM	312	336	648	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	336	648
9:00 AM	**358**	331	**689**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**358**	331	**689**
10:00 AM	292	293	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292	293	585
11:00 AM	306	**358**	664	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	306	**358**	664
12:00 PM	263	333	**596**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	263	333	**596**
1:00 PM	174	275	449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	174	275	449
2:00 PM	180	243	423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	243	423
3:00 PM	166	217	383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	217	383
4:00 PM	178	312	490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178	312	490
5:00 PM	167	**367**	534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	167	**367**	534
6:00 PM	319	206	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	319	206	525
7:00 PM	**359**	161	520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**359**	161	520
8:00 PM	77	106	183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	106	183
9:00 PM	33	289	322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	289	322
10:00 PM	21	20	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	20	41
11:00 PM	8	15	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	15	23
Total	3,524	4,159	7,683	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,524	4,159	7,683
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	09:00	11:00	09:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	09:00	11:00	09:00
Vol.	358	358	689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	358	358	689
PM Peak	19:00	17:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19:00	17:00	12:00
Vol.	359	367	596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	359	367	596

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: D St, B/W 4th St & Bayview St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 14

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	22	3,058	395	0	77	4	0	0	1	0	0	0	0	3,557
Percent	0.6%	86.0%	11.1%	0.0%	2.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	31	4,694	731	0	149	70	0	1	3	1	0	0	0	5,680
Percent	0.5%	82.6%	12.9%	0.0%	2.6%	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	53	7,752	1,126	0	226	74	0	1	4	1	0	0	0	9,237
Percent	0.6%	83.9%	12.2%	0.0%	2.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

DATA SOLUTIONS

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	36	5	0	0	1	0	0	0	0	0	0	0	**42**
6:00 AM	0	83	14	0	1	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	162	31	0	4	0	0	0	0	0	0	0	0	**198**
8:00 AM	1	158	20	0	2	0	0	0	0	0	0	0	0	**181**
9:00 AM	2	153	17	0	10	0	0	0	0	0	0	0	0	**182**
10:00 AM	3	139	22	0	5	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	166	32	0	3	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	207	27	0	5	0	0	0	0	0	0	0	0	**239**
1:00 PM	4	179	33	0	6	1	0	0	0	0	0	0	0	**223**
2:00 PM	0	233	28	0	14	0	0	0	0	0	0	0	0	**275**
3:00 PM	0	327	28	0	5	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	259	41	0	7	1	0	0	0	0	0	0	0	**310**
5:00 PM	0	273	30	0	9	0	0	0	0	0	0	0	0	**312**
6:00 PM	2	214	24	0	2	0	0	0	1	0	0	0	0	**243**
7:00 PM	1	160	12	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	132	8	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	3	82	8	0	2	0	0	0	0	0	0	0	0	**95**
10:00 PM	1	46	8	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	24	2	0	2	0	0	0	0	0	0	0	0	**28**
Total	**22**	**3,058**	**395**	**0**	**77**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3,557**
Percent	**0.6%**	**86.0%**	**11.1%**	**0.0%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

DATA SOLUTIONS

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	6	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	1	13	2	0	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	33	6	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	80	23	0	3	1	0	0	0	0	0	0	0	**107**
7:00 AM	0	313	79	0	8	0	0	0	0	0	0	0	0	**400**
8:00 AM	1	349	69	0	15	1	0	0	0	0	0	0	0	**435**
9:00 AM	1	258	54	0	11	4	0	0	0	0	0	0	0	**328**
10:00 AM	3	284	30	0	15	8	0	0	0	0	0	0	0	**340**
11:00 AM	0	250	39	0	11	4	0	0	0	0	0	0	0	**304**
12:00 PM	0	322	43	0	14	5	0	0	0	0	0	0	0	**384**
1:00 PM	3	318	55	0	7	7	0	0	0	0	0	0	0	**390**
2:00 PM	1	306	39	0	18	6	0	0	0	1	0	0	0	**371**
3:00 PM	2	360	50	0	11	4	0	0	1	0	0	0	0	**428**
4:00 PM	5	384	48	0	7	8	0	0	0	0	0	0	0	**452**
5:00 PM	4	386	54	0	9	11	0	1	1	0	0	0	0	**466**
6:00 PM	1	358	49	0	2	6	0	0	1	0	0	0	0	**417**
7:00 PM	3	219	29	0	9	2	0	0	0	0	0	0	0	**262**
8:00 PM	1	145	19	0	8	0	0	0	0	0	0	0	0	**173**
9:00 PM	3	154	18	0	1	3	0	0	0	0	0	0	0	**179**
10:00 PM	2	92	16	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	38	2	0	0	0	0	0	0	0	0	0	0	**40**
Total	**31**	**4,694**	**731**	**0**	**149**	**70**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5,680**
Percent	**0.5%**	**82.6%**	**12.9%**	**0.0%**	**2.6%**	**1.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	36	5	0	0	1	0	0	0	0	0	0	0	**42**
6:00 AM	0	83	14	0	1	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	162	31	0	4	0	0	0	0	0	0	0	0	**198**
8:00 AM	1	158	20	0	2	0	0	0	0	0	0	0	0	**181**
9:00 AM	2	153	17	0	10	0	0	0	0	0	0	0	0	**182**
10:00 AM	3	139	22	0	5	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	166	32	0	3	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	207	27	0	5	0	0	0	0	0	0	0	0	**239**
1:00 PM	4	179	33	0	6	1	0	0	0	0	0	0	0	**223**
2:00 PM	0	233	28	0	14	0	0	0	0	0	0	0	0	**275**
3:00 PM	0	327	28	0	5	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	259	41	0	7	1	0	0	0	0	0	0	0	**310**
5:00 PM	0	273	30	0	9	0	0	0	0	0	0	0	0	**312**
6:00 PM	2	214	24	0	2	0	0	0	1	0	0	0	0	**243**
7:00 PM	1	160	12	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	132	8	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	3	82	8	0	2	0	0	0	0	0	0	0	0	**95**
10:00 PM	1	46	8	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	24	2	0	2	0	0	0	0	0	0	0	0	**28**
Total	**22**	**3,058**	**395**	**0**	**77**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3,557**
Percent	**0.6%**	**86.0%**	**11.1%**	**0.0%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	6	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	1	13	2	0	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	33	6	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	80	23	0	3	1	0	0	0	0	0	0	0	**107**
7:00 AM	0	313	79	0	8	0	0	0	0	0	0	0	0	**400**
8:00 AM	1	349	69	0	15	1	0	0	0	0	0	0	0	**435**
9:00 AM	1	258	54	0	11	4	0	0	0	0	0	0	0	**328**
10:00 AM	3	284	30	0	15	8	0	0	0	0	0	0	0	**340**
11:00 AM	0	250	39	0	11	4	0	0	0	0	0	0	0	**304**
12:00 PM	0	322	43	0	14	5	0	0	0	0	0	0	0	**384**
1:00 PM	3	318	55	0	7	7	0	0	0	0	0	0	0	**390**
2:00 PM	1	306	39	0	18	6	0	0	0	1	0	0	0	**371**
3:00 PM	2	360	50	0	11	4	0	0	1	0	0	0	0	**428**
4:00 PM	5	384	48	0	7	8	0	0	0	0	0	0	0	**452**
5:00 PM	4	386	54	0	9	11	0	1	1	0	0	0	0	**466**
6:00 PM	1	358	49	0	2	6	0	0	1	0	0	0	0	**417**
7:00 PM	3	219	29	0	9	2	0	0	0	0	0	0	0	**262**
8:00 PM	1	145	19	0	8	0	0	0	0	0	0	0	0	**173**
9:00 PM	3	154	18	0	1	3	0	0	0	0	0	0	0	**179**
10:00 PM	2	92	16	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	38	2	0	0	0	0	0	0	0	0	0	0	**40**
Total	**31**	**4,694**	**731**	**0**	**149**	**70**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5,680**
Percent	**0.5%**	**82.6%**	**12.9%**	**0.0%**	**2.6%**	**1.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	36	5	0	0	1	0	0	0	0	0	0	0	**42**
6:00 AM	0	83	14	0	1	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	162	31	0	4	0	0	0	0	0	0	0	0	**198**
8:00 AM	1	158	20	0	2	0	0	0	0	0	0	0	0	**181**
9:00 AM	2	153	17	0	10	0	0	0	0	0	0	0	0	**182**
10:00 AM	3	139	22	0	5	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	166	32	0	3	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	207	27	0	5	0	0	0	0	0	0	0	0	**239**
1:00 PM	4	179	33	0	6	1	0	0	0	0	0	0	0	**223**
2:00 PM	0	233	28	0	14	0	0	0	0	0	0	0	0	**275**
3:00 PM	0	327	28	0	5	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	259	41	0	7	1	0	0	0	0	0	0	0	**310**
5:00 PM	0	273	30	0	9	0	0	0	0	0	0	0	0	**312**
6:00 PM	2	214	24	0	2	0	0	0	1	0	0	0	0	**243**
7:00 PM	1	160	12	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	132	8	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	3	82	8	0	2	0	0	0	0	0	0	0	0	**95**
10:00 PM	1	46	8	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	24	2	0	2	0	0	0	0	0	0	0	0	**28**
Total	**22**	**3,058**	**395**	**0**	**77**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3,557**
Percent	**0.6%**	**86.0%**	**11.1%**	**0.0%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

idax DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	6	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	1	13	2	0	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	33	6	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	80	23	0	3	1	0	0	0	0	0	0	0	**107**
7:00 AM	0	313	79	0	8	0	0	0	0	0	0	0	0	**400**
8:00 AM	1	349	69	0	15	1	0	0	0	0	0	0	0	**435**
9:00 AM	1	258	54	0	11	4	0	0	0	0	0	0	0	**328**
10:00 AM	3	284	30	0	15	8	0	0	0	0	0	0	0	**340**
11:00 AM	0	250	39	0	11	4	0	0	0	0	0	0	0	**304**
12:00 PM	0	322	43	0	14	5	0	0	0	0	0	0	0	**384**
1:00 PM	3	318	55	0	7	7	0	0	0	0	0	0	0	**390**
2:00 PM	1	306	39	0	18	6	0	0	0	1	0	0	0	**371**
3:00 PM	2	360	50	0	11	4	0	0	1	0	0	0	0	**428**
4:00 PM	5	384	48	0	7	8	0	0	0	0	0	0	0	**452**
5:00 PM	4	386	54	0	9	11	0	1	1	0	0	0	0	**466**
6:00 PM	1	358	49	0	2	6	0	0	1	0	0	0	0	**417**
7:00 PM	3	219	29	0	9	2	0	0	0	0	0	0	0	**262**
8:00 PM	1	145	19	0	8	0	0	0	0	0	0	0	0	**173**
9:00 PM	3	154	18	0	1	3	0	0	0	0	0	0	0	**179**
10:00 PM	2	92	16	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	38	2	0	0	0	0	0	0	0	0	0	0	**40**
Total	**31**	**4,694**	**731**	**0**	**149**	**70**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5,680**
Percent	**0.5%**	**82.6%**	**12.9%**	**0.0%**	**2.6%**	**1.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 14

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	9	24	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	24	33
1:00 AM	3	16	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	16	19
2:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
3:00 AM	6	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3	9
4:00 AM	10	9	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	9	19
5:00 AM	42	39	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	39	81
6:00 AM	98	107	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	107	205
7:00 AM	198	400	598	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	198	400	598
8:00 AM	181	**435**	**616**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	**435**	**616**
9:00 AM	182	328	510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	328	510
10:00 AM	169	340	509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	169	340	509
11:00 AM	**203**	304	507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**203**	304	507
12:00 PM	239	384	623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239	384	623
1:00 PM	223	390	613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	390	613
2:00 PM	275	371	646	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	371	646
3:00 PM	**361**	428	**789**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**361**	428	**789**
4:00 PM	310	452	762	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	310	452	762
5:00 PM	312	**466**	778	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	**466**	778
6:00 PM	243	417	660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	243	417	660
7:00 PM	173	262	435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	173	262	435
8:00 PM	140	173	313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	173	313
9:00 PM	95	179	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95	179	274
10:00 PM	55	110	165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	110	165
11:00 PM	28	40	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	40	68
Total	3,557	5,680	9,237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,557	5,680	9,237
Percent	39%	61%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39%	61%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	203	435	616	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203	435	616
PM Peak	15:00	17:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	15:00
Vol.	361	466	789	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	361	466	789

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Francisco Blvd E, B/W Grand & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 15

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	41	5,897	990	0	288	21	0	3	3	2	0	0	1	7,246
Percent	0.6%	81.4%	13.7%	0.0%	4.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	39	6,401	1,531	4	597	22	0	0	8	0	0	0	1	8,603
Percent	0.5%	74.4%	17.8%	0.0%	6.9%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	80	12,298	2,521	4	885	43	0	3	11	2	0	0	2	15,849
Percent	0.5%	77.6%	15.9%	0.0%	5.6%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	12	2	0	3	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	12	0	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	9	0	0	0	0	0	0	0	1	0	0	0	**10**
4:00 AM	0	16	2	0	3	2	0	0	0	0	0	0	0	**23**
5:00 AM	0	75	7	0	7	0	0	0	0	0	0	0	0	**89**
6:00 AM	3	171	65	0	12	3	0	0	0	0	0	0	0	**254**
7:00 AM	3	415	100	0	29	4	0	0	0	0	0	0	0	**551**
8:00 AM	2	338	80	0	27	2	0	2	0	0	0	0	0	**451**
9:00 AM	2	274	54	0	11	0	0	0	0	0	0	0	0	**341**
10:00 AM	1	295	47	0	22	1	0	0	0	0	0	0	1	**367**
11:00 AM	3	403	64	0	26	3	0	1	0	0	0	0	0	**500**
12:00 PM	0	436	68	0	24	0	0	0	0	0	0	0	0	**528**
1:00 PM	6	404	62	0	16	1	0	0	0	0	0	0	0	**489**
2:00 PM	2	441	61	0	19	0	0	0	2	0	0	0	0	**525**
3:00 PM	3	421	52	0	20	3	0	0	0	0	0	0	0	**499**
4:00 PM	3	470	53	0	16	1	0	0	0	0	0	0	0	**543**
5:00 PM	2	514	76	0	19	1	0	0	1	0	0	0	0	**613**
6:00 PM	3	347	64	0	10	0	0	0	0	0	0	0	0	**424**
7:00 PM	3	302	40	0	5	0	0	0	0	1	0	0	0	**351**
8:00 PM	1	203	35	0	5	0	0	0	0	0	0	0	0	**244**
9:00 PM	1	179	32	0	4	0	0	0	0	0	0	0	0	**216**
10:00 PM	1	115	23	0	5	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	42	2	0	4	0	0	0	0	0	0	0	0	**48**
Total	**41**	**5,897**	**990**	**0**	**288**	**21**	**0**	**3**	**3**	**2**	**0**	**0**	**1**	**7,246**
Percent	**0.6%**	**81.4%**	**13.7%**	**0.0%**	**4.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	3	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	15	2	0	2	0	0	0	0	0	0	0	0	**19**
2:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	0	**7**
4:00 AM	1	11	3	0	2	1	0	0	0	0	0	0	0	**18**
5:00 AM	1	43	5	0	8	0	0	0	0	0	0	0	0	**57**
6:00 AM	0	126	46	0	28	3	0	0	0	0	0	0	0	**203**
7:00 AM	7	255	66	0	32	2	0	0	0	0	0	0	0	**362**
8:00 AM	3	350	100	0	33	1	0	0	0	0	0	0	0	**487**
9:00 AM	3	326	76	0	40	2	0	0	2	0	0	0	0	**449**
10:00 AM	2	318	82	1	43	4	0	0	1	0	0	0	0	**451**
11:00 AM	3	406	91	1	35	1	0	0	1	0	0	0	0	**538**
12:00 PM	4	426	83	0	47	0	0	0	1	0	0	0	0	**561**
1:00 PM	2	457	88	1	56	4	0	0	0	0	0	0	0	**608**
2:00 PM	0	505	103	0	49	2	0	0	0	0	0	0	0	**659**
3:00 PM	4	528	126	0	43	0	0	0	0	0	0	0	0	**701**
4:00 PM	1	583	179	1	49	0	0	0	0	0	0	0	1	**814**
5:00 PM	2	624	154	0	48	1	0	0	0	0	0	0	0	**829**
6:00 PM	3	474	103	0	27	1	0	0	1	0	0	0	0	**609**
7:00 PM	1	330	91	0	17	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	251	64	0	22	0	0	0	0	0	0	0	0	**337**
9:00 PM	2	182	38	0	6	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	116	22	0	3	0	0	0	1	0	0	0	0	**142**
11:00 PM	0	50	6	0	2	0	0	0	0	0	0	0	0	**58**
Total	**39**	**6,401**	**1,531**	**4**	**597**	**22**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**8,603**
Percent	**0.5%**	**74.4%**	**17.8%**	**0.0%**	**6.9%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	12	2	0	3	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	12	0	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	9	0	0	0	0	0	0	0	1	0	0	0	**10**
4:00 AM	0	16	2	0	3	2	0	0	0	0	0	0	0	**23**
5:00 AM	0	75	7	0	7	0	0	0	0	0	0	0	0	**89**
6:00 AM	3	171	65	0	12	3	0	0	0	0	0	0	0	**254**
7:00 AM	3	415	100	0	29	4	0	0	0	0	0	0	0	**551**
8:00 AM	2	338	80	0	27	2	0	2	0	0	0	0	0	**451**
9:00 AM	2	274	54	0	11	0	0	0	0	0	0	0	0	**341**
10:00 AM	1	295	47	0	22	1	0	0	0	0	0	0	1	**367**
11:00 AM	3	403	64	0	26	3	0	1	0	0	0	0	0	**500**
12:00 PM	0	436	68	0	24	0	0	0	0	0	0	0	0	**528**
1:00 PM	6	404	62	0	16	1	0	0	0	0	0	0	0	**489**
2:00 PM	2	441	61	0	19	0	0	0	2	0	0	0	0	**525**
3:00 PM	3	421	52	0	20	3	0	0	0	0	0	0	0	**499**
4:00 PM	3	470	53	0	16	1	0	0	0	0	0	0	0	**543**
5:00 PM	2	514	76	0	19	1	0	0	1	0	0	0	0	**613**
6:00 PM	3	347	64	0	10	0	0	0	0	0	0	0	0	**424**
7:00 PM	3	302	40	0	5	0	0	0	0	1	0	0	0	**351**
8:00 PM	1	203	35	0	5	0	0	0	0	0	0	0	0	**244**
9:00 PM	1	179	32	0	4	0	0	0	0	0	0	0	0	**216**
10:00 PM	1	115	23	0	5	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	42	2	0	4	0	0	0	0	0	0	0	0	**48**
Total	**41**	**5,897**	**990**	**0**	**288**	**21**	**0**	**3**	**3**	**2**	**0**	**0**	**1**	**7,246**
Percent	**0.6%**	**81.4%**	**13.7%**	**0.0%**	**4.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	3	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	15	2	0	2	0	0	0	0	0	0	0	0	**19**
2:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	0	**7**
4:00 AM	1	11	3	0	2	1	0	0	0	0	0	0	0	**18**
5:00 AM	1	43	5	0	8	0	0	0	0	0	0	0	0	**57**
6:00 AM	0	126	46	0	28	3	0	0	0	0	0	0	0	**203**
7:00 AM	7	255	66	0	32	2	0	0	0	0	0	0	0	**362**
8:00 AM	3	350	100	0	33	1	0	0	0	0	0	0	0	**487**
9:00 AM	3	326	76	0	40	2	0	0	2	0	0	0	0	**449**
10:00 AM	2	318	82	1	43	4	0	0	1	0	0	0	0	**451**
11:00 AM	3	406	91	1	35	1	0	0	1	0	0	0	0	**538**
12:00 PM	4	426	83	0	47	0	0	0	1	0	0	0	0	**561**
1:00 PM	2	457	88	1	56	4	0	0	0	0	0	0	0	**608**
2:00 PM	0	505	103	0	49	2	0	0	0	0	0	0	0	**659**
3:00 PM	4	528	126	0	43	0	0	0	0	0	0	0	0	**701**
4:00 PM	1	583	179	1	49	0	0	0	0	0	0	0	1	**814**
5:00 PM	2	624	154	0	48	1	0	0	0	0	0	0	0	**829**
6:00 PM	3	474	103	0	27	1	0	0	1	0	0	0	0	**609**
7:00 PM	1	330	91	0	17	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	251	64	0	22	0	0	0	0	0	0	0	0	**337**
9:00 PM	2	182	38	0	6	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	116	22	0	3	0	0	0	1	0	0	0	0	**142**
11:00 PM	0	50	6	0	2	0	0	0	0	0	0	0	0	**58**
Total	**39**	**6,401**	**1,531**	**4**	**597**	**22**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**8,603**
Percent	**0.5%**	**74.4%**	**17.8%**	**0.0%**	**6.9%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	12	2	0	3	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	12	0	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	9	0	0	0	0	0	0	0	1	0	0	0	**10**
4:00 AM	0	16	2	0	3	2	0	0	0	0	0	0	0	**23**
5:00 AM	0	75	7	0	7	0	0	0	0	0	0	0	0	**89**
6:00 AM	3	171	65	0	12	3	0	0	0	0	0	0	0	**254**
7:00 AM	3	415	100	0	29	4	0	0	0	0	0	0	0	**551**
8:00 AM	2	338	80	0	27	2	0	2	0	0	0	0	0	**451**
9:00 AM	2	274	54	0	11	0	0	0	0	0	0	0	0	**341**
10:00 AM	1	295	47	0	22	1	0	0	0	0	0	0	1	**367**
11:00 AM	3	403	64	0	26	3	0	1	0	0	0	0	0	**500**
12:00 PM	0	436	68	0	24	0	0	0	0	0	0	0	0	**528**
1:00 PM	6	404	62	0	16	1	0	0	0	0	0	0	0	**489**
2:00 PM	2	441	61	0	19	0	0	0	2	0	0	0	0	**525**
3:00 PM	3	421	52	0	20	3	0	0	0	0	0	0	0	**499**
4:00 PM	3	470	53	0	16	1	0	0	0	0	0	0	0	**543**
5:00 PM	2	514	76	0	19	1	0	0	1	0	0	0	0	**613**
6:00 PM	3	347	64	0	10	0	0	0	0	0	0	0	0	**424**
7:00 PM	3	302	40	0	5	0	0	0	0	1	0	0	0	**351**
8:00 PM	1	203	35	0	5	0	0	0	0	0	0	0	0	**244**
9:00 PM	1	179	32	0	4	0	0	0	0	0	0	0	0	**216**
10:00 PM	1	115	23	0	5	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	42	2	0	4	0	0	0	0	0	0	0	0	**48**
Total	**41**	**5,897**	**990**	**0**	**288**	**21**	**0**	**3**	**3**	**2**	**0**	**0**	**1**	**7,246**
Percent	**0.6%**	**81.4%**	**13.7%**	**0.0%**	**4.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	3	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	15	2	0	2	0	0	0	0	0	0	0	0	**19**
2:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	0	**7**
4:00 AM	1	11	3	0	2	1	0	0	0	0	0	0	0	**18**
5:00 AM	1	43	5	0	8	0	0	0	0	0	0	0	0	**57**
6:00 AM	0	126	46	0	28	3	0	0	0	0	0	0	0	**203**
7:00 AM	7	255	66	0	32	2	0	0	0	0	0	0	0	**362**
8:00 AM	3	350	100	0	33	1	0	0	0	0	0	0	0	**487**
9:00 AM	3	326	76	0	40	2	0	0	2	0	0	0	0	**449**
10:00 AM	2	318	82	1	43	4	0	0	1	0	0	0	0	**451**
11:00 AM	3	406	91	1	35	1	0	0	1	0	0	0	0	**538**
12:00 PM	4	426	83	0	47	0	0	0	1	0	0	0	0	**561**
1:00 PM	2	457	88	1	56	4	0	0	0	0	0	0	0	**608**
2:00 PM	0	505	103	0	49	2	0	0	0	0	0	0	0	**659**
3:00 PM	4	528	126	0	43	0	0	0	0	0	0	0	0	**701**
4:00 PM	1	583	179	1	49	0	0	0	0	0	0	0	1	**814**
5:00 PM	2	624	154	0	48	1	0	0	0	0	0	0	0	**829**
6:00 PM	3	474	103	0	27	1	0	0	1	0	0	0	0	**609**
7:00 PM	1	330	91	0	17	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	251	64	0	22	0	0	0	0	0	0	0	0	**337**
9:00 PM	2	182	38	0	6	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	116	22	0	3	0	0	0	1	0	0	0	0	**142**
11:00 PM	0	50	6	0	2	0	0	0	0	0	0	0	0	**58**
Total	**39**	**6,401**	**1,531**	**4**	**597**	**22**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**8,603**
Percent	**0.5%**	**74.4%**	**17.8%**	**0.0%**	**6.9%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 - 4/30/2019
Site Code: 15

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	19	20	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	20	39
1:00 AM	13	19	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	19	32
2:00 AM	4	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11
3:00 AM	10	7	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	7	17
4:00 AM	23	18	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	18	41
5:00 AM	89	57	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	57	146
6:00 AM	254	203	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254	203	457
7:00 AM	**551**	362	913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**551**	362	913
8:00 AM	451	487	938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451	487	938
9:00 AM	341	449	790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	341	449	790
10:00 AM	367	451	818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	367	451	818
11:00 AM	500	**538**	**1,038**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	**538**	**1,038**
12:00 PM	528	561	1,089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	561	1,089
1:00 PM	489	608	1,097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	489	608	1,097
2:00 PM	525	659	1,184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	525	659	1,184
3:00 PM	499	701	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	499	701	1,200
4:00 PM	543	814	1,357	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	543	814	1,357
5:00 PM	**613**	**829**	**1,442**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**613**	**829**	**1,442**
6:00 PM	424	609	1,033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	424	609	1,033
7:00 PM	351	439	790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	351	439	790
8:00 PM	244	337	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	244	337	581
9:00 PM	216	228	444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	228	444
10:00 PM	144	142	286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144	142	286
11:00 PM	48	58	106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	58	106
Total	7,246	8,603	15,849	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,246	8,603	15,849
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	07:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	11:00	11:00
Vol.	551	538	1,038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	551	538	1,038
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	613	829	1,442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	613	829	1,442

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Francisco Blvd E, B/W Bellam & Main

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 16

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	26	3,846	962	7	469	9	0	4	11	1	1	1	0	5,337
Percent	0.5%	72.1%	18.0%	0.1%	8.8%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	26	5,625	1,660	2	622	17	0	9	15	0	2	1	3	7,982
Percent	0.3%	70.5%	20.8%	0.0%	7.8%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%
Total	52	9,471	2,622	9	1,091	26	0	13	26	1	3	2	3	13,319
Percent	0.4%	71.1%	19.7%	0.1%	8.2%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	10	1	0	2	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	1	2	0	0	1	0	1	0	0	**10**
3:00 AM	0	8	0	0	2	1	0	1	0	0	0	0	0	**12**
4:00 AM	0	9	2	0	3	1	0	0	1	0	0	0	0	**16**
5:00 AM	0	14	2	0	10	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	43	3	34	0	0	0	0	0	0	0	0	**139**
7:00 AM	1	89	55	0	37	0	0	0	0	0	0	0	0	**182**
8:00 AM	1	180	71	0	31	0	0	0	4	1	0	0	0	**288**
9:00 AM	1	211	79	1	46	2	0	0	1	0	0	1	0	**342**
10:00 AM	2	256	77	0	36	1	0	1	1	0	0	0	0	**374**
11:00 AM	4	356	74	1	35	1	0	0	0	0	0	0	0	**471**
12:00 PM	1	354	84	0	37	0	0	0	0	0	0	0	0	**476**
1:00 PM	3	372	56	0	33	0	0	1	0	0	0	0	0	**465**
2:00 PM	2	336	69	0	28	0	0	0	1	0	0	0	0	**436**
3:00 PM	2	294	64	0	27	0	0	1	0	0	0	0	0	**388**
4:00 PM	0	278	51	0	28	0	0	0	0	0	0	0	0	**357**
5:00 PM	3	200	62	0	20	0	0	0	0	0	0	0	0	**285**
6:00 PM	3	220	50	1	8	0	0	0	0	0	0	0	0	**282**
7:00 PM	1	174	35	0	11	1	0	0	1	0	0	0	0	**223**
8:00 PM	0	180	34	1	16	0	0	0	0	0	0	0	0	**231**
9:00 PM	1	134	29	0	14	0	0	0	0	0	0	0	0	**178**
10:00 PM	1	62	14	0	9	0	0	0	1	0	0	0	0	**87**
11:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	**39**
Total	**26**	**3,846**	**962**	**7**	**469**	**9**	**0**	**4**	**11**	**1**	**1**	**1**	**0**	**5,337**
Percent	**0.5%**	**72.1%**	**18.0%**	**0.1%**	**8.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	2	0	0	2	1	0	0	1	0	0	0	0	**6**
3:00 AM	0	8	2	0	3	1	0	0	0	0	1	0	0	**15**
4:00 AM	1	31	1	1	6	2	0	0	1	0	0	0	0	**43**
5:00 AM	0	76	18	0	12	1	0	0	0	0	1	1	0	**109**
6:00 AM	0	163	105	0	41	2	0	1	1	0	0	0	0	**313**
7:00 AM	2	294	175	0	56	1	0	1	4	0	0	0	1	**534**
8:00 AM	1	320	118	0	50	1	0	1	0	0	0	0	0	**491**
9:00 AM	2	363	148	1	36	2	0	2	0	0	0	0	1	**555**
10:00 AM	2	424	115	0	56	1	0	0	0	0	0	0	0	**598**
11:00 AM	1	443	111	0	46	2	0	0	1	0	0	0	0	**604**
12:00 PM	2	478	100	0	44	1	0	0	0	0	0	0	0	**625**
1:00 PM	3	426	116	0	46	1	0	1	1	0	0	0	0	**594**
2:00 PM	2	442	97	0	51	0	0	1	1	0	0	0	0	**594**
3:00 PM	2	431	108	0	36	0	0	1	0	0	0	0	0	**578**
4:00 PM	1	375	142	0	41	0	0	0	0	0	0	0	0	**559**
5:00 PM	4	383	100	0	29	0	0	0	0	0	0	0	0	**516**
6:00 PM	0	304	72	0	18	1	0	0	3	0	0	0	0	**398**
7:00 PM	3	260	57	0	20	0	0	0	0	0	0	0	0	**340**
8:00 PM	0	165	39	0	14	0	0	0	1	0	0	0	0	**219**
9:00 PM	0	158	20	0	7	0	0	1	1	0	0	0	1	**188**
10:00 PM	0	56	12	0	4	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	10	1	0	3	0	0	0	0	0	0	0	0	**14**
Total	**26**	**5,625**	**1,660**	**2**	**622**	**17**	**0**	**9**	**15**	**0**	**2**	**1**	**3**	**7,982**
Percent	**0.3%**	**70.5%**	**20.8%**	**0.0%**	**7.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	10	1	0	2	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	1	2	0	0	1	0	1	0	0	**10**
3:00 AM	0	8	0	0	2	1	0	1	0	0	0	0	0	**12**
4:00 AM	0	9	2	0	3	1	0	0	1	0	0	0	0	**16**
5:00 AM	0	14	2	0	10	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	43	3	34	0	0	0	0	0	0	0	0	**139**
7:00 AM	1	89	55	0	37	0	0	0	0	0	0	0	0	**182**
8:00 AM	1	180	71	0	31	0	0	0	4	1	0	0	0	**288**
9:00 AM	1	211	79	1	46	2	0	0	1	0	0	1	0	**342**
10:00 AM	2	256	77	0	36	1	0	1	1	0	0	0	0	**374**
11:00 AM	4	356	74	1	35	1	0	0	0	0	0	0	0	**471**
12:00 PM	1	354	84	0	37	0	0	0	0	0	0	0	0	**476**
1:00 PM	3	372	56	0	33	0	0	1	0	0	0	0	0	**465**
2:00 PM	2	336	69	0	28	0	0	0	1	0	0	0	0	**436**
3:00 PM	2	294	64	0	27	0	0	1	0	0	0	0	0	**388**
4:00 PM	0	278	51	0	28	0	0	0	0	0	0	0	0	**357**
5:00 PM	3	200	62	0	20	0	0	0	0	0	0	0	0	**285**
6:00 PM	3	220	50	1	8	0	0	0	0	0	0	0	0	**282**
7:00 PM	1	174	35	0	11	1	0	0	1	0	0	0	0	**223**
8:00 PM	0	180	34	1	16	0	0	0	0	0	0	0	0	**231**
9:00 PM	1	134	29	0	14	0	0	0	0	0	0	0	0	**178**
10:00 PM	1	62	14	0	9	0	0	0	1	0	0	0	0	**87**
11:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	**39**
Total	**26**	**3,846**	**962**	**7**	**469**	**9**	**0**	**4**	**11**	**1**	**1**	**1**	**0**	**5,337**
Percent	**0.5%**	**72.1%**	**18.0%**	**0.1%**	**8.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	2	0	0	2	1	0	0	1	0	0	0	0	**6**
3:00 AM	0	8	2	0	3	1	0	0	0	0	1	0	0	**15**
4:00 AM	1	31	1	1	6	2	0	0	1	0	0	0	0	**43**
5:00 AM	0	76	18	0	12	1	0	0	0	0	1	1	0	**109**
6:00 AM	0	163	105	0	41	2	0	1	1	0	0	0	0	**313**
7:00 AM	2	294	175	0	56	1	0	1	4	0	0	0	1	**534**
8:00 AM	1	320	118	0	50	1	0	1	0	0	0	0	0	**491**
9:00 AM	2	363	148	1	36	2	0	2	0	0	0	0	1	**555**
10:00 AM	2	424	115	0	56	1	0	0	0	0	0	0	0	**598**
11:00 AM	1	443	111	0	46	2	0	0	1	0	0	0	0	**604**
12:00 PM	2	478	100	0	44	1	0	0	0	0	0	0	0	**625**
1:00 PM	3	426	116	0	46	1	0	1	1	0	0	0	0	**594**
2:00 PM	2	442	97	0	51	0	0	1	1	0	0	0	0	**594**
3:00 PM	2	431	108	0	36	0	0	1	0	0	0	0	0	**578**
4:00 PM	1	375	142	0	41	0	0	0	0	0	0	0	0	**559**
5:00 PM	4	383	100	0	29	0	0	0	0	0	0	0	0	**516**
6:00 PM	0	304	72	0	18	1	0	0	3	0	0	0	0	**398**
7:00 PM	3	260	57	0	20	0	0	0	0	0	0	0	0	**340**
8:00 PM	0	165	39	0	14	0	0	0	1	0	0	0	0	**219**
9:00 PM	0	158	20	0	7	0	0	1	1	0	0	0	1	**188**
10:00 PM	0	56	12	0	4	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	10	1	0	3	0	0	0	0	0	0	0	0	**14**
Total	**26**	**5,625**	**1,660**	**2**	**622**	**17**	**0**	**9**	**15**	**0**	**2**	**1**	**3**	**7,982**
Percent	**0.3%**	**70.5%**	**20.8%**	**0.0%**	**7.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	10	1	0	2	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	1	2	0	0	1	0	1	0	0	**10**
3:00 AM	0	8	0	0	2	1	0	1	0	0	0	0	0	**12**
4:00 AM	0	9	2	0	3	1	0	0	1	0	0	0	0	**16**
5:00 AM	0	14	2	0	10	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	43	3	34	0	0	0	0	0	0	0	0	**139**
7:00 AM	1	89	55	0	37	0	0	0	0	0	0	0	0	**182**
8:00 AM	1	180	71	0	31	0	0	0	4	1	0	0	0	**288**
9:00 AM	1	211	79	1	46	2	0	0	1	0	0	1	0	**342**
10:00 AM	2	256	77	0	36	1	0	1	1	0	0	0	0	**374**
11:00 AM	4	356	74	1	35	1	0	0	0	0	0	0	0	**471**
12:00 PM	1	354	84	0	37	0	0	0	0	0	0	0	0	**476**
1:00 PM	3	372	56	0	33	0	0	1	0	0	0	0	0	**465**
2:00 PM	2	336	69	0	28	0	0	0	1	0	0	0	0	**436**
3:00 PM	2	294	64	0	27	0	0	1	0	0	0	0	0	**388**
4:00 PM	0	278	51	0	28	0	0	0	0	0	0	0	0	**357**
5:00 PM	3	200	62	0	20	0	0	0	0	0	0	0	0	**285**
6:00 PM	3	220	50	1	8	0	0	0	0	0	0	0	0	**282**
7:00 PM	1	174	35	0	11	1	0	0	1	0	0	0	0	**223**
8:00 PM	0	180	34	1	16	0	0	0	0	0	0	0	0	**231**
9:00 PM	1	134	29	0	14	0	0	0	0	0	0	0	0	**178**
10:00 PM	1	62	14	0	9	0	0	0	1	0	0	0	0	**87**
11:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	**39**
Total	**26**	**3,846**	**962**	**7**	**469**	**9**	**0**	**4**	**11**	**1**	**1**	**1**	**0**	**5,337**
Percent	**0.5%**	**72.1%**	**18.0%**	**0.1%**	**8.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	2	0	0	2	1	0	0	1	0	0	0	0	**6**
3:00 AM	0	8	2	0	3	1	0	0	0	0	1	0	0	**15**
4:00 AM	1	31	1	1	6	2	0	0	1	0	0	0	0	**43**
5:00 AM	0	76	18	0	12	1	0	0	0	0	1	1	0	**109**
6:00 AM	0	163	105	0	41	2	0	1	1	0	0	0	0	**313**
7:00 AM	2	294	175	0	56	1	0	1	4	0	0	0	1	**534**
8:00 AM	1	320	118	0	50	1	0	1	0	0	0	0	0	**491**
9:00 AM	2	363	148	1	36	2	0	2	0	0	0	0	1	**555**
10:00 AM	2	424	115	0	56	1	0	0	0	0	0	0	0	**598**
11:00 AM	1	443	111	0	46	2	0	0	1	0	0	0	0	**604**
12:00 PM	2	478	100	0	44	1	0	0	0	0	0	0	0	**625**
1:00 PM	3	426	116	0	46	1	0	1	1	0	0	0	0	**594**
2:00 PM	2	442	97	0	51	0	0	1	1	0	0	0	0	**594**
3:00 PM	2	431	108	0	36	0	0	1	0	0	0	0	0	**578**
4:00 PM	1	375	142	0	41	0	0	0	0	0	0	0	0	**559**
5:00 PM	4	383	100	0	29	0	0	0	0	0	0	0	0	**516**
6:00 PM	0	304	72	0	18	1	0	0	3	0	0	0	0	**398**
7:00 PM	3	260	57	0	20	0	0	0	0	0	0	0	0	**340**
8:00 PM	0	165	39	0	14	0	0	0	1	0	0	0	0	**219**
9:00 PM	0	158	20	0	7	0	0	1	1	0	0	0	1	**188**
10:00 PM	0	56	12	0	4	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	10	1	0	3	0	0	0	0	0	0	0	0	**14**
Total	**26**	**5,625**	**1,660**	**2**	**622**	**17**	**0**	**9**	**15**	**0**	**2**	**1**	**3**	**7,982**
Percent	**0.3%**	**70.5%**	**20.8%**	**0.0%**	**7.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 - 5/1/2019
Site Code: 16

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	17	7	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	7	24
1:00 AM	13	10	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	10	23
2:00 AM	10	6	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	6	16
3:00 AM	12	15	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	15	27
4:00 AM	16	43	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	43	59
5:00 AM	26	109	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	109	135
6:00 AM	139	313	452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139	313	452
7:00 AM	182	534	716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	534	716
8:00 AM	288	491	779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	288	491	779
9:00 AM	342	555	897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	342	555	897
10:00 AM	374	598	972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	374	598	972
11:00 AM	**471**	**604**	**1,075**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**471**	**604**	**1,075**
12:00 PM	**476**	**625**	**1,101**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**476**	**625**	**1,101**
1:00 PM	465	594	1,059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	465	594	1,059
2:00 PM	436	594	1,030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	436	594	1,030
3:00 PM	388	578	966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	388	578	966
4:00 PM	357	559	916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	357	559	916
5:00 PM	285	516	801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285	516	801
6:00 PM	282	398	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	282	398	680
7:00 PM	223	340	563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	340	563
8:00 PM	231	219	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	219	450
9:00 PM	178	188	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178	188	366
10:00 PM	87	72	159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	72	159
11:00 PM	39	14	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	14	53
Total	5,337	7,982	13,319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,337	7,982	13,319
Percent	40%	60%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	60%	-
AM Peak	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	11:00	11:00
Vol.	471	604	1,075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	471	604	1,075
PM Peak	12:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	12:00	12:00
Vol.	476	625	1,101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	476	625	1,101

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Francisco Blvd W, B/W 2nd & Andersen

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 17

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	10	1,176	182	2	70	12	0	0	5	1	0	0	0	1,458
Percent	0.7%	80.7%	12.5%	0.1%	4.8%	0.8%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	100%
Southbound	18	1,404	226	0	63	12	0	0	6	0	0	0	0	1,729
Percent	1.0%	81.2%	13.1%	0.0%	3.6%	0.7%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	100%
Total	28	2,580	408	2	133	24	0	0	11	1	0	0	0	3,187
Percent	0.9%	81.0%	12.8%	0.1%	4.2%	0.8%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	1	0	2	1	0	0	2	0	0	0	0	**7**
5:00 AM	0	3	3	0	4	0	0	0	0	0	0	0	0	**10**
6:00 AM	1	25	6	0	2	1	0	0	0	0	0	0	0	**35**
7:00 AM	0	30	5	0	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	2	48	5	0	5	2	0	0	0	0	0	0	0	**62**
9:00 AM	1	81	13	1	4	0	0	0	0	0	0	0	0	**100**
10:00 AM	0	106	16	0	6	1	0	0	0	0	0	0	0	**129**
11:00 AM	1	109	19	0	8	2	0	0	1	1	0	0	0	**141**
12:00 PM	2	128	16	0	10	2	0	0	0	0	0	0	0	**158**
1:00 PM	1	128	20	0	6	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	114	14	0	5	1	0	0	0	0	0	0	0	**134**
3:00 PM	0	120	14	0	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	68	22	0	2	0	0	0	0	0	0	0	0	**92**
5:00 PM	0	83	7	0	2	0	0	0	0	0	0	0	0	**92**
6:00 PM	0	45	3	0	0	0	0	0	1	0	0	0	0	**49**
7:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
8:00 PM	0	32	8	0	0	0	0	0	1	0	0	0	0	**41**
9:00 PM	1	5	2	0	0	0	0	0	0	0	0	0	0	**8**
10:00 PM	1	4	2	0	1	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**10**	**1,176**	**182**	**2**	**70**	**12**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1,458**
Percent	**0.7%**	**80.7%**	**12.5%**	**0.1%**	**4.8%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	0	1	0	0	0	0	**6**
5:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	0	**7**
6:00 AM	0	2	2	0	3	2	0	0	0	0	0	0	0	**9**
7:00 AM	1	6	2	0	4	2	0	0	0	0	0	0	0	**15**
8:00 AM	0	31	4	0	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	60	8	0	6	0	0	0	0	0	0	0	0	**75**
10:00 AM	0	105	16	0	4	0	0	0	0	0	0	0	0	**125**
11:00 AM	3	134	26	0	4	0	0	0	0	0	0	0	0	**167**
12:00 PM	2	129	25	0	11	1	0	0	2	0	0	0	0	**170**
1:00 PM	2	156	20	0	5	2	0	0	0	0	0	0	0	**185**
2:00 PM	1	150	22	0	7	1	0	0	0	0	0	0	0	**181**
3:00 PM	0	151	21	0	5	0	0	0	0	0	0	0	0	**177**
4:00 PM	3	112	26	0	4	0	0	0	0	0	0	0	0	**145**
5:00 PM	0	114	18	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	3	94	11	0	0	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	69	6	0	1	0	0	0	0	0	0	0	0	**76**
8:00 PM	0	45	10	0	0	0	0	0	1	0	0	0	0	**56**
9:00 PM	0	32	5	0	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	2	6	1	0	1	0	0	0	0	0	0	0	0	**10**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**18**	**1,404**	**226**	**0**	**63**	**12**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1,729**
Percent	**1.0%**	**81.2%**	**13.1%**	**0.0%**	**3.6%**	**0.7%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	1	0	2	1	0	0	2	0	0	0	0	**7**
5:00 AM	0	3	3	0	4	0	0	0	0	0	0	0	0	**10**
6:00 AM	1	25	6	0	2	1	0	0	0	0	0	0	0	**35**
7:00 AM	0	30	5	0	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	2	48	5	0	5	2	0	0	0	0	0	0	0	**62**
9:00 AM	1	81	13	1	4	0	0	0	0	0	0	0	0	**100**
10:00 AM	0	106	16	0	6	1	0	0	0	0	0	0	0	**129**
11:00 AM	1	109	19	0	8	2	0	0	1	1	0	0	0	**141**
12:00 PM	2	128	16	0	10	2	0	0	0	0	0	0	0	**158**
1:00 PM	1	128	20	0	6	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	114	14	0	5	1	0	0	0	0	0	0	0	**134**
3:00 PM	0	120	14	0	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	68	22	0	2	0	0	0	0	0	0	0	0	**92**
5:00 PM	0	83	7	0	2	0	0	0	0	0	0	0	0	**92**
6:00 PM	0	45	3	0	0	0	0	0	1	0	0	0	0	**49**
7:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
8:00 PM	0	32	8	0	0	0	0	0	1	0	0	0	0	**41**
9:00 PM	1	5	2	0	0	0	0	0	0	0	0	0	0	**8**
10:00 PM	1	4	2	0	1	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**10**	**1,176**	**182**	**2**	**70**	**12**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1,458**
Percent	**0.7%**	**80.7%**	**12.5%**	**0.1%**	**4.8%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	0	1	0	0	0	0	**6**
5:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	0	**7**
6:00 AM	0	2	2	0	3	2	0	0	0	0	0	0	0	**9**
7:00 AM	1	6	2	0	4	2	0	0	0	0	0	0	0	**15**
8:00 AM	0	31	4	0	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	60	8	0	6	0	0	0	0	0	0	0	0	**75**
10:00 AM	0	105	16	0	4	0	0	0	0	0	0	0	0	**125**
11:00 AM	3	134	26	0	4	0	0	0	0	0	0	0	0	**167**
12:00 PM	2	129	25	0	11	1	0	0	2	0	0	0	0	**170**
1:00 PM	2	156	20	0	5	2	0	0	0	0	0	0	0	**185**
2:00 PM	1	150	22	0	7	1	0	0	0	0	0	0	0	**181**
3:00 PM	0	151	21	0	5	0	0	0	0	0	0	0	0	**177**
4:00 PM	3	112	26	0	4	0	0	0	0	0	0	0	0	**145**
5:00 PM	0	114	18	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	3	94	11	0	0	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	69	6	0	1	0	0	0	0	0	0	0	0	**76**
8:00 PM	0	45	10	0	0	0	0	0	1	0	0	0	0	**56**
9:00 PM	0	32	5	0	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	2	6	1	0	1	0	0	0	0	0	0	0	0	**10**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**18**	**1,404**	**226**	**0**	**63**	**12**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1,729**
Percent	**1.0%**	**81.2%**	**13.1%**	**0.0%**	**3.6%**	**0.7%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	1	0	2	1	0	0	2	0	0	0	0	**7**
5:00 AM	0	3	3	0	4	0	0	0	0	0	0	0	0	**10**
6:00 AM	1	25	6	0	2	1	0	0	0	0	0	0	0	**35**
7:00 AM	0	30	5	0	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	2	48	5	0	5	2	0	0	0	0	0	0	0	**62**
9:00 AM	1	81	13	1	4	0	0	0	0	0	0	0	0	**100**
10:00 AM	0	106	16	0	6	1	0	0	0	0	0	0	0	**129**
11:00 AM	1	109	19	0	8	2	0	0	1	1	0	0	0	**141**
12:00 PM	2	128	16	0	10	2	0	0	0	0	0	0	0	**158**
1:00 PM	1	128	20	0	6	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	114	14	0	5	1	0	0	0	0	0	0	0	**134**
3:00 PM	0	120	14	0	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	68	22	0	2	0	0	0	0	0	0	0	0	**92**
5:00 PM	0	83	7	0	2	0	0	0	0	0	0	0	0	**92**
6:00 PM	0	45	3	0	0	0	0	0	1	0	0	0	0	**49**
7:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
8:00 PM	0	32	8	0	0	0	0	0	1	0	0	0	0	**41**
9:00 PM	1	5	2	0	0	0	0	0	0	0	0	0	0	**8**
10:00 PM	1	4	2	0	1	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**10**	**1,176**	**182**	**2**	**70**	**12**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1,458**
Percent	**0.7%**	**80.7%**	**12.5%**	**0.1%**	**4.8%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	0	1	0	0	0	0	**6**
5:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	0	**7**
6:00 AM	0	2	2	0	3	2	0	0	0	0	0	0	0	**9**
7:00 AM	1	6	2	0	4	2	0	0	0	0	0	0	0	**15**
8:00 AM	0	31	4	0	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	60	8	0	6	0	0	0	0	0	0	0	0	**75**
10:00 AM	0	105	16	0	4	0	0	0	0	0	0	0	0	**125**
11:00 AM	3	134	26	0	4	0	0	0	0	0	0	0	0	**167**
12:00 PM	2	129	25	0	11	1	0	0	2	0	0	0	0	**170**
1:00 PM	2	156	20	0	5	2	0	0	0	0	0	0	0	**185**
2:00 PM	1	150	22	0	7	1	0	0	0	0	0	0	0	**181**
3:00 PM	0	151	21	0	5	0	0	0	0	0	0	0	0	**177**
4:00 PM	3	112	26	0	4	0	0	0	0	0	0	0	0	**145**
5:00 PM	0	114	18	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	3	94	11	0	0	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	69	6	0	1	0	0	0	0	0	0	0	0	**76**
8:00 PM	0	45	10	0	0	0	0	0	1	0	0	0	0	**56**
9:00 PM	0	32	5	0	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	2	6	1	0	1	0	0	0	0	0	0	0	0	**10**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**18**	**1,404**	**226**	**0**	**63**	**12**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1,729**
Percent	**1.0%**	**81.2%**	**13.1%**	**0.0%**	**3.6%**	**0.7%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 - 5/1/2019
Site Code: 17

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
1:00 AM	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	4
2:00 AM	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
3:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
4:00 AM	7	6	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	6	13
5:00 AM	10	7	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	7	17
6:00 AM	35	9	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	9	44
7:00 AM	40	15	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	15	55
8:00 AM	62	38	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	38	100
9:00 AM	100	75	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	75	175
10:00 AM	129	125	254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	125	254
11:00 AM	**141**	**167**	**308**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**141**	**167**	**308**
12:00 PM	**158**	170	328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**158**	170	328
1:00 PM	155	**185**	**340**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155	**185**	**340**
2:00 PM	134	181	315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	181	315
3:00 PM	140	177	317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	177	317
4:00 PM	92	145	237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	145	237
5:00 PM	92	134	226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	134	226
6:00 PM	49	109	158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	109	158
7:00 PM	51	76	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	76	127
8:00 PM	41	56	97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	56	97
9:00 PM	8	37	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	37	45
10:00 PM	8	10	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	18
11:00 PM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
Total	1,458	1,729	3,187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,458	1,729	3,187
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	11:00	11:00
Vol.	141	167	308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	141	167	308
PM Peak	12:00	13:00	13:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	13:00	13:00
Vol.	158	185	340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	185	340

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 18

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	39	5,528	666	6	211	12	0	0	3	1	0	0	1	6,467
Percent	0.6%	85.5%	10.3%	0.1%	3.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	29	5,604	813	7	199	8	0	2	4	3	0	0	0	6,669
Percent	0.4%	84.0%	12.2%	0.1%	3.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	68	11,132	1,479	13	410	20	0	2	7	4	0	0	1	13,136
Percent	0.5%	84.7%	11.3%	0.1%	3.1%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	63	7	0	2	0	0	0	0	0	0	0	0	**72**
6:00 AM	1	189	30	1	11	1	0	0	0	0	0	0	0	**233**
7:00 AM	9	395	50	1	18	0	0	0	1	0	0	0	0	**474**
8:00 AM	9	534	61	0	19	1	0	0	0	0	0	0	0	**624**
9:00 AM	2	426	48	0	20	0	0	0	1	0	0	0	0	**497**
10:00 AM	5	357	50	0	12	1	0	0	1	0	0	0	1	**427**
11:00 AM	2	311	40	0	17	1	0	0	0	0	0	0	0	**371**
12:00 PM	1	337	42	0	22	2	0	0	0	0	0	0	0	**404**
1:00 PM	1	330	43	0	16	0	0	0	0	0	0	0	0	**390**
2:00 PM	3	331	53	0	17	3	0	0	0	1	0	0	0	**408**
3:00 PM	0	435	61	0	14	1	0	0	0	0	0	0	0	**511**
4:00 PM	0	448	38	0	12	0	0	0	0	0	0	0	0	**498**
5:00 PM	2	367	46	1	8	2	0	0	0	0	0	0	0	**426**
6:00 PM	1	310	33	3	8	0	0	0	0	0	0	0	0	**355**
7:00 PM	2	272	24	0	3	0	0	0	0	0	0	0	0	**301**
8:00 PM	0	178	10	0	4	0	0	0	0	0	0	0	0	**192**
9:00 PM	0	124	17	0	3	0	0	0	0	0	0	0	0	**144**
10:00 PM	0	47	2	0	2	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
Total	**39**	**5,528**	**666**	**6**	**211**	**12**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**6,467**
Percent	**0.6%**	**85.5%**	**10.3%**	**0.1%**	**3.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	21	0	0	6	2	0	0	0	0	0	0	0	**29**
6:00 AM	1	97	21	2	10	0	0	0	0	0	0	0	0	**131**
7:00 AM	2	200	40	2	16	0	0	0	0	0	0	0	0	**260**
8:00 AM	1	428	69	0	18	0	0	0	2	0	0	0	0	**518**
9:00 AM	0	252	42	0	12	0	0	1	0	0	0	0	0	**307**
10:00 AM	4	314	53	0	14	1	0	0	1	0	0	0	0	**387**
11:00 AM	1	303	50	0	13	0	0	0	0	0	0	0	0	**367**
12:00 PM	1	370	69	0	23	0	0	0	0	0	0	0	0	**463**
1:00 PM	1	366	60	0	14	0	0	0	0	0	0	0	0	**441**
2:00 PM	2	351	46	0	10	1	0	0	0	0	0	0	0	**410**
3:00 PM	2	472	100	0	14	1	0	1	0	1	0	0	0	**591**
4:00 PM	2	467	73	0	12	2	0	0	0	0	0	0	0	**556**
5:00 PM	4	502	50	1	13	0	0	0	1	1	0	0	0	**572**
6:00 PM	5	481	58	2	6	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	321	26	0	7	0	0	0	0	0	0	0	0	**354**
8:00 PM	3	238	26	0	5	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	202	15	0	1	0	0	0	0	1	0	0	0	**219**
10:00 PM	0	118	9	0	3	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	48	4	0	0	0	0	0	0	0	0	0	0	**52**
Total	**29**	**5,604**	**813**	**7**	**199**	**8**	**0**	**2**	**4**	**3**	**0**	**0**	**0**	**6,669**
Percent	**0.4%**	**84.0%**	**12.2%**	**0.1%**	**3.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	63	7	0	2	0	0	0	0	0	0	0	0	**72**
6:00 AM	1	189	30	1	11	1	0	0	0	0	0	0	0	**233**
7:00 AM	9	395	50	1	18	0	0	0	1	0	0	0	0	**474**
8:00 AM	9	534	61	0	19	1	0	0	0	0	0	0	0	**624**
9:00 AM	2	426	48	0	20	0	0	0	1	0	0	0	0	**497**
10:00 AM	5	357	50	0	12	1	0	0	1	0	0	0	1	**427**
11:00 AM	2	311	40	0	17	1	0	0	0	0	0	0	0	**371**
12:00 PM	1	337	42	0	22	2	0	0	0	0	0	0	0	**404**
1:00 PM	1	330	43	0	16	0	0	0	0	0	0	0	0	**390**
2:00 PM	3	331	53	0	17	3	0	0	0	1	0	0	0	**408**
3:00 PM	0	435	61	0	14	1	0	0	0	0	0	0	0	**511**
4:00 PM	0	448	38	0	12	0	0	0	0	0	0	0	0	**498**
5:00 PM	2	367	46	1	8	2	0	0	0	0	0	0	0	**426**
6:00 PM	1	310	33	3	8	0	0	0	0	0	0	0	0	**355**
7:00 PM	2	272	24	0	3	0	0	0	0	0	0	0	0	**301**
8:00 PM	0	178	10	0	4	0	0	0	0	0	0	0	0	**192**
9:00 PM	0	124	17	0	3	0	0	0	0	0	0	0	0	**144**
10:00 PM	0	47	2	0	2	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
Total	**39**	**5,528**	**666**	**6**	**211**	**12**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**6,467**
Percent	**0.6%**	**85.5%**	**10.3%**	**0.1%**	**3.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	21	0	0	6	2	0	0	0	0	0	0	0	**29**
6:00 AM	1	97	21	2	10	0	0	0	0	0	0	0	0	**131**
7:00 AM	2	200	40	2	16	0	0	0	0	0	0	0	0	**260**
8:00 AM	1	428	69	0	18	0	0	0	2	0	0	0	0	**518**
9:00 AM	0	252	42	0	12	0	0	1	0	0	0	0	0	**307**
10:00 AM	4	314	53	0	14	1	0	0	1	0	0	0	0	**387**
11:00 AM	1	303	50	0	13	0	0	0	0	0	0	0	0	**367**
12:00 PM	1	370	69	0	23	0	0	0	0	0	0	0	0	**463**
1:00 PM	1	366	60	0	14	0	0	0	0	0	0	0	0	**441**
2:00 PM	2	351	46	0	10	1	0	0	0	0	0	0	0	**410**
3:00 PM	2	472	100	0	14	1	0	1	0	1	0	0	0	**591**
4:00 PM	2	467	73	0	12	2	0	0	0	0	0	0	0	**556**
5:00 PM	4	502	50	1	13	0	0	0	1	1	0	0	0	**572**
6:00 PM	5	481	58	2	6	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	321	26	0	7	0	0	0	0	0	0	0	0	**354**
8:00 PM	3	238	26	0	5	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	202	15	0	1	0	0	0	0	1	0	0	0	**219**
10:00 PM	0	118	9	0	3	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	48	4	0	0	0	0	0	0	0	0	0	0	**52**
Total	**29**	**5,604**	**813**	**7**	**199**	**8**	**0**	**2**	**4**	**3**	**0**	**0**	**0**	**6,669**
Percent	**0.4%**	**84.0%**	**12.2%**	**0.1%**	**3.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	63	7	0	2	0	0	0	0	0	0	0	0	**72**
6:00 AM	1	189	30	1	11	1	0	0	0	0	0	0	0	**233**
7:00 AM	9	395	50	1	18	0	0	0	1	0	0	0	0	**474**
8:00 AM	9	534	61	0	19	1	0	0	0	0	0	0	0	**624**
9:00 AM	2	426	48	0	20	0	0	0	1	0	0	0	0	**497**
10:00 AM	5	357	50	0	12	1	0	0	1	0	0	0	1	**427**
11:00 AM	2	311	40	0	17	1	0	0	0	0	0	0	0	**371**
12:00 PM	1	337	42	0	22	2	0	0	0	0	0	0	0	**404**
1:00 PM	1	330	43	0	16	0	0	0	0	0	0	0	0	**390**
2:00 PM	3	331	53	0	17	3	0	0	0	1	0	0	0	**408**
3:00 PM	0	435	61	0	14	1	0	0	0	0	0	0	0	**511**
4:00 PM	0	448	38	0	12	0	0	0	0	0	0	0	0	**498**
5:00 PM	2	367	46	1	8	2	0	0	0	0	0	0	0	**426**
6:00 PM	1	310	33	3	8	0	0	0	0	0	0	0	0	**355**
7:00 PM	2	272	24	0	3	0	0	0	0	0	0	0	0	**301**
8:00 PM	0	178	10	0	4	0	0	0	0	0	0	0	0	**192**
9:00 PM	0	124	17	0	3	0	0	0	0	0	0	0	0	**144**
10:00 PM	0	47	2	0	2	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
Total	**39**	**5,528**	**666**	**6**	**211**	**12**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**6,467**
Percent	**0.6%**	**85.5%**	**10.3%**	**0.1%**	**3.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	21	0	0	6	2	0	0	0	0	0	0	0	**29**
6:00 AM	1	97	21	2	10	0	0	0	0	0	0	0	0	**131**
7:00 AM	2	200	40	2	16	0	0	0	0	0	0	0	0	**260**
8:00 AM	1	428	69	0	18	0	0	0	2	0	0	0	0	**518**
9:00 AM	0	252	42	0	12	0	0	1	0	0	0	0	0	**307**
10:00 AM	4	314	53	0	14	1	0	0	1	0	0	0	0	**387**
11:00 AM	1	303	50	0	13	0	0	0	0	0	0	0	0	**367**
12:00 PM	1	370	69	0	23	0	0	0	0	0	0	0	0	**463**
1:00 PM	1	366	60	0	14	0	0	0	0	0	0	0	0	**441**
2:00 PM	2	351	46	0	10	1	0	0	0	0	0	0	0	**410**
3:00 PM	2	472	100	0	14	1	0	1	0	1	0	0	0	**591**
4:00 PM	2	467	73	0	12	2	0	0	0	0	0	0	0	**556**
5:00 PM	4	502	50	1	13	0	0	0	1	1	0	0	0	**572**
6:00 PM	5	481	58	2	6	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	321	26	0	7	0	0	0	0	0	0	0	0	**354**
8:00 PM	3	238	26	0	5	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	202	15	0	1	0	0	0	0	1	0	0	0	**219**
10:00 PM	0	118	9	0	3	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	48	4	0	0	0	0	0	0	0	0	0	0	**52**
Total	**29**	**5,604**	**813**	**7**	**199**	**8**	**0**	**2**	**4**	**3**	**0**	**0**	**0**	**6,669**
Percent	**0.4%**	**84.0%**	**12.2%**	**0.1%**	**3.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 - 5/1/2019
Site Code: 18

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	9	26	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	26	35
1:00 AM	8	11	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	11	19
2:00 AM	3	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	9
3:00 AM	5	4	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4	9
4:00 AM	37	10	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	10	47
5:00 AM	72	29	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	29	101
6:00 AM	233	131	364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	131	364
7:00 AM	474	260	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474	260	734
8:00 AM	**624**	**518**	**1,142**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**624**	**518**	**1,142**
9:00 AM	497	307	804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	497	307	804
10:00 AM	427	387	814	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	427	387	814
11:00 AM	371	367	738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	371	367	738
12:00 PM	404	463	867	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	463	867
1:00 PM	390	441	831	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	441	831
2:00 PM	408	410	818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	408	410	818
3:00 PM	**511**	**591**	**1,102**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**511**	**591**	**1,102**
4:00 PM	498	556	1,054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	498	556	1,054
5:00 PM	426	572	998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	426	572	998
6:00 PM	355	553	908	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	553	908
7:00 PM	301	354	655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301	354	655
8:00 PM	192	272	464	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	272	464
9:00 PM	144	219	363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144	219	363
10:00 PM	51	130	181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	130	181
11:00 PM	27	52	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	52	79
Total	6,467	6,669	13,136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,467	6,669	13,136
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	624	518	1,142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	624	518	1,142
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	511	591	1,102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	511	591	1,102

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 19

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	49	10,329	1,530	2	439	76	0	5	9	12	1	0	2	12,454
Percent	0.4%	82.9%	12.3%	0.0%	3.5%	0.6%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	100%
Westbound	42	9,001	1,915	3	481	31	0	8	13	15	0	0	10	11,519
Percent	0.4%	78.1%	16.6%	0.0%	4.2%	0.3%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	100%
Total	91	19,330	3,445	5	920	107	0	13	22	27	1	0	12	23,973
Percent	0.4%	80.6%	14.4%	0.0%	3.8%	0.4%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	33	5	0	0	0	0	0	1	0	0	0	0	**41**
1:00 AM	1	31	3	0	1	0	0	0	0	0	0	0	0	**36**
2:00 AM	0	9	2	0	2	0	0	0	0	0	0	0	0	**13**
3:00 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	55	12	0	5	0	0	0	0	0	0	0	0	**72**
5:00 AM	0	119	26	0	5	1	0	0	0	0	0	0	0	**151**
6:00 AM	2	317	57	0	27	2	0	1	1	1	0	0	0	**408**
7:00 AM	5	620	107	0	35	4	0	1	0	0	0	0	0	**772**
8:00 AM	3	767	120	0	36	6	0	0	1	1	0	0	1	**935**
9:00 AM	4	706	119	0	27	1	0	0	0	1	0	0	1	**859**
10:00 AM	2	604	143	0	24	8	0	0	2	2	0	0	0	**785**
11:00 AM	1	579	104	0	35	8	0	1	0	0	0	0	0	**728**
12:00 PM	2	669	91	0	35	5	0	0	0	1	0	0	0	**803**
1:00 PM	3	611	108	0	28	5	0	0	1	0	0	0	0	**756**
2:00 PM	5	714	95	0	38	8	0	1	0	4	1	0	0	**866**
3:00 PM	5	797	124	0	39	8	0	0	0	0	0	0	0	**973**
4:00 PM	2	872	100	0	20	10	0	0	1	0	0	0	0	**1,005**
5:00 PM	7	749	72	0	16	6	0	1	0	0	0	0	0	**851**
6:00 PM	0	625	84	2	22	1	0	0	0	1	0	0	0	**735**
7:00 PM	2	544	66	0	16	1	0	0	0	1	0	0	0	**630**
8:00 PM	0	390	38	0	7	0	0	0	0	0	0	0	0	**435**
9:00 PM	3	294	33	0	13	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	120	11	0	5	1	0	0	0	0	0	0	0	**137**
11:00 PM	0	93	9	0	2	0	0	0	2	0	0	0	0	**106**
Total	**49**	**10,329**	**1,530**	**2**	**439**	**76**	**0**	**5**	**9**	**12**	**1**	**0**	**2**	**12,454**
Percent	**0.4%**	**82.9%**	**12.3%**	**0.0%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	47	2	0	1	0	0	0	0	0	0	0	0	**50**
1:00 AM	0	16	8	0	1	0	0	0	0	0	0	0	0	**25**
2:00 AM	0	15	1	0	0	0	0	0	1	0	0	0	0	**17**
3:00 AM	0	9	1	0	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	31	2	0	2	0	0	0	1	0	0	0	0	**36**
5:00 AM	0	80	16	1	16	1	0	0	0	0	0	0	0	**114**
6:00 AM	5	246	48	1	17	2	0	0	1	0	0	0	0	**320**
7:00 AM	4	456	87	0	29	2	0	0	0	1	0	0	2	**581**
8:00 AM	2	656	168	0	47	4	0	0	3	0	0	0	1	**881**
9:00 AM	0	480	112	1	38	1	0	1	1	0	0	0	0	**634**
10:00 AM	1	518	144	0	28	2	0	1	0	2	0	0	0	**696**
11:00 AM	2	469	115	0	30	2	0	0	1	0	0	0	1	**620**
12:00 PM	2	521	130	0	41	3	0	1	0	1	0	0	0	**699**
1:00 PM	4	594	137	0	35	1	0	1	1	3	0	0	1	**777**
2:00 PM	2	611	131	0	40	0	0	0	1	1	0	0	0	**786**
3:00 PM	5	761	203	0	40	4	0	2	0	2	0	0	2	**1,019**
4:00 PM	2	691	155	0	29	3	0	1	1	1	0	0	2	**885**
5:00 PM	2	722	154	0	22	3	0	0	0	1	0	0	1	**905**
6:00 PM	3	632	103	0	17	3	0	1	0	1	0	0	0	**760**
7:00 PM	3	467	78	0	18	0	0	0	0	2	0	0	0	**568**
8:00 PM	3	361	58	0	12	0	0	0	0	0	0	0	0	**434**
9:00 PM	0	319	32	0	10	0	0	0	0	0	0	0	0	**361**
10:00 PM	1	201	21	0	6	0	0	0	2	0	0	0	0	**231**
11:00 PM	1	98	9	0	1	0	0	0	0	0	0	0	0	**109**
Total	**42**	**9,001**	**1,915**	**3**	**481**	**31**	**0**	**8**	**13**	**15**	**0**	**0**	**10**	**11,519**
Percent	**0.4%**	**78.1%**	**16.6%**	**0.0%**	**4.2%**	**0.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	33	5	0	0	0	0	0	1	0	0	0	0	**41**
1:00 AM	1	31	3	0	1	0	0	0	0	0	0	0	0	**36**
2:00 AM	0	9	2	0	2	0	0	0	0	0	0	0	0	**13**
3:00 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	55	12	0	5	0	0	0	0	0	0	0	0	**72**
5:00 AM	0	119	26	0	5	1	0	0	0	0	0	0	0	**151**
6:00 AM	2	317	57	0	27	2	0	1	1	1	0	0	0	**408**
7:00 AM	5	620	107	0	35	4	0	1	0	0	0	0	0	**772**
8:00 AM	3	767	120	0	36	6	0	0	1	1	0	0	1	**935**
9:00 AM	4	706	119	0	27	1	0	0	0	1	0	0	1	**859**
10:00 AM	2	604	143	0	24	8	0	0	2	2	0	0	0	**785**
11:00 AM	1	579	104	0	35	8	0	1	0	0	0	0	0	**728**
12:00 PM	2	669	91	0	35	5	0	0	0	1	0	0	0	**803**
1:00 PM	3	611	108	0	28	5	0	0	1	0	0	0	0	**756**
2:00 PM	5	714	95	0	38	8	0	1	0	4	1	0	0	**866**
3:00 PM	5	797	124	0	39	8	0	0	0	0	0	0	0	**973**
4:00 PM	2	872	100	0	20	10	0	0	1	0	0	0	0	**1,005**
5:00 PM	7	749	72	0	16	6	0	1	0	0	0	0	0	**851**
6:00 PM	0	625	84	2	22	1	0	0	0	1	0	0	0	**735**
7:00 PM	2	544	66	0	16	1	0	0	0	1	0	0	0	**630**
8:00 PM	0	390	38	0	7	0	0	0	0	0	0	0	0	**435**
9:00 PM	3	294	33	0	13	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	120	11	0	5	1	0	0	0	0	0	0	0	**137**
11:00 PM	0	93	9	0	2	0	0	0	2	0	0	0	0	**106**
Total	**49**	**10,329**	**1,530**	**2**	**439**	**76**	**0**	**5**	**9**	**12**	**1**	**0**	**2**	**12,454**
Percent	**0.4%**	**82.9%**	**12.3%**	**0.0%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	47	2	0	1	0	0	0	0	0	0	0	0	**50**
1:00 AM	0	16	8	0	1	0	0	0	0	0	0	0	0	**25**
2:00 AM	0	15	1	0	0	0	0	0	1	0	0	0	0	**17**
3:00 AM	0	9	1	0	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	31	2	0	2	0	0	0	1	0	0	0	0	**36**
5:00 AM	0	80	16	1	16	1	0	0	0	0	0	0	0	**114**
6:00 AM	5	246	48	1	17	2	0	0	1	0	0	0	0	**320**
7:00 AM	4	456	87	0	29	2	0	0	0	1	0	0	2	**581**
8:00 AM	2	656	168	0	47	4	0	0	3	0	0	0	1	**881**
9:00 AM	0	480	112	1	38	1	0	1	1	0	0	0	0	**634**
10:00 AM	1	518	144	0	28	2	0	1	0	2	0	0	0	**696**
11:00 AM	2	469	115	0	30	2	0	0	1	0	0	0	1	**620**
12:00 PM	2	521	130	0	41	3	0	1	0	1	0	0	0	**699**
1:00 PM	4	594	137	0	35	1	0	1	1	3	0	0	1	**777**
2:00 PM	2	611	131	0	40	0	0	0	1	1	0	0	0	**786**
3:00 PM	5	761	203	0	40	4	0	2	0	2	0	0	2	**1,019**
4:00 PM	2	691	155	0	29	3	0	1	1	1	0	0	2	**885**
5:00 PM	2	722	154	0	22	3	0	0	0	1	0	0	1	**905**
6:00 PM	3	632	103	0	17	3	0	1	0	1	0	0	0	**760**
7:00 PM	3	467	78	0	18	0	0	0	0	2	0	0	0	**568**
8:00 PM	3	361	58	0	12	0	0	0	0	0	0	0	0	**434**
9:00 PM	0	319	32	0	10	0	0	0	0	0	0	0	0	**361**
10:00 PM	1	201	21	0	6	0	0	0	2	0	0	0	0	**231**
11:00 PM	1	98	9	0	1	0	0	0	0	0	0	0	0	**109**
Total	**42**	**9,001**	**1,915**	**3**	**481**	**31**	**0**	**8**	**13**	**15**	**0**	**0**	**10**	**11,519**
Percent	**0.4%**	**78.1%**	**16.6%**	**0.0%**	**4.2%**	**0.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	33	5	0	0	0	0	0	1	0	0	0	0	**41**
1:00 AM	1	31	3	0	1	0	0	0	0	0	0	0	0	**36**
2:00 AM	0	9	2	0	2	0	0	0	0	0	0	0	0	**13**
3:00 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	55	12	0	5	0	0	0	0	0	0	0	0	**72**
5:00 AM	0	119	26	0	5	1	0	0	0	0	0	0	0	**151**
6:00 AM	2	317	57	0	27	2	0	1	1	1	0	0	0	**408**
7:00 AM	5	620	107	0	35	4	0	1	0	0	0	0	0	**772**
8:00 AM	3	767	120	0	36	6	0	0	1	1	0	0	1	**935**
9:00 AM	4	706	119	0	27	1	0	0	0	1	0	0	1	**859**
10:00 AM	2	604	143	0	24	8	0	0	2	2	0	0	0	**785**
11:00 AM	1	579	104	0	35	8	0	1	0	0	0	0	0	**728**
12:00 PM	2	669	91	0	35	5	0	0	0	1	0	0	0	**803**
1:00 PM	3	611	108	0	28	5	0	0	1	0	0	0	0	**756**
2:00 PM	5	714	95	0	38	8	0	1	0	4	1	0	0	**866**
3:00 PM	5	797	124	0	39	8	0	0	0	0	0	0	0	**973**
4:00 PM	2	872	100	0	20	10	0	0	1	0	0	0	0	**1,005**
5:00 PM	7	749	72	0	16	6	0	1	0	0	0	0	0	**851**
6:00 PM	0	625	84	2	22	1	0	0	0	1	0	0	0	**735**
7:00 PM	2	544	66	0	16	1	0	0	0	1	0	0	0	**630**
8:00 PM	0	390	38	0	7	0	0	0	0	0	0	0	0	**435**
9:00 PM	3	294	33	0	13	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	120	11	0	5	1	0	0	0	0	0	0	0	**137**
11:00 PM	0	93	9	0	2	0	0	0	2	0	0	0	0	**106**
Total	**49**	**10,329**	**1,530**	**2**	**439**	**76**	**0**	**5**	**9**	**12**	**1**	**0**	**2**	**12,454**
Percent	**0.4%**	**82.9%**	**12.3%**	**0.0%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	47	2	0	1	0	0	0	0	0	0	0	0	**50**
1:00 AM	0	16	8	0	1	0	0	0	0	0	0	0	0	**25**
2:00 AM	0	15	1	0	0	0	0	0	1	0	0	0	0	**17**
3:00 AM	0	9	1	0	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	31	2	0	2	0	0	0	1	0	0	0	0	**36**
5:00 AM	0	80	16	1	16	1	0	0	0	0	0	0	0	**114**
6:00 AM	5	246	48	1	17	2	0	0	1	0	0	0	0	**320**
7:00 AM	4	456	87	0	29	2	0	0	0	1	0	0	2	**581**
8:00 AM	2	656	168	0	47	4	0	0	3	0	0	0	1	**881**
9:00 AM	0	480	112	1	38	1	0	1	1	0	0	0	0	**634**
10:00 AM	1	518	144	0	28	2	0	1	0	2	0	0	0	**696**
11:00 AM	2	469	115	0	30	2	0	0	1	0	0	0	1	**620**
12:00 PM	2	521	130	0	41	3	0	1	0	1	0	0	0	**699**
1:00 PM	4	594	137	0	35	1	0	1	1	3	0	0	1	**777**
2:00 PM	2	611	131	0	40	0	0	0	1	1	0	0	0	**786**
3:00 PM	5	761	203	0	40	4	0	2	0	2	0	0	2	**1,019**
4:00 PM	2	691	155	0	29	3	0	1	1	1	0	0	2	**885**
5:00 PM	2	722	154	0	22	3	0	0	0	1	0	0	1	**905**
6:00 PM	3	632	103	0	17	3	0	1	0	1	0	0	0	**760**
7:00 PM	3	467	78	0	18	0	0	0	0	2	0	0	0	**568**
8:00 PM	3	361	58	0	12	0	0	0	0	0	0	0	0	**434**
9:00 PM	0	319	32	0	10	0	0	0	0	0	0	0	0	**361**
10:00 PM	1	201	21	0	6	0	0	0	2	0	0	0	0	**231**
11:00 PM	1	98	9	0	1	0	0	0	0	0	0	0	0	**109**
Total	**42**	**9,001**	**1,915**	**3**	**481**	**31**	**0**	**8**	**13**	**15**	**0**	**0**	**10**	**11,519**
Percent	**0.4%**	**78.1%**	**16.6%**	**0.0%**	**4.2%**	**0.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 - 5/1/2019
Site Code: 19

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	41	50	91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	50	91
1:00 AM	36	25	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	25	61
2:00 AM	13	17	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	17	30
3:00 AM	13	11	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	11	24
4:00 AM	72	36	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	36	108
5:00 AM	151	114	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	114	265
6:00 AM	408	320	728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	408	320	728
7:00 AM	772	581	1,353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	772	581	1,353
8:00 AM	**935**	**881**	**1,816**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**935**	**881**	**1,816**
9:00 AM	859	634	1,493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	859	634	1,493
10:00 AM	785	696	1,481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	785	696	1,481
11:00 AM	728	620	1,348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	728	620	1,348
12:00 PM	803	699	1,502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	803	699	1,502
1:00 PM	756	777	1,533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	756	777	1,533
2:00 PM	866	786	1,652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	866	786	1,652
3:00 PM	973	**1,019**	**1,992**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	973	**1,019**	**1,992**
4:00 PM	**1,005**	885	1,890	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,005**	885	1,890
5:00 PM	851	905	1,756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	851	905	1,756
6:00 PM	735	760	1,495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	735	760	1,495
7:00 PM	630	568	1,198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	630	568	1,198
8:00 PM	435	434	869	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	435	434	869
9:00 PM	344	361	705	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344	361	705
10:00 PM	137	231	368	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	231	368
11:00 PM	106	109	215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	109	215
Total	12,454	11,519	23,973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,454	11,519	23,973
Percent	52%	48%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	935	881	1,816	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	935	881	1,816
PM Peak	16:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	15:00	15:00
Vol.	1,005	1,019	1,992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,005	1,019	1,992

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Grand Ave, B/W Villa & Mission

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 20

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	14	2,179	323	1	140	2	0	0	0	0	0	0	0	2,659
Percent	0.5%	81.9%	12.1%	0.0%	5.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	10	1,988	309	0	141	1	0	0	0	0	0	0	0	2,449
Percent	0.4%	81.2%	12.6%	0.0%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	24	4,167	632	1	281	3	0	0	0	0	0	0	0	5,108
Percent	0.5%	81.6%	12.4%	0.0%	5.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	8	1	0	0	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	18	9	0	4	0	0	0	0	0	0	0	0	**31**
7:00 AM	2	122	22	0	5	0	0	0	0	0	0	0	0	**151**
8:00 AM	0	177	36	0	14	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	180	21	0	10	0	0	0	0	0	0	0	0	**211**
10:00 AM	3	116	26	0	9	0	0	0	0	0	0	0	0	**154**
11:00 AM	1	134	20	0	11	0	0	0	0	0	0	0	0	**166**
12:00 PM	1	138	26	0	13	0	0	0	0	0	0	0	0	**178**
1:00 PM	1	164	26	0	12	1	0	0	0	0	0	0	0	**204**
2:00 PM	0	154	18	0	9	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	183	22	0	14	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	167	20	0	10	0	0	0	0	0	0	0	0	**201**
5:00 PM	1	162	24	0	8	0	0	0	0	0	0	0	0	**195**
6:00 PM	1	184	19	0	5	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	105	18	1	8	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	75	7	0	3	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	45	1	0	3	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	**14**
Total	**14**	**2,179**	**323**	**1**	**140**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.5%**	**81.9%**	**12.1%**	**0.0%**	**5.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	**24**
6:00 AM	0	30	2	0	6	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	91	17	0	8	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	116	29	0	8	0	0	0	0	0	0	0	0	**153**
9:00 AM	0	115	20	0	15	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	99	14	0	9	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	123	25	0	10	0	0	0	0	0	0	0	0	**159**
12:00 PM	1	128	16	0	8	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	164	22	0	9	0	0	0	0	0	0	0	0	**196**
2:00 PM	1	130	25	0	15	0	0	0	0	0	0	0	0	**171**
3:00 PM	1	177	32	0	9	0	0	0	0	0	0	0	0	**219**
4:00 PM	1	166	27	0	9	0	0	0	0	0	0	0	0	**203**
5:00 PM	2	183	22	0	13	0	0	0	0	0	0	0	0	**220**
6:00 PM	0	164	15	0	9	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	98	16	0	6	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	103	13	0	4	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
10:00 PM	1	24	2	0	1	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
Total	**10**	**1,988**	**309**	**0**	**141**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.4%**	**81.2%**	**12.6%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	8	1	0	0	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	18	9	0	4	0	0	0	0	0	0	0	0	**31**
7:00 AM	2	122	22	0	5	0	0	0	0	0	0	0	0	**151**
8:00 AM	0	177	36	0	14	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	180	21	0	10	0	0	0	0	0	0	0	0	**211**
10:00 AM	3	116	26	0	9	0	0	0	0	0	0	0	0	**154**
11:00 AM	1	134	20	0	11	0	0	0	0	0	0	0	0	**166**
12:00 PM	1	138	26	0	13	0	0	0	0	0	0	0	0	**178**
1:00 PM	1	164	26	0	12	1	0	0	0	0	0	0	0	**204**
2:00 PM	0	154	18	0	9	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	183	22	0	14	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	167	20	0	10	0	0	0	0	0	0	0	0	**201**
5:00 PM	1	162	24	0	8	0	0	0	0	0	0	0	0	**195**
6:00 PM	1	184	19	0	5	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	105	18	1	8	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	75	7	0	3	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	45	1	0	3	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	**14**
Total	**14**	**2,179**	**323**	**1**	**140**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.5%**	**81.9%**	**12.1%**	**0.0%**	**5.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	**24**
6:00 AM	0	30	2	0	6	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	91	17	0	8	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	116	29	0	8	0	0	0	0	0	0	0	0	**153**
9:00 AM	0	115	20	0	15	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	99	14	0	9	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	123	25	0	10	0	0	0	0	0	0	0	0	**159**
12:00 PM	1	128	16	0	8	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	164	22	0	9	0	0	0	0	0	0	0	0	**196**
2:00 PM	1	130	25	0	15	0	0	0	0	0	0	0	0	**171**
3:00 PM	1	177	32	0	9	0	0	0	0	0	0	0	0	**219**
4:00 PM	1	166	27	0	9	0	0	0	0	0	0	0	0	**203**
5:00 PM	2	183	22	0	13	0	0	0	0	0	0	0	0	**220**
6:00 PM	0	164	15	0	9	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	98	16	0	6	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	103	13	0	4	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
10:00 PM	1	24	2	0	1	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
Total	**10**	**1,988**	**309**	**0**	**141**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.4%**	**81.2%**	**12.6%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	8	1	0	0	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	18	9	0	4	0	0	0	0	0	0	0	0	**31**
7:00 AM	2	122	22	0	5	0	0	0	0	0	0	0	0	**151**
8:00 AM	0	177	36	0	14	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	180	21	0	10	0	0	0	0	0	0	0	0	**211**
10:00 AM	3	116	26	0	9	0	0	0	0	0	0	0	0	**154**
11:00 AM	1	134	20	0	11	0	0	0	0	0	0	0	0	**166**
12:00 PM	1	138	26	0	13	0	0	0	0	0	0	0	0	**178**
1:00 PM	1	164	26	0	12	1	0	0	0	0	0	0	0	**204**
2:00 PM	0	154	18	0	9	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	183	22	0	14	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	167	20	0	10	0	0	0	0	0	0	0	0	**201**
5:00 PM	1	162	24	0	8	0	0	0	0	0	0	0	0	**195**
6:00 PM	1	184	19	0	5	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	105	18	1	8	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	75	7	0	3	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	45	1	0	3	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	**14**
Total	**14**	**2,179**	**323**	**1**	**140**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.5%**	**81.9%**	**12.1%**	**0.0%**	**5.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	**24**
6:00 AM	0	30	2	0	6	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	91	17	0	8	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	116	29	0	8	0	0	0	0	0	0	0	0	**153**
9:00 AM	0	115	20	0	15	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	99	14	0	9	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	123	25	0	10	0	0	0	0	0	0	0	0	**159**
12:00 PM	1	128	16	0	8	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	164	22	0	9	0	0	0	0	0	0	0	0	**196**
2:00 PM	1	130	25	0	15	0	0	0	0	0	0	0	0	**171**
3:00 PM	1	177	32	0	9	0	0	0	0	0	0	0	0	**219**
4:00 PM	1	166	27	0	9	0	0	0	0	0	0	0	0	**203**
5:00 PM	2	183	22	0	13	0	0	0	0	0	0	0	0	**220**
6:00 PM	0	164	15	0	9	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	98	16	0	6	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	103	13	0	4	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
10:00 PM	1	24	2	0	1	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
Total	**10**	**1,988**	**309**	**0**	**141**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.4%**	**81.2%**	**12.6%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 - 4/30/2019
Site Code: 20

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3	9
1:00 AM	6	4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	4	10
2:00 AM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
3:00 AM	0	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	3	3
4:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
5:00 AM	10	24	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	24	34
6:00 AM	31	38	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	38	69
7:00 AM	151	116	267	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	116	267
8:00 AM	**227**	153	**380**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**227**	153	**380**
9:00 AM	211	150	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	150	361
10:00 AM	154	123	277	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	123	277
11:00 AM	166	**159**	325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	**159**	325
12:00 PM	178	153	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178	153	331
1:00 PM	204	196	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	196	400
2:00 PM	181	171	352	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	171	352
3:00 PM	**219**	219	**438**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**219**	219	**438**
4:00 PM	201	203	404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	201	203	404
5:00 PM	195	**220**	415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	**220**	415
6:00 PM	209	188	397	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	188	397
7:00 PM	132	120	252	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	120	252
8:00 PM	85	120	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	120	205
9:00 PM	49	37	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	37	86
10:00 PM	24	28	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	28	52
11:00 PM	14	16	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	16	30
Total	2,659	2,449	5,108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,659	2,449	5,108
Percent	52%	48%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	227	159	380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	159	380
PM Peak	15:00	17:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	15:00
Vol.	219	220	438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	219	220	438

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Grand Ave, B/W Mission Ave & 2nd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 21

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	22	4,781	651	0	178	20	0	5	5	1	0	0	0	5,663
Percent	0.4%	84.4%	11.5%	0.0%	3.1%	0.4%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	61	3,515	412	4	142	54	0	6	4	3	0	0	1	4,202
Percent	1.5%	83.7%	9.8%	0.1%	3.4%	1.3%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	100%
Total	83	8,296	1,063	4	320	74	0	11	9	4	0	0	1	9,865
Percent	0.8%	84.1%	10.8%	0.0%	3.2%	0.8%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	8	1	0	2	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	25	9	0	6	2	0	0	0	0	0	0	0	**42**
6:00 AM	0	105	28	0	6	0	0	0	1	0	0	0	0	**140**
7:00 AM	3	260	69	0	17	3	0	0	0	0	0	0	0	**352**
8:00 AM	2	355	56	0	13	2	0	1	0	0	0	0	0	**429**
9:00 AM	1	202	33	0	11	0	0	0	1	0	0	0	0	**248**
10:00 AM	1	234	36	0	19	0	0	0	0	0	0	0	0	**290**
11:00 AM	2	301	39	0	17	0	0	0	0	0	0	0	0	**359**
12:00 PM	2	316	49	0	9	1	0	1	0	0	0	0	0	**378**
1:00 PM	2	349	40	0	15	3	0	0	0	0	0	0	0	**409**
2:00 PM	1	374	47	0	9	0	0	0	0	0	0	0	0	**431**
3:00 PM	0	427	50	0	10	2	0	1	1	0	0	0	0	**491**
4:00 PM	1	398	29	0	9	1	0	0	1	0	0	0	0	**439**
5:00 PM	2	393	32	0	7	3	0	1	1	1	0	0	0	**440**
6:00 PM	1	373	47	0	11	3	0	0	0	0	0	0	0	**435**
7:00 PM	0	225	31	0	6	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	159	23	0	9	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	129	16	0	0	0	0	1	0	0	0	0	0	**148**
10:00 PM	1	75	10	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	41	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**22**	**4,781**	**651**	**0**	**178**	**20**	**0**	**5**	**5**	**1**	**0**	**0**	**0**	**5,663**
Percent	**0.4%**	**84.4%**	**11.5%**	**0.0%**	**3.1%**	**0.4%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	13	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	11	1	0	2	0	0	0	1	0	0	0	0	**15**
5:00 AM	1	47	9	0	3	1	0	0	0	0	0	0	0	**61**
6:00 AM	2	77	9	0	8	0	0	0	0	0	0	0	0	**96**
7:00 AM	2	149	28	0	11	0	0	1	0	0	0	0	0	**191**
8:00 AM	2	194	28	1	8	1	0	0	0	0	0	0	0	**234**
9:00 AM	2	182	27	1	10	4	0	1	0	0	0	0	0	**227**
10:00 AM	2	164	27	0	11	4	0	0	0	0	0	0	0	**208**
11:00 AM	8	237	22	0	17	1	0	0	0	0	0	0	0	**285**
12:00 PM	2	288	28	0	6	10	0	0	1	2	0	0	0	**337**
1:00 PM	6	273	33	1	17	2	0	0	0	1	0	0	0	**333**
2:00 PM	6	299	27	0	5	5	0	1	0	0	0	0	1	**344**
3:00 PM	5	281	28	0	7	7	0	1	0	0	0	0	0	**329**
4:00 PM	10	305	20	0	7	5	0	1	1	0	0	0	0	**349**
5:00 PM	6	273	25	0	5	3	0	1	0	0	0	0	0	**313**
6:00 PM	3	223	22	0	5	3	0	0	1	0	0	0	0	**257**
7:00 PM	1	162	34	0	10	4	0	0	0	0	0	0	0	**211**
8:00 PM	0	149	18	0	5	2	0	0	0	0	0	0	0	**174**
9:00 PM	2	97	11	0	4	1	0	0	0	0	0	0	0	**115**
10:00 PM	0	51	8	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	22	6	0	0	1	0	0	0	0	0	0	0	**29**
Total	**61**	**3,515**	**412**	**4**	**142**	**54**	**0**	**6**	**4**	**3**	**0**	**0**	**1**	**4,202**
Percent	**1.5%**	**83.7%**	**9.8%**	**0.1%**	**3.4%**	**1.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	8	1	0	2	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	25	9	0	6	2	0	0	0	0	0	0	0	**42**
6:00 AM	0	105	28	0	6	0	0	0	1	0	0	0	0	**140**
7:00 AM	3	260	69	0	17	3	0	0	0	0	0	0	0	**352**
8:00 AM	2	355	56	0	13	2	0	1	0	0	0	0	0	**429**
9:00 AM	1	202	33	0	11	0	0	0	1	0	0	0	0	**248**
10:00 AM	1	234	36	0	19	0	0	0	0	0	0	0	0	**290**
11:00 AM	2	301	39	0	17	0	0	0	0	0	0	0	0	**359**
12:00 PM	2	316	49	0	9	1	0	1	0	0	0	0	0	**378**
1:00 PM	2	349	40	0	15	3	0	0	0	0	0	0	0	**409**
2:00 PM	1	374	47	0	9	0	0	0	0	0	0	0	0	**431**
3:00 PM	0	427	50	0	10	2	0	1	1	0	0	0	0	**491**
4:00 PM	1	398	29	0	9	1	0	0	1	0	0	0	0	**439**
5:00 PM	2	393	32	0	7	3	0	1	1	1	0	0	0	**440**
6:00 PM	1	373	47	0	11	3	0	0	0	0	0	0	0	**435**
7:00 PM	0	225	31	0	6	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	159	23	0	9	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	129	16	0	0	0	0	1	0	0	0	0	0	**148**
10:00 PM	1	75	10	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	41	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**22**	**4,781**	**651**	**0**	**178**	**20**	**0**	**5**	**5**	**1**	**0**	**0**	**0**	**5,663**
Percent	**0.4%**	**84.4%**	**11.5%**	**0.0%**	**3.1%**	**0.4%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	13	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	11	1	0	2	0	0	0	1	0	0	0	0	**15**
5:00 AM	1	47	9	0	3	1	0	0	0	0	0	0	0	**61**
6:00 AM	2	77	9	0	8	0	0	0	0	0	0	0	0	**96**
7:00 AM	2	149	28	0	11	0	0	1	0	0	0	0	0	**191**
8:00 AM	2	194	28	1	8	1	0	0	0	0	0	0	0	**234**
9:00 AM	2	182	27	1	10	4	0	1	0	0	0	0	0	**227**
10:00 AM	2	164	27	0	11	4	0	0	0	0	0	0	0	**208**
11:00 AM	8	237	22	0	17	1	0	0	0	0	0	0	0	**285**
12:00 PM	2	288	28	0	6	10	0	0	1	2	0	0	0	**337**
1:00 PM	6	273	33	1	17	2	0	0	0	1	0	0	0	**333**
2:00 PM	6	299	27	0	5	5	0	1	0	0	0	0	1	**344**
3:00 PM	5	281	28	0	7	7	0	1	0	0	0	0	0	**329**
4:00 PM	10	305	20	0	7	5	0	1	1	0	0	0	0	**349**
5:00 PM	6	273	25	0	5	3	0	1	0	0	0	0	0	**313**
6:00 PM	3	223	22	0	5	3	0	0	1	0	0	0	0	**257**
7:00 PM	1	162	34	0	10	4	0	0	0	0	0	0	0	**211**
8:00 PM	0	149	18	0	5	2	0	0	0	0	0	0	0	**174**
9:00 PM	2	97	11	0	4	1	0	0	0	0	0	0	0	**115**
10:00 PM	0	51	8	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	22	6	0	0	1	0	0	0	0	0	0	0	**29**
Total	**61**	**3,515**	**412**	**4**	**142**	**54**	**0**	**6**	**4**	**3**	**0**	**0**	**1**	**4,202**
Percent	**1.5%**	**83.7%**	**9.8%**	**0.1%**	**3.4%**	**1.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	8	1	0	2	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	25	9	0	6	2	0	0	0	0	0	0	0	**42**
6:00 AM	0	105	28	0	6	0	0	0	1	0	0	0	0	**140**
7:00 AM	3	260	69	0	17	3	0	0	0	0	0	0	0	**352**
8:00 AM	2	355	56	0	13	2	0	1	0	0	0	0	0	**429**
9:00 AM	1	202	33	0	11	0	0	0	1	0	0	0	0	**248**
10:00 AM	1	234	36	0	19	0	0	0	0	0	0	0	0	**290**
11:00 AM	2	301	39	0	17	0	0	0	0	0	0	0	0	**359**
12:00 PM	2	316	49	0	9	1	0	1	0	0	0	0	0	**378**
1:00 PM	2	349	40	0	15	3	0	0	0	0	0	0	0	**409**
2:00 PM	1	374	47	0	9	0	0	0	0	0	0	0	0	**431**
3:00 PM	0	427	50	0	10	2	0	1	1	0	0	0	0	**491**
4:00 PM	1	398	29	0	9	1	0	0	1	0	0	0	0	**439**
5:00 PM	2	393	32	0	7	3	0	1	1	1	0	0	0	**440**
6:00 PM	1	373	47	0	11	3	0	0	0	0	0	0	0	**435**
7:00 PM	0	225	31	0	6	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	159	23	0	9	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	129	16	0	0	0	0	1	0	0	0	0	0	**148**
10:00 PM	1	75	10	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	41	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**22**	**4,781**	**651**	**0**	**178**	**20**	**0**	**5**	**5**	**1**	**0**	**0**	**0**	**5,663**
Percent	**0.4%**	**84.4%**	**11.5%**	**0.0%**	**3.1%**	**0.4%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	13	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	11	1	0	2	0	0	0	1	0	0	0	0	**15**
5:00 AM	1	47	9	0	3	1	0	0	0	0	0	0	0	**61**
6:00 AM	2	77	9	0	8	0	0	0	0	0	0	0	0	**96**
7:00 AM	2	149	28	0	11	0	0	1	0	0	0	0	0	**191**
8:00 AM	2	194	28	1	8	1	0	0	0	0	0	0	0	**234**
9:00 AM	2	182	27	1	10	4	0	1	0	0	0	0	0	**227**
10:00 AM	2	164	27	0	11	4	0	0	0	0	0	0	0	**208**
11:00 AM	8	237	22	0	17	1	0	0	0	0	0	0	0	**285**
12:00 PM	2	288	28	0	6	10	0	0	1	2	0	0	0	**337**
1:00 PM	6	273	33	1	17	2	0	0	0	1	0	0	0	**333**
2:00 PM	6	299	27	0	5	5	0	1	0	0	0	0	1	**344**
3:00 PM	5	281	28	0	7	7	0	1	0	0	0	0	0	**329**
4:00 PM	10	305	20	0	7	5	0	1	1	0	0	0	0	**349**
5:00 PM	6	273	25	0	5	3	0	1	0	0	0	0	0	**313**
6:00 PM	3	223	22	0	5	3	0	0	1	0	0	0	0	**257**
7:00 PM	1	162	34	0	10	4	0	0	0	0	0	0	0	**211**
8:00 PM	0	149	18	0	5	2	0	0	0	0	0	0	0	**174**
9:00 PM	2	97	11	0	4	1	0	0	0	0	0	0	0	**115**
10:00 PM	0	51	8	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	22	6	0	0	1	0	0	0	0	0	0	0	**29**
Total	**61**	**3,515**	**412**	**4**	**142**	**54**	**0**	**6**	**4**	**3**	**0**	**0**	**1**	**4,202**
Percent	**1.5%**	**83.7%**	**9.8%**	**0.1%**	**3.4%**	**1.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 21

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	16	14	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	14	30
1:00 AM	6	10	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	10	16
2:00 AM	8	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	5	13
3:00 AM	7	6	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	6	13
4:00 AM	11	15	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	15	26
5:00 AM	42	61	103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	61	103
6:00 AM	140	96	236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	96	236
7:00 AM	352	191	543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	352	191	543
8:00 AM	**429**	234	**663**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**429**	234	**663**
9:00 AM	248	227	475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248	227	475
10:00 AM	290	208	498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	290	208	498
11:00 AM	359	**285**	644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	359	**285**	644
12:00 PM	378	337	715	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	378	337	715
1:00 PM	409	333	742	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	409	333	742
2:00 PM	431	344	775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	431	344	775
3:00 PM	**491**	329	**820**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**491**	329	**820**
4:00 PM	439	**349**	788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	439	**349**	788
5:00 PM	440	313	753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	440	313	753
6:00 PM	435	257	692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	435	257	692
7:00 PM	262	211	473	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262	211	473
8:00 PM	192	174	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	174	366
9:00 PM	148	115	263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	115	263
10:00 PM	86	59	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	59	145
11:00 PM	44	29	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	29	73
Total	5,663	4,202	9,865	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,663	4,202	9,865
Percent	57%	43%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57%	43%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	429	285	663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	429	285	663
PM Peak	15:00	16:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:00	15:00
Vol.	491	349	820	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	491	349	820

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Hetherton St, B/W Mission Ave & 2nd St

Count Direction: Southbound / Northbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 22

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Southbound	410	11,368	2,341	23	380	281	0	27	67	152	1	0	226	15,276
Percent	2.7%	74.4%	15.3%	0.2%	2.5%	1.8%	0.0%	0.2%	0.4%	1.0%	0.0%	0.0%	1.5%	100%
Northbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	410	11,368	2,341	23	380	281	0	27	67	152	1	0	226	15,276
Percent	2.7%	74.4%	15.3%	0.2%	2.5%	1.8%	0.0%	0.2%	0.4%	1.0%	0.0%	0.0%	1.5%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	7	0	1	1	0	0	0	0	0	0	0	**73**
1:00 AM	0	25	9	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	17	4	0	1	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	28	3	2	3	0	0	0	1	0	0	0	0	**37**
4:00 AM	1	59	17	4	3	3	0	1	0	1	0	0	0	**89**
5:00 AM	7	169	55	1	27	7	0	1	3	3	0	0	2	**275**
6:00 AM	11	470	135	0	43	12	0	3	3	7	0	0	14	**698**
7:00 AM	31	701	153	1	35	20	0	1	2	10	0	0	9	**963**
8:00 AM	37	729	170	0	23	21	0	2	5	8	0	0	15	**1,010**
9:00 AM	38	630	174	1	26	17	0	3	8	14	1	0	25	**937**
10:00 AM	35	607	189	1	26	33	0	1	7	13	0	0	23	**935**
11:00 AM	34	698	181	3	18	20	0	0	6	17	0	0	24	**1,001**
12:00 PM	40	700	166	2	17	26	0	0	5	17	0	0	17	**990**
1:00 PM	29	721	156	0	20	22	0	4	5	14	0	0	19	**990**
2:00 PM	28	705	144	0	13	26	0	3	2	7	0	0	14	**942**
3:00 PM	33	843	117	1	21	21	0	1	1	4	0	0	14	**1,056**
4:00 PM	22	869	130	0	15	15	0	1	2	8	0	0	19	**1,081**
5:00 PM	27	900	142	1	13	8	0	0	6	10	0	0	13	**1,120**
6:00 PM	18	709	107	1	18	10	0	0	5	9	0	0	9	**886**
7:00 PM	9	594	81	1	15	6	0	2	0	7	0	0	3	**718**
8:00 PM	7	415	92	2	15	5	0	2	4	2	0	0	6	**550**
9:00 PM	1	347	56	1	11	3	0	0	2	1	0	0	0	**422**
10:00 PM	2	235	33	1	10	4	0	1	0	0	0	0	0	**286**
11:00 PM	0	133	20	0	6	1	0	1	0	0	0	0	0	**161**
Total	**410**	**11,368**	**2,341**	**23**	**380**	**281**	**0**	**27**	**67**	**152**	**1**	**0**	**226**	**15,276**
Percent	**2.7%**	**74.4%**	**15.3%**	**0.2%**	**2.5%**	**1.8%**	**0.0%**	**0.2%**	**0.4%**	**1.0%**	**0.0%**	**0.0%**	**1.5%**	

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	7	0	1	1	0	0	0	0	0	0	0	**73**
1:00 AM	0	25	9	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	17	4	0	1	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	28	3	2	3	0	0	0	1	0	0	0	0	**37**
4:00 AM	1	59	17	4	3	3	0	1	0	1	0	0	0	**89**
5:00 AM	7	169	55	1	27	7	0	1	3	3	0	0	2	**275**
6:00 AM	11	470	135	0	43	12	0	3	3	7	0	0	14	**698**
7:00 AM	31	701	153	1	35	20	0	1	2	10	0	0	9	**963**
8:00 AM	37	729	170	0	23	21	0	2	5	8	0	0	15	**1,010**
9:00 AM	38	630	174	1	26	17	0	3	8	14	1	0	25	**937**
10:00 AM	35	607	189	1	26	33	0	1	7	13	0	0	23	**935**
11:00 AM	34	698	181	3	18	20	0	0	6	17	0	0	24	**1,001**
12:00 PM	40	700	166	2	17	26	0	0	5	17	0	0	17	**990**
1:00 PM	29	721	156	0	20	22	0	4	5	14	0	0	19	**990**
2:00 PM	28	705	144	0	13	26	0	3	2	7	0	0	14	**942**
3:00 PM	33	843	117	1	21	21	0	1	1	4	0	0	14	**1,056**
4:00 PM	22	869	130	0	15	15	0	1	2	8	0	0	19	**1,081**
5:00 PM	27	900	142	1	13	8	0	0	6	10	0	0	13	**1,120**
6:00 PM	18	709	107	1	18	10	0	0	5	9	0	0	9	**886**
7:00 PM	9	594	81	1	15	6	0	2	0	7	0	0	3	**718**
8:00 PM	7	415	92	2	15	5	0	2	4	2	0	0	6	**550**
9:00 PM	1	347	56	1	11	3	0	0	2	1	0	0	0	**422**
10:00 PM	2	235	33	1	10	4	0	1	0	0	0	0	0	**286**
11:00 PM	0	133	20	0	6	1	0	1	0	0	0	0	0	**161**
Total	**410**	**11,368**	**2,341**	**23**	**380**	**281**	**0**	**27**	**67**	**152**	**1**	**0**	**226**	**15,276**
Percent	**2.7%**	**74.4%**	**15.3%**	**0.2%**	**2.5%**	**1.8%**	**0.0%**	**0.2%**	**0.4%**	**1.0%**	**0.0%**	**0.0%**	**1.5%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	7	0	1	1	0	0	0	0	0	0	0	**73**
1:00 AM	0	25	9	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	17	4	0	1	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	28	3	2	3	0	0	0	1	0	0	0	0	**37**
4:00 AM	1	59	17	4	3	3	0	1	0	1	0	0	0	**89**
5:00 AM	7	169	55	1	27	7	0	1	3	3	0	0	2	**275**
6:00 AM	11	470	135	0	43	12	0	3	3	7	0	0	14	**698**
7:00 AM	31	701	153	1	35	20	0	1	2	10	0	0	9	**963**
8:00 AM	37	729	170	0	23	21	0	2	5	8	0	0	15	**1,010**
9:00 AM	38	630	174	1	26	17	0	3	8	14	1	0	25	**937**
10:00 AM	35	607	189	1	26	33	0	1	7	13	0	0	23	**935**
11:00 AM	34	698	181	3	18	20	0	0	6	17	0	0	24	**1,001**
12:00 PM	40	700	166	2	17	26	0	0	5	17	0	0	17	**990**
1:00 PM	29	721	156	0	20	22	0	4	5	14	0	0	19	**990**
2:00 PM	28	705	144	0	13	26	0	3	2	7	0	0	14	**942**
3:00 PM	33	843	117	1	21	21	0	1	1	4	0	0	14	**1,056**
4:00 PM	22	869	130	0	15	15	0	1	2	8	0	0	19	**1,081**
5:00 PM	27	900	142	1	13	8	0	0	6	10	0	0	13	**1,120**
6:00 PM	18	709	107	1	18	10	0	0	5	9	0	0	9	**886**
7:00 PM	9	594	81	1	15	6	0	2	0	7	0	0	3	**718**
8:00 PM	7	415	92	2	15	5	0	2	4	2	0	0	6	**550**
9:00 PM	1	347	56	1	11	3	0	0	2	1	0	0	0	**422**
10:00 PM	2	235	33	1	10	4	0	1	0	0	0	0	0	**286**
11:00 PM	0	133	20	0	6	1	0	1	0	0	0	0	0	**161**
Total	**410**	**11,368**	**2,341**	**23**	**380**	**281**	**0**	**27**	**67**	**152**	**1**	**0**	**226**	**15,276**
Percent	**2.7%**	**74.4%**	**15.3%**	**0.2%**	**2.5%**	**1.8%**	**0.0%**	**0.2%**	**0.4%**	**1.0%**	**0.0%**	**0.0%**	**1.5%**	

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 22

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total
12:00 AM	73	0	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	0	73
1:00 AM	34	0	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	0	34
2:00 AM	22	0	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	0	22
3:00 AM	37	0	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	0	37
4:00 AM	89	0	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	0	89
5:00 AM	275	0	275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	0	275
6:00 AM	698	0	698	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	698	0	698
7:00 AM	963	0	963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	963	0	963
8:00 AM	**1,010**	0	**1,010**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,010**	0	**1,010**
9:00 AM	937	0	937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	937	0	937
10:00 AM	935	0	935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	935	0	935
11:00 AM	1,001	0	1,001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,001	0	1,001
12:00 PM	990	0	990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	990	0	990
1:00 PM	990	0	990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	990	0	990
2:00 PM	942	0	942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	942	0	942
3:00 PM	1,056	0	1,056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,056	0	1,056
4:00 PM	1,081	0	1,081	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,081	0	1,081
5:00 PM	**1,120**	0	**1,120**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,120**	0	**1,120**
6:00 PM	886	0	886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	886	0	886
7:00 PM	718	0	718	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	718	0	718
8:00 PM	550	0	550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	550	0	550
9:00 PM	422	0	422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	422	0	422
10:00 PM	286	0	286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	286	0	286
11:00 PM	161	0	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	0	161
Total	15,276	-	15,276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,276	-	15,276
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	08:00	-	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	-	08:00
Vol.	1,010	-	1,010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,010	-	1,010
PM Peak	17:00	-	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	-	17:00
Vol.	1,120	-	1,120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,120	-	1,120

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Irwin St, B/W Mission Ave & 2nd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 23

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	80	12,435	2,792	36	552	147	0	26	102	153	5	2	125	16,455
Percent	0.5%	75.6%	17.0%	0.2%	3.4%	0.9%	0.0%	0.2%	0.6%	0.9%	0.0%	0.0%	0.8%	100%
Southbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	80	12,435	2,792	36	552	147	0	26	102	153	5	2	125	16,455
Percent	0.5%	75.6%	17.0%	0.2%	3.4%	0.9%	0.0%	0.2%	0.6%	0.9%	0.0%	0.0%	0.8%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	22	5	8	2	0	1	0	0	0	0	0	**102**
1:00 AM	0	34	8	0	5	3	0	1	0	0	0	0	0	**51**
2:00 AM	1	24	11	1	2	3	0	0	0	0	0	0	0	**42**
3:00 AM	0	22	8	1	3	4	0	0	0	0	0	0	0	**38**
4:00 AM	1	20	10	0	8	0	0	0	2	0	0	0	0	**41**
5:00 AM	3	128	30	0	15	9	0	0	0	0	0	0	0	**185**
6:00 AM	3	303	96	1	32	2	0	2	4	2	0	0	4	**449**
7:00 AM	1	657	164	3	35	8	0	2	5	12	2	0	8	**897**
8:00 AM	9	761	190	6	43	13	0	1	11	7	0	0	7	**1,048**
9:00 AM	3	770	196	2	33	7	0	2	9	6	0	0	5	**1,033**
10:00 AM	3	664	171	2	36	7	0	0	3	15	0	1	10	**912**
11:00 AM	3	743	172	1	42	4	0	2	11	16	0	0	9	**1,003**
12:00 PM	5	755	198	2	32	22	0	2	7	17	2	0	14	**1,056**
1:00 PM	2	841	203	2	33	10	0	0	6	12	0	0	12	**1,121**
2:00 PM	6	812	186	1	43	19	0	2	8	9	0	0	8	**1,094**
3:00 PM	6	802	194	3	41	7	0	4	7	12	1	0	14	**1,091**
4:00 PM	6	920	207	2	40	6	0	3	4	7	0	0	7	**1,202**
5:00 PM	8	928	186	0	23	8	0	1	8	10	0	0	9	**1,181**
6:00 PM	6	980	162	0	21	4	0	1	4	9	0	1	6	**1,194**
7:00 PM	6	696	113	0	20	2	0	0	4	6	0	0	6	**853**
8:00 PM	1	608	94	3	11	2	0	1	6	4	0	0	4	**734**
9:00 PM	2	461	88	0	12	2	0	0	1	3	0	0	1	**570**
10:00 PM	3	298	56	0	8	2	0	1	2	6	0	0	1	**377**
11:00 PM	2	144	27	1	6	1	0	0	0	0	0	0	0	**181**
Total	**80**	**12,435**	**2,792**	**36**	**552**	**147**	**0**	**26**	**102**	**153**	**5**	**2**	**125**	**16,455**
Percent	**0.5%**	**75.6%**	**17.0%**	**0.2%**	**3.4%**	**0.9%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**0.0%**	**0.0%**	**0.8%**	

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	22	5	8	2	0	1	0	0	0	0	0	**102**
1:00 AM	0	34	8	0	5	3	0	1	0	0	0	0	0	**51**
2:00 AM	1	24	11	1	2	3	0	0	0	0	0	0	0	**42**
3:00 AM	0	22	8	1	3	4	0	0	0	0	0	0	0	**38**
4:00 AM	1	20	10	0	8	0	0	0	2	0	0	0	0	**41**
5:00 AM	3	128	30	0	15	9	0	0	0	0	0	0	0	**185**
6:00 AM	3	303	96	1	32	2	0	2	4	2	0	0	4	**449**
7:00 AM	1	657	164	3	35	8	0	2	5	12	2	0	8	**897**
8:00 AM	9	761	190	6	43	13	0	1	11	7	0	0	7	**1,048**
9:00 AM	3	770	196	2	33	7	0	2	9	6	0	0	5	**1,033**
10:00 AM	3	664	171	2	36	7	0	0	3	15	0	1	10	**912**
11:00 AM	3	743	172	1	42	4	0	2	11	16	0	0	9	**1,003**
12:00 PM	5	755	198	2	32	22	0	2	7	17	2	0	14	**1,056**
1:00 PM	2	841	203	2	33	10	0	0	6	12	0	0	12	**1,121**
2:00 PM	6	812	186	1	43	19	0	2	8	9	0	0	8	**1,094**
3:00 PM	6	802	194	3	41	7	0	4	7	12	1	0	14	**1,091**
4:00 PM	6	920	207	2	40	6	0	3	4	7	0	0	7	**1,202**
5:00 PM	8	928	186	0	23	8	0	1	8	10	0	0	9	**1,181**
6:00 PM	6	980	162	0	21	4	0	1	4	9	0	1	6	**1,194**
7:00 PM	6	696	113	0	20	2	0	0	4	6	0	0	6	**853**
8:00 PM	1	608	94	3	11	2	0	1	6	4	0	0	4	**734**
9:00 PM	2	461	88	0	12	2	0	0	1	3	0	0	1	**570**
10:00 PM	3	298	56	0	8	2	0	1	2	6	0	0	1	**377**
11:00 PM	2	144	27	1	6	1	0	0	0	0	0	0	0	**181**
Total	**80**	**12,435**	**2,792**	**36**	**552**	**147**	**0**	**26**	**102**	**153**	**5**	**2**	**125**	**16,455**
Percent	**0.5%**	**75.6%**	**17.0%**	**0.2%**	**3.4%**	**0.9%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**0.0%**	**0.0%**	**0.8%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	22	5	8	2	0	1	0	0	0	0	0	**102**
1:00 AM	0	34	8	0	5	3	0	1	0	0	0	0	0	**51**
2:00 AM	1	24	11	1	2	3	0	0	0	0	0	0	0	**42**
3:00 AM	0	22	8	1	3	4	0	0	0	0	0	0	0	**38**
4:00 AM	1	20	10	0	8	0	0	0	2	0	0	0	0	**41**
5:00 AM	3	128	30	0	15	9	0	0	0	0	0	0	0	**185**
6:00 AM	3	303	96	1	32	2	0	2	4	2	0	0	4	**449**
7:00 AM	1	657	164	3	35	8	0	2	5	12	2	0	8	**897**
8:00 AM	9	761	190	6	43	13	0	1	11	7	0	0	7	**1,048**
9:00 AM	3	770	196	2	33	7	0	2	9	6	0	0	5	**1,033**
10:00 AM	3	664	171	2	36	7	0	0	3	15	0	1	10	**912**
11:00 AM	3	743	172	1	42	4	0	2	11	16	0	0	9	**1,003**
12:00 PM	5	755	198	2	32	22	0	2	7	17	2	0	14	**1,056**
1:00 PM	2	841	203	2	33	10	0	0	6	12	0	0	12	**1,121**
2:00 PM	6	812	186	1	43	19	0	2	8	9	0	0	8	**1,094**
3:00 PM	6	802	194	3	41	7	0	4	7	12	1	0	14	**1,091**
4:00 PM	6	920	207	2	40	6	0	3	4	7	0	0	7	**1,202**
5:00 PM	8	928	186	0	23	8	0	1	8	10	0	0	9	**1,181**
6:00 PM	6	980	162	0	21	4	0	1	4	9	0	1	6	**1,194**
7:00 PM	6	696	113	0	20	2	0	0	4	6	0	0	6	**853**
8:00 PM	1	608	94	3	11	2	0	1	6	4	0	0	4	**734**
9:00 PM	2	461	88	0	12	2	0	0	1	3	0	0	1	**570**
10:00 PM	3	298	56	0	8	2	0	1	2	6	0	0	1	**377**
11:00 PM	2	144	27	1	6	1	0	0	0	0	0	0	0	**181**
Total	**80**	**12,435**	**2,792**	**36**	**552**	**147**	**0**	**26**	**102**	**153**	**5**	**2**	**125**	**16,455**
Percent	**0.5%**	**75.6%**	**17.0%**	**0.2%**	**3.4%**	**0.9%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**0.0%**	**0.0%**	**0.8%**	

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 23

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	102	0	102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	102	0	102
1:00 AM	51	0	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	0	51
2:00 AM	42	0	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	0	42
3:00 AM	38	0	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	0	38
4:00 AM	41	0	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	0	41
5:00 AM	185	0	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	0	185
6:00 AM	449	0	449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	449	0	449
7:00 AM	897	0	897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	897	0	897
8:00 AM	**1,048**	0	**1,048**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,048**	0	**1,048**
9:00 AM	1,033	0	1,033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,033	0	1,033
10:00 AM	912	0	912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	0	912
11:00 AM	1,003	0	1,003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,003	0	1,003
12:00 PM	1,056	0	1,056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,056	0	1,056
1:00 PM	1,121	0	1,121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,121	0	1,121
2:00 PM	1,094	0	1,094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,094	0	1,094
3:00 PM	1,091	0	1,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,091	0	1,091
4:00 PM	**1,202**	0	**1,202**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,202**	0	**1,202**
5:00 PM	1,181	0	1,181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,181	0	1,181
6:00 PM	1,194	0	1,194	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,194	0	1,194
7:00 PM	853	0	853	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	853	0	853
8:00 PM	734	0	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	734	0	734
9:00 PM	570	0	570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	570	0	570
10:00 PM	377	0	377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	377	0	377
11:00 PM	181	0	181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	0	181
Total	16,455	-	16,455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,455	-	16,455
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	08:00	-	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	-	08:00
Vol.	1,048	-	1,048	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,048	-	1,048
PM Peak	16:00	-	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	-	16:00
Vol.	1,202	-	1,202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,202	-	1,202

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Kerner Blvd, Canal & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 24

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	10	1,918	524	0	214	0	0	0	0	0	0	0	0	2,666
Percent	0.4%	71.9%	19.7%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	14	2,110	529	3	153	3	0	0	0	0	0	0	0	2,812
Percent	0.5%	75.0%	18.8%	0.1%	5.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	24	4,028	1,053	3	367	3	0	0	0	0	0	0	0	5,478
Percent	0.4%	73.5%	19.2%	0.1%	6.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	1	0	2	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	12	4	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	53	12	0	13	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	72	22	0	12	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	77	18	0	10	0	0	0	0	0	0	0	0	**106**
9:00 AM	1	57	9	0	9	0	0	0	0	0	0	0	0	**76**
10:00 AM	3	73	14	0	7	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	57	20	0	9	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	69	15	0	8	0	0	0	0	0	0	0	0	**92**
1:00 PM	1	89	19	0	9	0	0	0	0	0	0	0	0	**118**
2:00 PM	0	117	29	0	10	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	115	34	0	9	0	0	0	0	0	0	0	0	**159**
4:00 PM	1	175	57	0	23	0	0	0	0	0	0	0	0	**256**
5:00 PM	0	184	71	0	18	0	0	0	0	0	0	0	0	**273**
6:00 PM	1	164	61	0	20	0	0	0	0	0	0	0	0	**246**
7:00 PM	0	152	44	0	16	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	132	35	0	7	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	122	30	0	14	0	0	0	0	0	0	0	0	**166**
10:00 PM	1	104	15	0	7	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	52	6	0	6	0	0	0	0	0	0	0	0	**64**
Total	**10**	**1,918**	**524**	**0**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.4%**	**71.9%**	**19.7%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	54	17	0	2	0	0	0	0	0	0	0	0	**73**
6:00 AM	1	140	58	0	17	0	0	0	0	0	0	0	0	**216**
7:00 AM	2	123	51	0	19	0	0	0	0	0	0	0	0	**195**
8:00 AM	2	156	28	1	10	0	0	0	0	0	0	0	0	**197**
9:00 AM	1	102	20	0	5	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	92	11	0	4	3	0	0	0	0	0	0	0	**110**
11:00 AM	0	70	20	0	2	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	90	12	0	3	0	0	0	0	0	0	0	0	**105**
1:00 PM	2	104	17	0	5	0	0	0	0	0	0	0	0	**128**
2:00 PM	1	79	22	0	16	0	0	0	0	0	0	0	0	**118**
3:00 PM	1	123	24	0	11	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	147	38	0	3	0	0	0	0	0	0	0	0	**188**
5:00 PM	1	170	48	2	19	0	0	0	0	0	0	0	0	**240**
6:00 PM	0	147	48	0	11	0	0	0	0	0	0	0	0	**206**
7:00 PM	1	168	36	0	12	0	0	0	0	0	0	0	0	**217**
8:00 PM	1	124	26	0	5	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	81	35	0	6	0	0	0	0	0	0	0	0	**122**
10:00 PM	1	72	11	0	1	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	23	0	0	1	0	0	0	0	0	0	0	0	**24**
Total	**14**	**2,110**	**529**	**3**	**153**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**0.5%**	**75.0%**	**18.8%**	**0.1%**	**5.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	1	0	2	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	12	4	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	53	12	0	13	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	72	22	0	12	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	77	18	0	10	0	0	0	0	0	0	0	0	**106**
9:00 AM	1	57	9	0	9	0	0	0	0	0	0	0	0	**76**
10:00 AM	3	73	14	0	7	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	57	20	0	9	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	69	15	0	8	0	0	0	0	0	0	0	0	**92**
1:00 PM	1	89	19	0	9	0	0	0	0	0	0	0	0	**118**
2:00 PM	0	117	29	0	10	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	115	34	0	9	0	0	0	0	0	0	0	0	**159**
4:00 PM	1	175	57	0	23	0	0	0	0	0	0	0	0	**256**
5:00 PM	0	184	71	0	18	0	0	0	0	0	0	0	0	**273**
6:00 PM	1	164	61	0	20	0	0	0	0	0	0	0	0	**246**
7:00 PM	0	152	44	0	16	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	132	35	0	7	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	122	30	0	14	0	0	0	0	0	0	0	0	**166**
10:00 PM	1	104	15	0	7	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	52	6	0	6	0	0	0	0	0	0	0	0	**64**
Total	**10**	**1,918**	**524**	**0**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.4%**	**71.9%**	**19.7%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	54	17	0	2	0	0	0	0	0	0	0	0	**73**
6:00 AM	1	140	58	0	17	0	0	0	0	0	0	0	0	**216**
7:00 AM	2	123	51	0	19	0	0	0	0	0	0	0	0	**195**
8:00 AM	2	156	28	1	10	0	0	0	0	0	0	0	0	**197**
9:00 AM	1	102	20	0	5	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	92	11	0	4	3	0	0	0	0	0	0	0	**110**
11:00 AM	0	70	20	0	2	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	90	12	0	3	0	0	0	0	0	0	0	0	**105**
1:00 PM	2	104	17	0	5	0	0	0	0	0	0	0	0	**128**
2:00 PM	1	79	22	0	16	0	0	0	0	0	0	0	0	**118**
3:00 PM	1	123	24	0	11	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	147	38	0	3	0	0	0	0	0	0	0	0	**188**
5:00 PM	1	170	48	2	19	0	0	0	0	0	0	0	0	**240**
6:00 PM	0	147	48	0	11	0	0	0	0	0	0	0	0	**206**
7:00 PM	1	168	36	0	12	0	0	0	0	0	0	0	0	**217**
8:00 PM	1	124	26	0	5	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	81	35	0	6	0	0	0	0	0	0	0	0	**122**
10:00 PM	1	72	11	0	1	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	23	0	0	1	0	0	0	0	0	0	0	0	**24**
Total	**14**	**2,110**	**529**	**3**	**153**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**0.5%**	**75.0%**	**18.8%**	**0.1%**	**5.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	1	0	2	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	12	4	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	53	12	0	13	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	72	22	0	12	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	77	18	0	10	0	0	0	0	0	0	0	0	**106**
9:00 AM	1	57	9	0	9	0	0	0	0	0	0	0	0	**76**
10:00 AM	3	73	14	0	7	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	57	20	0	9	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	69	15	0	8	0	0	0	0	0	0	0	0	**92**
1:00 PM	1	89	19	0	9	0	0	0	0	0	0	0	0	**118**
2:00 PM	0	117	29	0	10	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	115	34	0	9	0	0	0	0	0	0	0	0	**159**
4:00 PM	1	175	57	0	23	0	0	0	0	0	0	0	0	**256**
5:00 PM	0	184	71	0	18	0	0	0	0	0	0	0	0	**273**
6:00 PM	1	164	61	0	20	0	0	0	0	0	0	0	0	**246**
7:00 PM	0	152	44	0	16	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	132	35	0	7	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	122	30	0	14	0	0	0	0	0	0	0	0	**166**
10:00 PM	1	104	15	0	7	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	52	6	0	6	0	0	0	0	0	0	0	0	**64**
Total	**10**	**1,918**	**524**	**0**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.4%**	**71.9%**	**19.7%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	54	17	0	2	0	0	0	0	0	0	0	0	**73**
6:00 AM	1	140	58	0	17	0	0	0	0	0	0	0	0	**216**
7:00 AM	2	123	51	0	19	0	0	0	0	0	0	0	0	**195**
8:00 AM	2	156	28	1	10	0	0	0	0	0	0	0	0	**197**
9:00 AM	1	102	20	0	5	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	92	11	0	4	3	0	0	0	0	0	0	0	**110**
11:00 AM	0	70	20	0	2	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	90	12	0	3	0	0	0	0	0	0	0	0	**105**
1:00 PM	2	104	17	0	5	0	0	0	0	0	0	0	0	**128**
2:00 PM	1	79	22	0	16	0	0	0	0	0	0	0	0	**118**
3:00 PM	1	123	24	0	11	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	147	38	0	3	0	0	0	0	0	0	0	0	**188**
5:00 PM	1	170	48	2	19	0	0	0	0	0	0	0	0	**240**
6:00 PM	0	147	48	0	11	0	0	0	0	0	0	0	0	**206**
7:00 PM	1	168	36	0	12	0	0	0	0	0	0	0	0	**217**
8:00 PM	1	124	26	0	5	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	81	35	0	6	0	0	0	0	0	0	0	0	**122**
10:00 PM	1	72	11	0	1	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	23	0	0	1	0	0	0	0	0	0	0	0	**24**
Total	**14**	**2,110**	**529**	**3**	**153**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**0.5%**	**75.0%**	**18.8%**	**0.1%**	**5.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 - 4/30/2019
Site Code: 24

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	25	10	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	10	35
1:00 AM	9	6	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	6	15
2:00 AM	8	6	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	6	14
3:00 AM	4	10	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	10	14
4:00 AM	9	21	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	21	30
5:00 AM	19	73	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	73	92
6:00 AM	78	**216**	294	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	**216**	294
7:00 AM	**106**	195	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**106**	195	301
8:00 AM	**106**	197	**303**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**106**	197	**303**
9:00 AM	76	128	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	128	204
10:00 AM	97	110	207	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	110	207
11:00 AM	86	92	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	92	178
12:00 PM	92	105	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	105	197
1:00 PM	118	128	246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	118	128	246
2:00 PM	156	118	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	118	274
3:00 PM	159	159	318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159	159	318
4:00 PM	256	188	444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	188	444
5:00 PM	**273**	**240**	**513**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**273**	**240**	**513**
6:00 PM	246	206	452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246	206	452
7:00 PM	212	217	429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	212	217	429
8:00 PM	174	156	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	174	156	330
9:00 PM	166	122	288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	122	288
10:00 PM	127	85	212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	127	85	212
11:00 PM	64	24	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	24	88
Total	2,666	2,812	5,478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,666	2,812	5,478
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	07:00	06:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	06:00	08:00
Vol.	106	216	303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	216	303
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	273	240	513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	240	513

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 25

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	7	3,262	398	0	127	2	0	1	1	0	0	0	0	3,798
Percent	0.2%	85.9%	10.5%	0.0%	3.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	7	2,850	582	1	216	1	0	1	0	0	0	0	0	3,658
Percent	0.2%	77.9%	15.9%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	14	6,112	980	1	343	3	0	2	1	0	0	0	0	7,456
Percent	0.2%	82.0%	13.1%	0.0%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	35	6	0	4	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	177	20	0	14	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	211	23	0	11	0	0	0	0	0	0	0	0	**245**
9:00 AM	0	129	20	0	7	0	0	0	0	0	0	0	0	**156**
10:00 AM	1	142	24	0	8	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	165	29	0	12	0	0	0	1	0	0	0	0	**207**
12:00 PM	0	182	26	0	9	0	0	0	0	0	0	0	0	**217**
1:00 PM	1	210	24	0	9	1	0	0	0	0	0	0	0	**245**
2:00 PM	0	323	44	0	13	0	0	0	0	0	0	0	0	**380**
3:00 PM	2	293	39	0	13	0	0	0	0	0	0	0	0	**347**
4:00 PM	1	328	42	0	11	0	0	0	0	0	0	0	0	**382**
5:00 PM	1	368	31	0	3	0	0	1	0	0	0	0	0	**404**
6:00 PM	0	247	20	0	5	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	171	19	0	5	0	0	0	0	0	0	0	0	**195**
8:00 PM	1	117	10	0	1	0	0	0	0	0	0	0	0	**129**
9:00 PM	0	95	13	0	2	0	0	0	0	0	0	0	0	**110**
10:00 PM	0	34	2	0	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**7**	**3,262**	**398**	**0**	**127**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.2%**	**85.9%**	**10.5%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	17	3	0	2	0	0	0	0	0	0	0	0	**22**
6:00 AM	1	80	10	0	9	0	0	0	0	0	0	0	0	**100**
7:00 AM	1	372	73	0	24	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	454	81	0	28	0	0	0	0	0	0	0	0	**563**
9:00 AM	1	194	42	1	17	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	107	24	0	18	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	117	20	0	12	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	130	33	0	11	0	0	0	0	0	0	0	0	**174**
1:00 PM	1	135	26	0	16	0	0	0	0	0	0	0	0	**178**
2:00 PM	1	182	42	0	10	1	0	0	0	0	0	0	0	**236**
3:00 PM	0	240	55	0	19	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	203	42	0	13	0	0	1	0	0	0	0	0	**259**
5:00 PM	1	270	56	0	12	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	127	32	0	9	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	99	16	0	7	0	0	0	0	0	0	0	0	**122**
8:00 PM	1	60	13	0	3	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	40	7	0	3	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
Total	**7**	**2,850**	**582**	**1**	**216**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.2%**	**77.9%**	**15.9%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	35	6	0	4	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	177	20	0	14	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	211	23	0	11	0	0	0	0	0	0	0	0	**245**
9:00 AM	0	129	20	0	7	0	0	0	0	0	0	0	0	**156**
10:00 AM	1	142	24	0	8	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	165	29	0	12	0	0	0	1	0	0	0	0	**207**
12:00 PM	0	182	26	0	9	0	0	0	0	0	0	0	0	**217**
1:00 PM	1	210	24	0	9	1	0	0	0	0	0	0	0	**245**
2:00 PM	0	323	44	0	13	0	0	0	0	0	0	0	0	**380**
3:00 PM	2	293	39	0	13	0	0	0	0	0	0	0	0	**347**
4:00 PM	1	328	42	0	11	0	0	0	0	0	0	0	0	**382**
5:00 PM	1	368	31	0	3	0	0	1	0	0	0	0	0	**404**
6:00 PM	0	247	20	0	5	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	171	19	0	5	0	0	0	0	0	0	0	0	**195**
8:00 PM	1	117	10	0	1	0	0	0	0	0	0	0	0	**129**
9:00 PM	0	95	13	0	2	0	0	0	0	0	0	0	0	**110**
10:00 PM	0	34	2	0	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**7**	**3,262**	**398**	**0**	**127**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.2%**	**85.9%**	**10.5%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	17	3	0	2	0	0	0	0	0	0	0	0	**22**
6:00 AM	1	80	10	0	9	0	0	0	0	0	0	0	0	**100**
7:00 AM	1	372	73	0	24	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	454	81	0	28	0	0	0	0	0	0	0	0	**563**
9:00 AM	1	194	42	1	17	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	107	24	0	18	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	117	20	0	12	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	130	33	0	11	0	0	0	0	0	0	0	0	**174**
1:00 PM	1	135	26	0	16	0	0	0	0	0	0	0	0	**178**
2:00 PM	1	182	42	0	10	1	0	0	0	0	0	0	0	**236**
3:00 PM	0	240	55	0	19	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	203	42	0	13	0	0	1	0	0	0	0	0	**259**
5:00 PM	1	270	56	0	12	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	127	32	0	9	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	99	16	0	7	0	0	0	0	0	0	0	0	**122**
8:00 PM	1	60	13	0	3	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	40	7	0	3	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
Total	**7**	**2,850**	**582**	**1**	**216**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.2%**	**77.9%**	**15.9%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	35	6	0	4	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	177	20	0	14	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	211	23	0	11	0	0	0	0	0	0	0	0	**245**
9:00 AM	0	129	20	0	7	0	0	0	0	0	0	0	0	**156**
10:00 AM	1	142	24	0	8	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	165	29	0	12	0	0	0	1	0	0	0	0	**207**
12:00 PM	0	182	26	0	9	0	0	0	0	0	0	0	0	**217**
1:00 PM	1	210	24	0	9	1	0	0	0	0	0	0	0	**245**
2:00 PM	0	323	44	0	13	0	0	0	0	0	0	0	0	**380**
3:00 PM	2	293	39	0	13	0	0	0	0	0	0	0	0	**347**
4:00 PM	1	328	42	0	11	0	0	0	0	0	0	0	0	**382**
5:00 PM	1	368	31	0	3	0	0	1	0	0	0	0	0	**404**
6:00 PM	0	247	20	0	5	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	171	19	0	5	0	0	0	0	0	0	0	0	**195**
8:00 PM	1	117	10	0	1	0	0	0	0	0	0	0	0	**129**
9:00 PM	0	95	13	0	2	0	0	0	0	0	0	0	0	**110**
10:00 PM	0	34	2	0	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**7**	**3,262**	**398**	**0**	**127**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.2%**	**85.9%**	**10.5%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	17	3	0	2	0	0	0	0	0	0	0	0	**22**
6:00 AM	1	80	10	0	9	0	0	0	0	0	0	0	0	**100**
7:00 AM	1	372	73	0	24	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	454	81	0	28	0	0	0	0	0	0	0	0	**563**
9:00 AM	1	194	42	1	17	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	107	24	0	18	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	117	20	0	12	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	130	33	0	11	0	0	0	0	0	0	0	0	**174**
1:00 PM	1	135	26	0	16	0	0	0	0	0	0	0	0	**178**
2:00 PM	1	182	42	0	10	1	0	0	0	0	0	0	0	**236**
3:00 PM	0	240	55	0	19	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	203	42	0	13	0	0	1	0	0	0	0	0	**259**
5:00 PM	1	270	56	0	12	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	127	32	0	9	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	99	16	0	7	0	0	0	0	0	0	0	0	**122**
8:00 PM	1	60	13	0	3	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	40	7	0	3	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
Total	**7**	**2,850**	**582**	**1**	**216**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.2%**	**77.9%**	**15.9%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 - 5/1/2019
Site Code: 25

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	4	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	5
1:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
2:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	2	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6
5:00 AM	21	22	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	22	43
6:00 AM	45	100	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	100	145
7:00 AM	211	470	681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	470	681
8:00 AM	**245**	**563**	**808**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**245**	**563**	**808**
9:00 AM	156	255	411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	255	411
10:00 AM	175	149	324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	149	324
11:00 AM	207	149	356	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	207	149	356
12:00 PM	217	174	391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	217	174	391
1:00 PM	245	178	423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	178	423
2:00 PM	380	236	616	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	380	236	616
3:00 PM	347	314	661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	347	314	661
4:00 PM	382	259	641	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	382	259	641
5:00 PM	**404**	**339**	**743**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**404**	**339**	**743**
6:00 PM	272	168	440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	272	168	440
7:00 PM	195	122	317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	122	317
8:00 PM	129	77	206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	77	206
9:00 PM	110	50	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	50	160
10:00 PM	36	19	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	19	55
11:00 PM	11	6	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	6	17
Total	3,798	3,658	7,456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,798	3,658	7,456
Percent	51%	49%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51%	49%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	245	563	808	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	563	808
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	404	339	743	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	339	743

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Las Gallinas Ave, B/W Freitas & Northgate

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 26

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	55	3,429	359	17	99	163	0	2	3	3	0	0	4	4,134
Percent	1.3%	82.9%	8.7%	0.4%	2.4%	3.9%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%
Southbound	80	2,799	354	5	146	33	0	1	2	1	0	0	1	3,422
Percent	2.3%	81.8%	10.3%	0.1%	4.3%	1.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	135	6,228	713	22	245	196	0	3	5	4	0	0	5	7,556
Percent	1.8%	82.4%	9.4%	0.3%	3.2%	2.6%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	2	0	0	0	1	0	0	0	**19**
1:00 AM	0	3	2	0	1	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	7	1	0	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	34	4	0	1	1	0	0	0	0	0	0	0	**41**
6:00 AM	2	66	18	1	8	5	0	0	0	0	0	0	0	**100**
7:00 AM	8	222	27	4	7	13	0	0	0	0	0	0	0	**281**
8:00 AM	6	326	44	1	7	15	0	0	0	1	0	0	1	**401**
9:00 AM	2	225	31	2	6	10	0	1	0	0	0	0	0	**277**
10:00 AM	2	220	24	1	7	15	0	0	0	0	0	0	0	**269**
11:00 AM	0	235	24	0	14	9	0	0	0	0	0	0	1	**283**
12:00 PM	6	214	26	1	4	5	0	0	1	0	0	0	0	**257**
1:00 PM	4	186	29	1	7	4	0	0	0	0	0	0	0	**231**
2:00 PM	5	197	23	1	6	7	0	0	1	1	0	0	0	**241**
3:00 PM	4	321	29	1	8	8	0	0	0	0	0	0	0	**371**
4:00 PM	2	263	24	2	10	12	0	0	1	0	0	0	0	**314**
5:00 PM	6	291	18	1	5	24	0	0	0	0	0	0	2	**347**
6:00 PM	5	197	2	0	2	17	0	0	0	0	0	0	0	**223**
7:00 PM	0	163	14	1	1	5	0	1	0	0	0	0	0	**185**
8:00 PM	2	77	7	0	0	4	0	0	0	0	0	0	0	**90**
9:00 PM	0	74	5	0	2	4	0	0	0	0	0	0	0	**85**
10:00 PM	0	35	1	0	2	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	40	3	0	0	1	0	0	0	0	0	0	0	**44**
Total	**55**	**3,429**	**359**	**17**	**99**	**163**	**0**	**2**	**3**	**3**	**0**	**0**	**4**	**4,134**
Percent	**1.3%**	**82.9%**	**8.7%**	**0.4%**	**2.4%**	**3.9%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	24	2	0	2	2	0	0	0	0	0	0	0	**32**
6:00 AM	2	52	8	1	7	3	0	0	0	1	0	0	0	**74**
7:00 AM	2	111	15	0	7	3	0	0	0	0	0	0	0	**138**
8:00 AM	3	109	18	1	13	1	0	0	0	0	0	0	0	**145**
9:00 AM	3	143	16	0	7	1	0	0	0	0	0	0	0	**170**
10:00 AM	5	169	21	0	8	2	0	0	1	0	0	0	0	**206**
11:00 AM	5	188	29	1	13	3	0	0	0	0	0	0	0	**239**
12:00 PM	7	193	38	0	8	1	0	0	0	0	0	0	1	**248**
1:00 PM	3	231	26	0	11	2	0	1	0	0	0	0	0	**274**
2:00 PM	4	249	28	0	6	2	0	0	0	0	0	0	0	**289**
3:00 PM	6	249	29	0	16	1	0	0	0	0	0	0	0	**301**
4:00 PM	12	211	30	0	18	3	0	0	0	0	0	0	0	**274**
5:00 PM	11	231	35	1	11	2	0	0	1	0	0	0	0	**292**
6:00 PM	8	183	16	1	9	3	0	0	0	0	0	0	0	**220**
7:00 PM	5	157	16	0	3	0	0	0	0	0	0	0	0	**181**
8:00 PM	2	100	13	0	2	1	0	0	0	0	0	0	0	**118**
9:00 PM	0	90	8	0	2	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	52	1	0	2	1	0	0	0	0	0	0	0	**56**
11:00 PM	0	36	3	0	1	2	0	0	0	0	0	0	0	**42**
Total	**80**	**2,799**	**354**	**5**	**146**	**33**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**3,422**
Percent	**2.3%**	**81.8%**	**10.3%**	**0.1%**	**4.3%**	**1.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	2	0	0	0	1	0	0	0	**19**
1:00 AM	0	3	2	0	1	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	7	1	0	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	34	4	0	1	1	0	0	0	0	0	0	0	**41**
6:00 AM	2	66	18	1	8	5	0	0	0	0	0	0	0	**100**
7:00 AM	8	222	27	4	7	13	0	0	0	0	0	0	0	**281**
8:00 AM	6	326	44	1	7	15	0	0	0	1	0	0	1	**401**
9:00 AM	2	225	31	2	6	10	0	1	0	0	0	0	0	**277**
10:00 AM	2	220	24	1	7	15	0	0	0	0	0	0	0	**269**
11:00 AM	0	235	24	0	14	9	0	0	0	0	0	0	1	**283**
12:00 PM	6	214	26	1	4	5	0	0	1	0	0	0	0	**257**
1:00 PM	4	186	29	1	7	4	0	0	0	0	0	0	0	**231**
2:00 PM	5	197	23	1	6	7	0	0	1	1	0	0	0	**241**
3:00 PM	4	321	29	1	8	8	0	0	0	0	0	0	0	**371**
4:00 PM	2	263	24	2	10	12	0	0	1	0	0	0	0	**314**
5:00 PM	6	291	18	1	5	24	0	0	0	0	0	0	2	**347**
6:00 PM	5	197	2	0	2	17	0	0	0	0	0	0	0	**223**
7:00 PM	0	163	14	1	1	5	0	1	0	0	0	0	0	**185**
8:00 PM	2	77	7	0	0	4	0	0	0	0	0	0	0	**90**
9:00 PM	0	74	5	0	2	4	0	0	0	0	0	0	0	**85**
10:00 PM	0	35	1	0	2	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	40	3	0	0	1	0	0	0	0	0	0	0	**44**
Total	**55**	**3,429**	**359**	**17**	**99**	**163**	**0**	**2**	**3**	**3**	**0**	**0**	**4**	**4,134**
Percent	**1.3%**	**82.9%**	**8.7%**	**0.4%**	**2.4%**	**3.9%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	24	2	0	2	2	0	0	0	0	0	0	0	**32**
6:00 AM	2	52	8	1	7	3	0	0	0	1	0	0	0	**74**
7:00 AM	2	111	15	0	7	3	0	0	0	0	0	0	0	**138**
8:00 AM	3	109	18	1	13	1	0	0	0	0	0	0	0	**145**
9:00 AM	3	143	16	0	7	1	0	0	0	0	0	0	0	**170**
10:00 AM	5	169	21	0	8	2	0	0	1	0	0	0	0	**206**
11:00 AM	5	188	29	1	13	3	0	0	0	0	0	0	0	**239**
12:00 PM	7	193	38	0	8	1	0	0	0	0	0	0	1	**248**
1:00 PM	3	231	26	0	11	2	0	1	0	0	0	0	0	**274**
2:00 PM	4	249	28	0	6	2	0	0	0	0	0	0	0	**289**
3:00 PM	6	249	29	0	16	1	0	0	0	0	0	0	0	**301**
4:00 PM	12	211	30	0	18	3	0	0	0	0	0	0	0	**274**
5:00 PM	11	231	35	1	11	2	0	0	1	0	0	0	0	**292**
6:00 PM	8	183	16	1	9	3	0	0	0	0	0	0	0	**220**
7:00 PM	5	157	16	0	3	0	0	0	0	0	0	0	0	**181**
8:00 PM	2	100	13	0	2	1	0	0	0	0	0	0	0	**118**
9:00 PM	0	90	8	0	2	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	52	1	0	2	1	0	0	0	0	0	0	0	**56**
11:00 PM	0	36	3	0	1	2	0	0	0	0	0	0	0	**42**
Total	**80**	**2,799**	**354**	**5**	**146**	**33**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**3,422**
Percent	**2.3%**	**81.8%**	**10.3%**	**0.1%**	**4.3%**	**1.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	2	0	0	0	1	0	0	0	**19**
1:00 AM	0	3	2	0	1	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	7	1	0	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	34	4	0	1	1	0	0	0	0	0	0	0	**41**
6:00 AM	2	66	18	1	8	5	0	0	0	0	0	0	0	**100**
7:00 AM	8	222	27	4	7	13	0	0	0	0	0	0	0	**281**
8:00 AM	6	326	44	1	7	15	0	0	0	1	0	0	1	**401**
9:00 AM	2	225	31	2	6	10	0	1	0	0	0	0	0	**277**
10:00 AM	2	220	24	1	7	15	0	0	0	0	0	0	0	**269**
11:00 AM	0	235	24	0	14	9	0	0	0	0	0	0	1	**283**
12:00 PM	6	214	26	1	4	5	0	0	1	0	0	0	0	**257**
1:00 PM	4	186	29	1	7	4	0	0	0	0	0	0	0	**231**
2:00 PM	5	197	23	1	6	7	0	0	1	1	0	0	0	**241**
3:00 PM	4	321	29	1	8	8	0	0	0	0	0	0	0	**371**
4:00 PM	2	263	24	2	10	12	0	0	1	0	0	0	0	**314**
5:00 PM	6	291	18	1	5	24	0	0	0	0	0	0	2	**347**
6:00 PM	5	197	2	0	2	17	0	0	0	0	0	0	0	**223**
7:00 PM	0	163	14	1	1	5	0	1	0	0	0	0	0	**185**
8:00 PM	2	77	7	0	0	4	0	0	0	0	0	0	0	**90**
9:00 PM	0	74	5	0	2	4	0	0	0	0	0	0	0	**85**
10:00 PM	0	35	1	0	2	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	40	3	0	0	1	0	0	0	0	0	0	0	**44**
Total	**55**	**3,429**	**359**	**17**	**99**	**163**	**0**	**2**	**3**	**3**	**0**	**0**	**4**	**4,134**
Percent	**1.3%**	**82.9%**	**8.7%**	**0.4%**	**2.4%**	**3.9%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	24	2	0	2	2	0	0	0	0	0	0	0	**32**
6:00 AM	2	52	8	1	7	3	0	0	0	1	0	0	0	**74**
7:00 AM	2	111	15	0	7	3	0	0	0	0	0	0	0	**138**
8:00 AM	3	109	18	1	13	1	0	0	0	0	0	0	0	**145**
9:00 AM	3	143	16	0	7	1	0	0	0	0	0	0	0	**170**
10:00 AM	5	169	21	0	8	2	0	0	1	0	0	0	0	**206**
11:00 AM	5	188	29	1	13	3	0	0	0	0	0	0	0	**239**
12:00 PM	7	193	38	0	8	1	0	0	0	0	0	0	1	**248**
1:00 PM	3	231	26	0	11	2	0	1	0	0	0	0	0	**274**
2:00 PM	4	249	28	0	6	2	0	0	0	0	0	0	0	**289**
3:00 PM	6	249	29	0	16	1	0	0	0	0	0	0	0	**301**
4:00 PM	12	211	30	0	18	3	0	0	0	0	0	0	0	**274**
5:00 PM	11	231	35	1	11	2	0	0	1	0	0	0	0	**292**
6:00 PM	8	183	16	1	9	3	0	0	0	0	0	0	0	**220**
7:00 PM	5	157	16	0	3	0	0	0	0	0	0	0	0	**181**
8:00 PM	2	100	13	0	2	1	0	0	0	0	0	0	0	**118**
9:00 PM	0	90	8	0	2	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	52	1	0	2	1	0	0	0	0	0	0	0	**56**
11:00 PM	0	36	3	0	1	2	0	0	0	0	0	0	0	**42**
Total	**80**	**2,799**	**354**	**5**	**146**	**33**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**3,422**
Percent	**2.3%**	**81.8%**	**10.3%**	**0.1%**	**4.3%**	**1.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 - 5/1/2019
Site Code: 26

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	19	9	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	9	28
1:00 AM	7	4	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	4	11
2:00 AM	7	4	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	4	11
3:00 AM	10	2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	2	12
4:00 AM	13	4	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	4	17
5:00 AM	41	32	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	32	73
6:00 AM	100	74	174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	74	174
7:00 AM	281	138	419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	281	138	419
8:00 AM	**401**	145	**546**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**401**	145	**546**
9:00 AM	277	170	447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	277	170	447
10:00 AM	269	206	475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	269	206	475
11:00 AM	283	**239**	522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	283	**239**	522
12:00 PM	257	248	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	257	248	505
1:00 PM	231	274	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	274	505
2:00 PM	241	289	530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241	289	530
3:00 PM	**371**	**301**	**672**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**371**	**301**	**672**
4:00 PM	314	274	588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	274	588
5:00 PM	347	292	639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	347	292	639
6:00 PM	223	220	443	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	220	443
7:00 PM	185	181	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	181	366
8:00 PM	90	118	208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	118	208
9:00 PM	85	100	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	100	185
10:00 PM	38	56	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	56	94
11:00 PM	44	42	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	42	86
Total	4,134	3,422	7,556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,134	3,422	7,556
Percent	55%	45%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55%	45%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	401	239	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	401	239	546
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	371	301	672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	371	301	672

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 27

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	39	5,175	757	0	214	10	0	2	4	1	0	0	0	6,202
Percent	0.6%	83.4%	12.2%	0.0%	3.5%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	56	5,938	981	0	300	7	0	1	1	1	0	0	0	7,285
Percent	0.8%	81.5%	13.5%	0.0%	4.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	95	11,113	1,738	0	514	17	0	3	5	2	0	0	0	13,487
Percent	0.7%	82.4%	12.9%	0.0%	3.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
5:00 AM	1	38	8	0	0	1	0	0	0	0	0	0	0	**48**
6:00 AM	2	90	20	0	6	1	0	0	0	0	0	0	0	**119**
7:00 AM	0	325	58	0	14	0	0	0	0	0	0	0	0	**397**
8:00 AM	1	367	39	0	15	2	0	0	1	0	0	0	0	**425**
9:00 AM	1	233	26	0	14	1	0	0	1	0	0	0	0	**276**
10:00 AM	2	208	42	0	11	1	0	0	1	0	0	0	0	**265**
11:00 AM	2	267	45	0	19	1	0	0	0	0	0	0	0	**334**
12:00 PM	4	296	33	0	11	1	0	0	0	0	0	0	0	**345**
1:00 PM	3	296	47	0	17	0	0	1	0	0	0	0	0	**364**
2:00 PM	2	387	64	0	18	1	0	0	0	0	0	0	0	**472**
3:00 PM	3	516	99	0	16	0	0	0	0	0	0	0	0	**634**
4:00 PM	3	495	76	0	19	0	0	0	1	0	0	0	0	**594**
5:00 PM	4	502	59	0	11	1	0	1	0	1	0	0	0	**579**
6:00 PM	3	309	44	0	14	0	0	0	0	0	0	0	0	**370**
7:00 PM	1	269	30	0	8	0	0	0	0	0	0	0	0	**308**
8:00 PM	3	205	16	0	9	0	0	0	0	0	0	0	0	**233**
9:00 PM	1	157	26	0	7	0	0	0	0	0	0	0	0	**191**
10:00 PM	2	107	11	0	3	0	0	0	0	0	0	0	0	**123**
11:00 PM	1	55	9	0	0	0	0	0	0	0	0	0	0	**65**
Total	**39**	**5,175**	**757**	**0**	**214**	**10**	**0**	**2**	**4**	**1**	**0**	**0**	**0**	**6,202**
Percent	**0.6%**	**83.4%**	**12.2%**	**0.0%**	**3.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	15	4	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	4	48	15	0	4	0	0	0	0	0	0	0	0	**71**
6:00 AM	3	135	52	0	18	0	0	0	0	0	0	0	0	**208**
7:00 AM	1	381	94	0	25	0	0	1	0	0	0	0	0	**502**
8:00 AM	5	489	90	0	37	1	0	0	0	0	0	0	0	**622**
9:00 AM	2	408	67	0	36	3	0	0	0	0	0	0	0	**516**
10:00 AM	6	345	39	0	22	1	0	0	0	0	0	0	0	**413**
11:00 AM	5	361	56	0	14	0	0	0	1	0	0	0	0	**437**
12:00 PM	3	385	66	0	14	0	0	0	0	0	0	0	0	**468**
1:00 PM	2	384	65	0	22	1	0	0	0	0	0	0	0	**474**
2:00 PM	7	426	62	0	20	0	0	0	0	0	0	0	0	**515**
3:00 PM	3	453	65	0	19	1	0	0	0	1	0	0	0	**542**
4:00 PM	5	479	75	0	15	0	0	0	0	0	0	0	0	**574**
5:00 PM	2	526	77	0	19	0	0	0	0	0	0	0	0	**624**
6:00 PM	2	421	56	0	10	0	0	0	0	0	0	0	0	**489**
7:00 PM	3	249	32	0	10	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	142	27	0	4	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	136	11	0	3	0	0	0	0	0	0	0	0	**150**
10:00 PM	1	88	21	0	3	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
Total	**56**	**5,938**	**981**	**0**	**300**	**7**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**7,285**
Percent	**0.8%**	**81.5%**	**13.5%**	**0.0%**	**4.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
5:00 AM	1	38	8	0	0	1	0	0	0	0	0	0	0	**48**
6:00 AM	2	90	20	0	6	1	0	0	0	0	0	0	0	**119**
7:00 AM	0	325	58	0	14	0	0	0	0	0	0	0	0	**397**
8:00 AM	1	367	39	0	15	2	0	0	1	0	0	0	0	**425**
9:00 AM	1	233	26	0	14	1	0	0	1	0	0	0	0	**276**
10:00 AM	2	208	42	0	11	1	0	0	1	0	0	0	0	**265**
11:00 AM	2	267	45	0	19	1	0	0	0	0	0	0	0	**334**
12:00 PM	4	296	33	0	11	1	0	0	0	0	0	0	0	**345**
1:00 PM	3	296	47	0	17	0	0	1	0	0	0	0	0	**364**
2:00 PM	2	387	64	0	18	1	0	0	0	0	0	0	0	**472**
3:00 PM	3	516	99	0	16	0	0	0	0	0	0	0	0	**634**
4:00 PM	3	495	76	0	19	0	0	0	1	0	0	0	0	**594**
5:00 PM	4	502	59	0	11	1	0	1	0	1	0	0	0	**579**
6:00 PM	3	309	44	0	14	0	0	0	0	0	0	0	0	**370**
7:00 PM	1	269	30	0	8	0	0	0	0	0	0	0	0	**308**
8:00 PM	3	205	16	0	9	0	0	0	0	0	0	0	0	**233**
9:00 PM	1	157	26	0	7	0	0	0	0	0	0	0	0	**191**
10:00 PM	2	107	11	0	3	0	0	0	0	0	0	0	0	**123**
11:00 PM	1	55	9	0	0	0	0	0	0	0	0	0	0	**65**
Total	**39**	**5,175**	**757**	**0**	**214**	**10**	**0**	**2**	**4**	**1**	**0**	**0**	**0**	**6,202**
Percent	**0.6%**	**83.4%**	**12.2%**	**0.0%**	**3.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	15	4	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	4	48	15	0	4	0	0	0	0	0	0	0	0	**71**
6:00 AM	3	135	52	0	18	0	0	0	0	0	0	0	0	**208**
7:00 AM	1	381	94	0	25	0	0	1	0	0	0	0	0	**502**
8:00 AM	5	489	90	0	37	1	0	0	0	0	0	0	0	**622**
9:00 AM	2	408	67	0	36	3	0	0	0	0	0	0	0	**516**
10:00 AM	6	345	39	0	22	1	0	0	0	0	0	0	0	**413**
11:00 AM	5	361	56	0	14	0	0	0	1	0	0	0	0	**437**
12:00 PM	3	385	66	0	14	0	0	0	0	0	0	0	0	**468**
1:00 PM	2	384	65	0	22	1	0	0	0	0	0	0	0	**474**
2:00 PM	7	426	62	0	20	0	0	0	0	0	0	0	0	**515**
3:00 PM	3	453	65	0	19	1	0	0	0	1	0	0	0	**542**
4:00 PM	5	479	75	0	15	0	0	0	0	0	0	0	0	**574**
5:00 PM	2	526	77	0	19	0	0	0	0	0	0	0	0	**624**
6:00 PM	2	421	56	0	10	0	0	0	0	0	0	0	0	**489**
7:00 PM	3	249	32	0	10	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	142	27	0	4	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	136	11	0	3	0	0	0	0	0	0	0	0	**150**
10:00 PM	1	88	21	0	3	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
Total	**56**	**5,938**	**981**	**0**	**300**	**7**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**7,285**
Percent	**0.8%**	**81.5%**	**13.5%**	**0.0%**	**4.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
5:00 AM	1	38	8	0	0	1	0	0	0	0	0	0	0	**48**
6:00 AM	2	90	20	0	6	1	0	0	0	0	0	0	0	**119**
7:00 AM	0	325	58	0	14	0	0	0	0	0	0	0	0	**397**
8:00 AM	1	367	39	0	15	2	0	0	1	0	0	0	0	**425**
9:00 AM	1	233	26	0	14	1	0	0	1	0	0	0	0	**276**
10:00 AM	2	208	42	0	11	1	0	0	1	0	0	0	0	**265**
11:00 AM	2	267	45	0	19	1	0	0	0	0	0	0	0	**334**
12:00 PM	4	296	33	0	11	1	0	0	0	0	0	0	0	**345**
1:00 PM	3	296	47	0	17	0	0	1	0	0	0	0	0	**364**
2:00 PM	2	387	64	0	18	1	0	0	0	0	0	0	0	**472**
3:00 PM	3	516	99	0	16	0	0	0	0	0	0	0	0	**634**
4:00 PM	3	495	76	0	19	0	0	0	1	0	0	0	0	**594**
5:00 PM	4	502	59	0	11	1	0	1	0	1	0	0	0	**579**
6:00 PM	3	309	44	0	14	0	0	0	0	0	0	0	0	**370**
7:00 PM	1	269	30	0	8	0	0	0	0	0	0	0	0	**308**
8:00 PM	3	205	16	0	9	0	0	0	0	0	0	0	0	**233**
9:00 PM	1	157	26	0	7	0	0	0	0	0	0	0	0	**191**
10:00 PM	2	107	11	0	3	0	0	0	0	0	0	0	0	**123**
11:00 PM	1	55	9	0	0	0	0	0	0	0	0	0	0	**65**
Total	**39**	**5,175**	**757**	**0**	**214**	**10**	**0**	**2**	**4**	**1**	**0**	**0**	**0**	**6,202**
Percent	**0.6%**	**83.4%**	**12.2%**	**0.0%**	**3.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

idax DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	15	4	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	4	48	15	0	4	0	0	0	0	0	0	0	0	**71**
6:00 AM	3	135	52	0	18	0	0	0	0	0	0	0	0	**208**
7:00 AM	1	381	94	0	25	0	0	1	0	0	0	0	0	**502**
8:00 AM	5	489	90	0	37	1	0	0	0	0	0	0	0	**622**
9:00 AM	2	408	67	0	36	3	0	0	0	0	0	0	0	**516**
10:00 AM	6	345	39	0	22	1	0	0	0	0	0	0	0	**413**
11:00 AM	5	361	56	0	14	0	0	0	1	0	0	0	0	**437**
12:00 PM	3	385	66	0	14	0	0	0	0	0	0	0	0	**468**
1:00 PM	2	384	65	0	22	1	0	0	0	0	0	0	0	**474**
2:00 PM	7	426	62	0	20	0	0	0	0	0	0	0	0	**515**
3:00 PM	3	453	65	0	19	1	0	0	0	1	0	0	0	**542**
4:00 PM	5	479	75	0	15	0	0	0	0	0	0	0	0	**574**
5:00 PM	2	526	77	0	19	0	0	0	0	0	0	0	0	**624**
6:00 PM	2	421	56	0	10	0	0	0	0	0	0	0	0	**489**
7:00 PM	3	249	32	0	10	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	142	27	0	4	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	136	11	0	3	0	0	0	0	0	0	0	0	**150**
10:00 PM	1	88	21	0	3	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
Total	**56**	**5,938**	**981**	**0**	**300**	**7**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**7,285**
Percent	**0.8%**	**81.5%**	**13.5%**	**0.0%**	**4.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 27

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	14	21	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	21	35
1:00 AM	10	10	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	20
2:00 AM	14	9	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	9	23
3:00 AM	5	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2	7
4:00 AM	17	7	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	7	24
5:00 AM	48	71	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	71	119
6:00 AM	119	208	327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119	208	327
7:00 AM	397	502	899	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	397	502	899
8:00 AM	**425**	**622**	**1,047**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**425**	**622**	**1,047**
9:00 AM	276	516	792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276	516	792
10:00 AM	265	413	678	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265	413	678
11:00 AM	334	437	771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	334	437	771
12:00 PM	345	468	813	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	345	468	813
1:00 PM	364	474	838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	364	474	838
2:00 PM	472	515	987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	472	515	987
3:00 PM	**634**	542	1,176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**634**	542	1,176
4:00 PM	594	574	1,168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	594	574	1,168
5:00 PM	579	**624**	**1,203**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	579	**624**	**1,203**
6:00 PM	370	489	859	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	370	489	859
7:00 PM	308	294	602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	308	294	602
8:00 PM	233	173	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	173	406
9:00 PM	191	150	341	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	191	150	341
10:00 PM	123	113	236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	113	236
11:00 PM	65	51	116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	51	116
Total	6,202	7,285	13,487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,202	7,285	13,487
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	425	622	1,047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	425	622	1,047
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	634	624	1,203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	634	624	1,203

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lincoln Ave, B/W Mission Ave & 3rd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 28

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	34	2,777	382	2	86	5	0	2	1	0	0	0	0	3,289
Percent	1.0%	84.4%	11.6%	0.1%	2.6%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	93	3,590	608	2	177	70	0	0	3	8	0	0	4	4,555
Percent	2.0%	78.8%	13.3%	0.0%	3.9%	1.5%	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	0.1%	100%
Total	127	6,367	990	4	263	75	0	2	4	8	0	0	4	7,844
Percent	1.6%	81.2%	12.6%	0.1%	3.4%	1.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	2	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	14	2	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	32	15	0	6	0	0	0	0	0	0	0	0	**53**
7:00 AM	1	113	21	0	3	0	0	0	0	0	0	0	0	**138**
8:00 AM	2	152	19	0	7	0	0	1	0	0	0	0	0	**181**
9:00 AM	1	126	11	1	7	1	0	0	1	0	0	0	0	**148**
10:00 AM	1	141	29	0	4	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	172	32	0	7	0	0	0	0	0	0	0	0	**211**
12:00 PM	3	200	19	0	8	0	0	0	0	0	0	0	0	**230**
1:00 PM	2	188	26	0	6	2	0	0	0	0	0	0	0	**224**
2:00 PM	3	191	26	0	9	0	0	0	0	0	0	0	0	**229**
3:00 PM	6	245	28	1	4	0	0	0	0	0	0	0	0	**284**
4:00 PM	0	212	39	0	4	0	0	0	0	0	0	0	0	**255**
5:00 PM	0	200	24	0	5	0	0	1	0	0	0	0	0	**230**
6:00 PM	5	217	20	0	2	1	0	0	0	0	0	0	0	**245**
7:00 PM	3	167	23	0	1	0	0	0	0	0	0	0	0	**194**
8:00 PM	3	159	13	0	5	0	0	0	0	0	0	0	0	**180**
9:00 PM	1	108	16	0	3	0	0	0	0	0	0	0	0	**128**
10:00 PM	1	77	9	0	1	1	0	0	0	0	0	0	0	**89**
11:00 PM	1	41	3	0	1	0	0	0	0	0	0	0	0	**46**
Total	**34**	**2,777**	**382**	**2**	**86**	**5**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3,289**
Percent	**1.0%**	**84.4%**	**11.6%**	**0.1%**	**2.6%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	1	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
4:00 AM	1	7	2	0	4	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	25	14	0	8	0	0	0	0	0	0	0	0	**50**
6:00 AM	4	99	30	0	12	2	0	0	0	0	0	0	0	**147**
7:00 AM	13	253	56	0	14	8	0	0	0	1	0	0	0	**345**
8:00 AM	15	257	56	0	19	5	0	0	0	0	0	0	0	**352**
9:00 AM	2	232	42	0	23	4	0	0	0	0	0	0	1	**304**
10:00 AM	5	199	36	0	9	5	0	0	0	1	0	0	0	**255**
11:00 AM	1	204	39	1	15	3	0	0	0	0	0	0	0	**263**
12:00 PM	3	263	36	0	11	3	0	0	1	0	0	0	0	**317**
1:00 PM	5	224	22	0	13	5	0	0	0	1	0	0	1	**271**
2:00 PM	6	213	34	0	3	6	0	0	1	1	0	0	0	**264**
3:00 PM	7	242	26	1	8	5	0	0	0	0	0	0	0	**289**
4:00 PM	7	267	56	0	8	5	0	0	0	3	0	0	0	**346**
5:00 PM	6	299	56	0	13	4	0	0	1	0	0	0	2	**381**
6:00 PM	5	257	27	0	6	6	0	0	0	0	0	0	0	**301**
7:00 PM	4	201	25	0	4	3	0	0	0	1	0	0	0	**238**
8:00 PM	1	115	21	0	1	3	0	0	0	0	0	0	0	**141**
9:00 PM	1	108	14	0	1	2	0	0	0	0	0	0	0	**126**
10:00 PM	2	69	14	0	2	1	0	0	0	0	0	0	0	**88**
11:00 PM	0	32	1	0	1	0	0	0	0	0	0	0	0	**34**
Total	**93**	**3,590**	**608**	**2**	**177**	**70**	**0**	**0**	**3**	**8**	**0**	**0**	**4**	**4,555**
Percent	**2.0%**	**78.8%**	**13.3%**	**0.0%**	**3.9%**	**1.5%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	2	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	14	2	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	32	15	0	6	0	0	0	0	0	0	0	0	**53**
7:00 AM	1	113	21	0	3	0	0	0	0	0	0	0	0	**138**
8:00 AM	2	152	19	0	7	0	0	1	0	0	0	0	0	**181**
9:00 AM	1	126	11	1	7	1	0	0	1	0	0	0	0	**148**
10:00 AM	1	141	29	0	4	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	172	32	0	7	0	0	0	0	0	0	0	0	**211**
12:00 PM	3	200	19	0	8	0	0	0	0	0	0	0	0	**230**
1:00 PM	2	188	26	0	6	2	0	0	0	0	0	0	0	**224**
2:00 PM	3	191	26	0	9	0	0	0	0	0	0	0	0	**229**
3:00 PM	6	245	28	1	4	0	0	0	0	0	0	0	0	**284**
4:00 PM	0	212	39	0	4	0	0	0	0	0	0	0	0	**255**
5:00 PM	0	200	24	0	5	0	0	1	0	0	0	0	0	**230**
6:00 PM	5	217	20	0	2	1	0	0	0	0	0	0	0	**245**
7:00 PM	3	167	23	0	1	0	0	0	0	0	0	0	0	**194**
8:00 PM	3	159	13	0	5	0	0	0	0	0	0	0	0	**180**
9:00 PM	1	108	16	0	3	0	0	0	0	0	0	0	0	**128**
10:00 PM	1	77	9	0	1	1	0	0	0	0	0	0	0	**89**
11:00 PM	1	41	3	0	1	0	0	0	0	0	0	0	0	**46**
Total	**34**	**2,777**	**382**	**2**	**86**	**5**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3,289**
Percent	**1.0%**	**84.4%**	**11.6%**	**0.1%**	**2.6%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	1	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
4:00 AM	1	7	2	0	4	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	25	14	0	8	0	0	0	0	0	0	0	0	**50**
6:00 AM	4	99	30	0	12	2	0	0	0	0	0	0	0	**147**
7:00 AM	13	253	56	0	14	8	0	0	0	1	0	0	0	**345**
8:00 AM	15	257	56	0	19	5	0	0	0	0	0	0	0	**352**
9:00 AM	2	232	42	0	23	4	0	0	0	0	0	0	1	**304**
10:00 AM	5	199	36	0	9	5	0	0	0	1	0	0	0	**255**
11:00 AM	1	204	39	1	15	3	0	0	0	0	0	0	0	**263**
12:00 PM	3	263	36	0	11	3	0	0	1	0	0	0	0	**317**
1:00 PM	5	224	22	0	13	5	0	0	0	1	0	0	1	**271**
2:00 PM	6	213	34	0	3	6	0	0	1	1	0	0	0	**264**
3:00 PM	7	242	26	1	8	5	0	0	0	0	0	0	0	**289**
4:00 PM	7	267	56	0	8	5	0	0	0	3	0	0	0	**346**
5:00 PM	6	299	56	0	13	4	0	0	1	0	0	0	2	**381**
6:00 PM	5	257	27	0	6	6	0	0	0	0	0	0	0	**301**
7:00 PM	4	201	25	0	4	3	0	0	0	1	0	0	0	**238**
8:00 PM	1	115	21	0	1	3	0	0	0	0	0	0	0	**141**
9:00 PM	1	108	14	0	1	2	0	0	0	0	0	0	0	**126**
10:00 PM	2	69	14	0	2	1	0	0	0	0	0	0	0	**88**
11:00 PM	0	32	1	0	1	0	0	0	0	0	0	0	0	**34**
Total	**93**	**3,590**	**608**	**2**	**177**	**70**	**0**	**0**	**3**	**8**	**0**	**0**	**4**	**4,555**
Percent	**2.0%**	**78.8%**	**13.3%**	**0.0%**	**3.9%**	**1.5%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	2	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	14	2	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	32	15	0	6	0	0	0	0	0	0	0	0	**53**
7:00 AM	1	113	21	0	3	0	0	0	0	0	0	0	0	**138**
8:00 AM	2	152	19	0	7	0	0	1	0	0	0	0	0	**181**
9:00 AM	1	126	11	1	7	1	0	0	1	0	0	0	0	**148**
10:00 AM	1	141	29	0	4	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	172	32	0	7	0	0	0	0	0	0	0	0	**211**
12:00 PM	3	200	19	0	8	0	0	0	0	0	0	0	0	**230**
1:00 PM	2	188	26	0	6	2	0	0	0	0	0	0	0	**224**
2:00 PM	3	191	26	0	9	0	0	0	0	0	0	0	0	**229**
3:00 PM	6	245	28	1	4	0	0	0	0	0	0	0	0	**284**
4:00 PM	0	212	39	0	4	0	0	0	0	0	0	0	0	**255**
5:00 PM	0	200	24	0	5	0	0	1	0	0	0	0	0	**230**
6:00 PM	5	217	20	0	2	1	0	0	0	0	0	0	0	**245**
7:00 PM	3	167	23	0	1	0	0	0	0	0	0	0	0	**194**
8:00 PM	3	159	13	0	5	0	0	0	0	0	0	0	0	**180**
9:00 PM	1	108	16	0	3	0	0	0	0	0	0	0	0	**128**
10:00 PM	1	77	9	0	1	1	0	0	0	0	0	0	0	**89**
11:00 PM	1	41	3	0	1	0	0	0	0	0	0	0	0	**46**
Total	**34**	**2,777**	**382**	**2**	**86**	**5**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3,289**
Percent	**1.0%**	**84.4%**	**11.6%**	**0.1%**	**2.6%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	1	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
4:00 AM	1	7	2	0	4	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	25	14	0	8	0	0	0	0	0	0	0	0	**50**
6:00 AM	4	99	30	0	12	2	0	0	0	0	0	0	0	**147**
7:00 AM	13	253	56	0	14	8	0	0	0	1	0	0	0	**345**
8:00 AM	15	257	56	0	19	5	0	0	0	0	0	0	0	**352**
9:00 AM	2	232	42	0	23	4	0	0	0	0	0	0	1	**304**
10:00 AM	5	199	36	0	9	5	0	0	0	1	0	0	0	**255**
11:00 AM	1	204	39	1	15	3	0	0	0	0	0	0	0	**263**
12:00 PM	3	263	36	0	11	3	0	0	1	0	0	0	0	**317**
1:00 PM	5	224	22	0	13	5	0	0	0	1	0	0	1	**271**
2:00 PM	6	213	34	0	3	6	0	0	1	1	0	0	0	**264**
3:00 PM	7	242	26	1	8	5	0	0	0	0	0	0	0	**289**
4:00 PM	7	267	56	0	8	5	0	0	0	3	0	0	0	**346**
5:00 PM	6	299	56	0	13	4	0	0	1	0	0	0	2	**381**
6:00 PM	5	257	27	0	6	6	0	0	0	0	0	0	0	**301**
7:00 PM	4	201	25	0	4	3	0	0	0	1	0	0	0	**238**
8:00 PM	1	115	21	0	1	3	0	0	0	0	0	0	0	**141**
9:00 PM	1	108	14	0	1	2	0	0	0	0	0	0	0	**126**
10:00 PM	2	69	14	0	2	1	0	0	0	0	0	0	0	**88**
11:00 PM	0	32	1	0	1	0	0	0	0	0	0	0	0	**34**
Total	**93**	**3,590**	**608**	**2**	**177**	**70**	**0**	**0**	**3**	**8**	**0**	**0**	**4**	**4,555**
Percent	**2.0%**	**78.8%**	**13.3%**	**0.0%**	**3.9%**	**1.5%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 28

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	11	10	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	10	21
1:00 AM	8	7	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	7	15
2:00 AM	4	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10
3:00 AM	5	6	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	11
4:00 AM	2	14	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	14	16
5:00 AM	19	50	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	50	69
6:00 AM	53	147	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	147	200
7:00 AM	138	345	483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138	345	483
8:00 AM	181	**352**	**533**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	**352**	**533**
9:00 AM	148	304	452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	304	452
10:00 AM	175	255	430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	255	430
11:00 AM	**211**	263	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**211**	263	474
12:00 PM	230	317	547	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230	317	547
1:00 PM	224	271	495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	224	271	495
2:00 PM	229	264	493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	264	493
3:00 PM	**284**	289	573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**284**	289	573
4:00 PM	255	346	601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255	346	601
5:00 PM	230	**381**	**611**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230	**381**	**611**
6:00 PM	245	301	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	301	546
7:00 PM	194	238	432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	238	432
8:00 PM	180	141	321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	141	321
9:00 PM	128	126	254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128	126	254
10:00 PM	89	88	177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	88	177
11:00 PM	46	34	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	34	80
Total	3,289	4,555	7,844	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,289	4,555	7,844
Percent	42%	58%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42%	58%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	211	352	533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	352	533
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	284	381	611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	284	381	611

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lindaro St, B/W 3rd St & Andersen Dr

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 29

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	34	2,862	514	5	227	16	0	2	0	2	0	0	1	3,663
Percent	0.9%	78.1%	14.0%	0.1%	6.2%	0.4%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Southbound	22	2,120	390	3	181	5	0	0	1	2	0	0	0	2,724
Percent	0.8%	77.8%	14.3%	0.1%	6.6%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	56	4,982	904	8	408	21	0	2	1	4	0	0	1	6,387
Percent	0.9%	78.0%	14.2%	0.1%	6.4%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	12	6	0	2	1	0	0	0	0	0	0	0	**21**
6:00 AM	0	44	20	0	20	1	0	0	0	0	0	0	0	**85**
7:00 AM	1	254	49	3	17	5	0	0	0	0	0	0	0	**329**
8:00 AM	1	154	28	0	15	3	0	1	0	0	0	0	0	**202**
9:00 AM	4	138	37	0	17	0	0	0	0	1	0	0	0	**197**
10:00 AM	0	125	35	1	22	1	0	0	0	0	0	0	0	**184**
11:00 AM	6	196	29	0	16	2	0	0	0	0	0	0	0	**249**
12:00 PM	0	171	40	0	26	0	0	0	0	0	0	0	0	**237**
1:00 PM	1	188	52	0	17	0	0	0	0	0	0	0	0	**258**
2:00 PM	4	264	46	0	14	0	0	0	0	0	0	0	0	**328**
3:00 PM	4	242	35	1	15	2	0	1	0	1	0	0	0	**301**
4:00 PM	1	259	45	0	9	0	0	0	0	0	0	0	0	**314**
5:00 PM	6	289	32	0	11	0	0	0	0	0	0	0	1	**339**
6:00 PM	1	195	24	0	11	0	0	0	0	0	0	0	0	**231**
7:00 PM	3	119	13	0	4	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	77	8	0	4	0	0	0	0	0	0	0	0	**89**
9:00 PM	0	68	9	0	4	1	0	0	0	0	0	0	0	**82**
10:00 PM	1	26	2	0	2	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	22	0	0	1	0	0	0	0	0	0	0	0	**23**
Total	**34**	**2,862**	**514**	**5**	**227**	**16**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**3,663**
Percent	**0.9%**	**78.1%**	**14.0%**	**0.1%**	**6.2%**	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	1	31	8	0	1	1	0	0	0	0	0	0	0	**42**
6:00 AM	2	128	29	0	15	0	0	0	0	0	0	0	0	**174**
7:00 AM	1	250	50	0	10	0	0	0	1	1	0	0	0	**313**
8:00 AM	3	177	35	0	12	0	0	0	0	0	0	0	0	**227**
9:00 AM	3	159	31	1	15	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	114	28	0	18	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	100	24	0	18	0	0	0	0	0	0	0	0	**142**
12:00 PM	0	118	15	1	12	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	131	33	1	9	1	0	0	0	1	0	0	0	**176**
2:00 PM	4	154	23	0	8	1	0	0	0	0	0	0	0	**190**
3:00 PM	2	118	21	0	16	2	0	0	0	0	0	0	0	**159**
4:00 PM	1	171	27	0	14	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	122	17	0	9	0	0	0	0	0	0	0	0	**150**
6:00 PM	2	98	14	0	5	0	0	0	0	0	0	0	0	**119**
7:00 PM	1	87	15	0	9	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	42	7	0	4	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	22	6	0	3	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	18	0	0	1	0	0	0	0	0	0	0	0	**19**
Total	**22**	**2,120**	**390**	**3**	**181**	**5**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2,724**
Percent	**0.8%**	**77.8%**	**14.3%**	**0.1%**	**6.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	12	6	0	2	1	0	0	0	0	0	0	0	**21**
6:00 AM	0	44	20	0	20	1	0	0	0	0	0	0	0	**85**
7:00 AM	1	254	49	3	17	5	0	0	0	0	0	0	0	**329**
8:00 AM	1	154	28	0	15	3	0	1	0	0	0	0	0	**202**
9:00 AM	4	138	37	0	17	0	0	0	0	1	0	0	0	**197**
10:00 AM	0	125	35	1	22	1	0	0	0	0	0	0	0	**184**
11:00 AM	6	196	29	0	16	2	0	0	0	0	0	0	0	**249**
12:00 PM	0	171	40	0	26	0	0	0	0	0	0	0	0	**237**
1:00 PM	1	188	52	0	17	0	0	0	0	0	0	0	0	**258**
2:00 PM	4	264	46	0	14	0	0	0	0	0	0	0	0	**328**
3:00 PM	4	242	35	1	15	2	0	1	0	1	0	0	0	**301**
4:00 PM	1	259	45	0	9	0	0	0	0	0	0	0	0	**314**
5:00 PM	6	289	32	0	11	0	0	0	0	0	0	0	1	**339**
6:00 PM	1	195	24	0	11	0	0	0	0	0	0	0	0	**231**
7:00 PM	3	119	13	0	4	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	77	8	0	4	0	0	0	0	0	0	0	0	**89**
9:00 PM	0	68	9	0	4	1	0	0	0	0	0	0	0	**82**
10:00 PM	1	26	2	0	2	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	22	0	0	1	0	0	0	0	0	0	0	0	**23**
Total	**34**	**2,862**	**514**	**5**	**227**	**16**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**3,663**
Percent	**0.9%**	**78.1%**	**14.0%**	**0.1%**	**6.2%**	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	1	31	8	0	1	1	0	0	0	0	0	0	0	**42**
6:00 AM	2	128	29	0	15	0	0	0	0	0	0	0	0	**174**
7:00 AM	1	250	50	0	10	0	0	0	1	1	0	0	0	**313**
8:00 AM	3	177	35	0	12	0	0	0	0	0	0	0	0	**227**
9:00 AM	3	159	31	1	15	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	114	28	0	18	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	100	24	0	18	0	0	0	0	0	0	0	0	**142**
12:00 PM	0	118	15	1	12	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	131	33	1	9	1	0	0	0	1	0	0	0	**176**
2:00 PM	4	154	23	0	8	1	0	0	0	0	0	0	0	**190**
3:00 PM	2	118	21	0	16	2	0	0	0	0	0	0	0	**159**
4:00 PM	1	171	27	0	14	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	122	17	0	9	0	0	0	0	0	0	0	0	**150**
6:00 PM	2	98	14	0	5	0	0	0	0	0	0	0	0	**119**
7:00 PM	1	87	15	0	9	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	42	7	0	4	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	22	6	0	3	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	18	0	0	1	0	0	0	0	0	0	0	0	**19**
Total	**22**	**2,120**	**390**	**3**	**181**	**5**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2,724**
Percent	**0.8%**	**77.8%**	**14.3%**	**0.1%**	**6.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	12	6	0	2	1	0	0	0	0	0	0	0	**21**
6:00 AM	0	44	20	0	20	1	0	0	0	0	0	0	0	**85**
7:00 AM	1	254	49	3	17	5	0	0	0	0	0	0	0	**329**
8:00 AM	1	154	28	0	15	3	0	1	0	0	0	0	0	**202**
9:00 AM	4	138	37	0	17	0	0	0	0	1	0	0	0	**197**
10:00 AM	0	125	35	1	22	1	0	0	0	0	0	0	0	**184**
11:00 AM	6	196	29	0	16	2	0	0	0	0	0	0	0	**249**
12:00 PM	0	171	40	0	26	0	0	0	0	0	0	0	0	**237**
1:00 PM	1	188	52	0	17	0	0	0	0	0	0	0	0	**258**
2:00 PM	4	264	46	0	14	0	0	0	0	0	0	0	0	**328**
3:00 PM	4	242	35	1	15	2	0	1	0	1	0	0	0	**301**
4:00 PM	1	259	45	0	9	0	0	0	0	0	0	0	0	**314**
5:00 PM	6	289	32	0	11	0	0	0	0	0	0	0	1	**339**
6:00 PM	1	195	24	0	11	0	0	0	0	0	0	0	0	**231**
7:00 PM	3	119	13	0	4	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	77	8	0	4	0	0	0	0	0	0	0	0	**89**
9:00 PM	0	68	9	0	4	1	0	0	0	0	0	0	0	**82**
10:00 PM	1	26	2	0	2	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	22	0	0	1	0	0	0	0	0	0	0	0	**23**
Total	**34**	**2,862**	**514**	**5**	**227**	**16**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**3,663**
Percent	**0.9%**	**78.1%**	**14.0%**	**0.1%**	**6.2%**	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	1	31	8	0	1	1	0	0	0	0	0	0	0	**42**
6:00 AM	2	128	29	0	15	0	0	0	0	0	0	0	0	**174**
7:00 AM	1	250	50	0	10	0	0	0	1	1	0	0	0	**313**
8:00 AM	3	177	35	0	12	0	0	0	0	0	0	0	0	**227**
9:00 AM	3	159	31	1	15	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	114	28	0	18	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	100	24	0	18	0	0	0	0	0	0	0	0	**142**
12:00 PM	0	118	15	1	12	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	131	33	1	9	1	0	0	0	1	0	0	0	**176**
2:00 PM	4	154	23	0	8	1	0	0	0	0	0	0	0	**190**
3:00 PM	2	118	21	0	16	2	0	0	0	0	0	0	0	**159**
4:00 PM	1	171	27	0	14	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	122	17	0	9	0	0	0	0	0	0	0	0	**150**
6:00 PM	2	98	14	0	5	0	0	0	0	0	0	0	0	**119**
7:00 PM	1	87	15	0	9	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	42	7	0	4	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	22	6	0	3	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	18	0	0	1	0	0	0	0	0	0	0	0	**19**
Total	**22**	**2,120**	**390**	**3**	**181**	**5**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2,724**
Percent	**0.8%**	**77.8%**	**14.3%**	**0.1%**	**6.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 - 5/14/2019
Site Code: 29

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	5	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10
1:00 AM	6	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	11
2:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
3:00 AM	5	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	8
4:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
5:00 AM	21	42	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	42	63
6:00 AM	85	174	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	174	259
7:00 AM	**329**	**313**	**642**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**329**	**313**	**642**
8:00 AM	202	227	429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	202	227	429
9:00 AM	197	209	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	209	406
10:00 AM	184	160	344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	184	160	344
11:00 AM	249	142	391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	249	142	391
12:00 PM	237	146	383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	237	146	383
1:00 PM	258	176	434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	258	176	434
2:00 PM	328	190	518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	328	190	518
3:00 PM	301	159	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301	159	460
4:00 PM	314	**213**	**527**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	**213**	**527**
5:00 PM	**339**	150	489	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**339**	150	489
6:00 PM	231	119	350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	119	350
7:00 PM	139	112	251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139	112	251
8:00 PM	89	65	154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	65	154
9:00 PM	82	53	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	53	135
10:00 PM	31	31	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	31	62
11:00 PM	23	19	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	19	42
Total	3,663	2,724	6,387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,663	2,724	6,387
Percent	57%	43%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57%	43%	-
AM Peak	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	07:00	07:00
Vol.	329	313	642	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	329	313	642
PM Peak	17:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	16:00
Vol.	339	213	527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	339	213	527

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Los Ranchitos Rd, Northgate & N San Pedro

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 30

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	20	3,461	415	4	102	7	0	0	0	1	0	0	0	4,010
Percent	0.5%	86.3%	10.3%	0.1%	2.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	66	5,165	511	4	105	7	0	1	0	1	0	0	0	5,860
Percent	1.1%	88.1%	8.7%	0.1%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	86	8,626	926	8	207	14	0	1	0	2	0	0	0	9,870
Percent	0.9%	87.4%	9.4%	0.1%	2.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	17	4	0	2	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	46	9	0	2	0	0	0	0	0	0	0	0	**57**
7:00 AM	0	242	38	0	4	1	0	0	0	0	0	0	0	**285**
8:00 AM	0	208	26	0	11	2	0	0	0	0	0	0	0	**247**
9:00 AM	0	217	25	0	4	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	193	27	0	11	0	0	0	0	0	0	0	0	**232**
11:00 AM	3	212	31	0	9	1	0	0	0	0	0	0	0	**256**
12:00 PM	1	258	35	0	9	0	0	0	0	0	0	0	0	**303**
1:00 PM	1	275	26	0	6	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	269	37	0	12	1	0	0	0	0	0	0	0	**320**
3:00 PM	3	282	34	1	8	1	0	0	0	0	0	0	0	**329**
4:00 PM	5	259	33	0	8	0	0	0	0	0	0	0	0	**305**
5:00 PM	3	283	27	1	3	0	0	0	0	0	0	0	0	**317**
6:00 PM	0	225	21	2	6	1	0	0	0	0	0	0	0	**255**
7:00 PM	1	182	17	0	3	0	0	0	0	1	0	0	0	**204**
8:00 PM	0	118	12	0	2	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	81	2	0	1	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	63	4	0	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**20**	**3,461**	**415**	**4**	**102**	**7**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4,010**
Percent	**0.5%**	**86.3%**	**10.3%**	**0.1%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	22	7	0	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	4	101	10	0	7	0	0	0	0	0	0	0	0	**122**
7:00 AM	6	338	39	4	5	3	0	0	0	0	0	0	0	**395**
8:00 AM	4	463	48	0	12	0	0	0	0	0	0	0	0	**527**
9:00 AM	4	282	42	0	10	1	0	0	0	0	0	0	0	**339**
10:00 AM	4	252	26	0	9	1	0	1	0	0	0	0	0	**293**
11:00 AM	3	268	27	0	9	0	0	0	0	0	0	0	0	**307**
12:00 PM	6	320	37	0	5	0	0	0	0	0	0	0	0	**368**
1:00 PM	5	321	46	0	10	0	0	0	0	0	0	0	0	**382**
2:00 PM	2	365	39	0	6	0	0	0	0	0	0	0	0	**412**
3:00 PM	5	474	45	0	6	2	0	0	0	0	0	0	0	**532**
4:00 PM	7	451	34	0	8	0	0	0	0	0	0	0	0	**500**
5:00 PM	4	533	33	0	3	0	0	0	0	1	0	0	0	**574**
6:00 PM	5	337	21	0	6	0	0	0	0	0	0	0	0	**369**
7:00 PM	4	203	18	0	3	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	161	18	0	2	0	0	0	0	0	0	0	0	**181**
9:00 PM	2	146	13	0	2	0	0	0	0	0	0	0	0	**163**
10:00 PM	0	57	3	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	36	1	0	0	0	0	0	0	0	0	0	0	**37**
Total	**66**	**5,165**	**511**	**4**	**105**	**7**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5,860**
Percent	**1.1%**	**88.1%**	**8.7%**	**0.1%**	**1.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	17	4	0	2	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	46	9	0	2	0	0	0	0	0	0	0	0	**57**
7:00 AM	0	242	38	0	4	1	0	0	0	0	0	0	0	**285**
8:00 AM	0	208	26	0	11	2	0	0	0	0	0	0	0	**247**
9:00 AM	0	217	25	0	4	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	193	27	0	11	0	0	0	0	0	0	0	0	**232**
11:00 AM	3	212	31	0	9	1	0	0	0	0	0	0	0	**256**
12:00 PM	1	258	35	0	9	0	0	0	0	0	0	0	0	**303**
1:00 PM	1	275	26	0	6	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	269	37	0	12	1	0	0	0	0	0	0	0	**320**
3:00 PM	3	282	34	1	8	1	0	0	0	0	0	0	0	**329**
4:00 PM	5	259	33	0	8	0	0	0	0	0	0	0	0	**305**
5:00 PM	3	283	27	1	3	0	0	0	0	0	0	0	0	**317**
6:00 PM	0	225	21	2	6	1	0	0	0	0	0	0	0	**255**
7:00 PM	1	182	17	0	3	0	0	0	0	1	0	0	0	**204**
8:00 PM	0	118	12	0	2	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	81	2	0	1	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	63	4	0	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**20**	**3,461**	**415**	**4**	**102**	**7**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4,010**
Percent	**0.5%**	**86.3%**	**10.3%**	**0.1%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	22	7	0	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	4	101	10	0	7	0	0	0	0	0	0	0	0	**122**
7:00 AM	6	338	39	4	5	3	0	0	0	0	0	0	0	**395**
8:00 AM	4	463	48	0	12	0	0	0	0	0	0	0	0	**527**
9:00 AM	4	282	42	0	10	1	0	0	0	0	0	0	0	**339**
10:00 AM	4	252	26	0	9	1	0	1	0	0	0	0	0	**293**
11:00 AM	3	268	27	0	9	0	0	0	0	0	0	0	0	**307**
12:00 PM	6	320	37	0	5	0	0	0	0	0	0	0	0	**368**
1:00 PM	5	321	46	0	10	0	0	0	0	0	0	0	0	**382**
2:00 PM	2	365	39	0	6	0	0	0	0	0	0	0	0	**412**
3:00 PM	5	474	45	0	6	2	0	0	0	0	0	0	0	**532**
4:00 PM	7	451	34	0	8	0	0	0	0	0	0	0	0	**500**
5:00 PM	4	533	33	0	3	0	0	0	0	1	0	0	0	**574**
6:00 PM	5	337	21	0	6	0	0	0	0	0	0	0	0	**369**
7:00 PM	4	203	18	0	3	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	161	18	0	2	0	0	0	0	0	0	0	0	**181**
9:00 PM	2	146	13	0	2	0	0	0	0	0	0	0	0	**163**
10:00 PM	0	57	3	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	36	1	0	0	0	0	0	0	0	0	0	0	**37**
Total	**66**	**5,165**	**511**	**4**	**105**	**7**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5,860**
Percent	**1.1%**	**88.1%**	**8.7%**	**0.1%**	**1.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

idax DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	17	4	0	2	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	46	9	0	2	0	0	0	0	0	0	0	0	**57**
7:00 AM	0	242	38	0	4	1	0	0	0	0	0	0	0	**285**
8:00 AM	0	208	26	0	11	2	0	0	0	0	0	0	0	**247**
9:00 AM	0	217	25	0	4	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	193	27	0	11	0	0	0	0	0	0	0	0	**232**
11:00 AM	3	212	31	0	9	1	0	0	0	0	0	0	0	**256**
12:00 PM	1	258	35	0	9	0	0	0	0	0	0	0	0	**303**
1:00 PM	1	275	26	0	6	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	269	37	0	12	1	0	0	0	0	0	0	0	**320**
3:00 PM	3	282	34	1	8	1	0	0	0	0	0	0	0	**329**
4:00 PM	5	259	33	0	8	0	0	0	0	0	0	0	0	**305**
5:00 PM	3	283	27	1	3	0	0	0	0	0	0	0	0	**317**
6:00 PM	0	225	21	2	6	1	0	0	0	0	0	0	0	**255**
7:00 PM	1	182	17	0	3	0	0	0	0	1	0	0	0	**204**
8:00 PM	0	118	12	0	2	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	81	2	0	1	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	63	4	0	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**20**	**3,461**	**415**	**4**	**102**	**7**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4,010**
Percent	**0.5%**	**86.3%**	**10.3%**	**0.1%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	22	7	0	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	4	101	10	0	7	0	0	0	0	0	0	0	0	**122**
7:00 AM	6	338	39	4	5	3	0	0	0	0	0	0	0	**395**
8:00 AM	4	463	48	0	12	0	0	0	0	0	0	0	0	**527**
9:00 AM	4	282	42	0	10	1	0	0	0	0	0	0	0	**339**
10:00 AM	4	252	26	0	9	1	0	1	0	0	0	0	0	**293**
11:00 AM	3	268	27	0	9	0	0	0	0	0	0	0	0	**307**
12:00 PM	6	320	37	0	5	0	0	0	0	0	0	0	0	**368**
1:00 PM	5	321	46	0	10	0	0	0	0	0	0	0	0	**382**
2:00 PM	2	365	39	0	6	0	0	0	0	0	0	0	0	**412**
3:00 PM	5	474	45	0	6	2	0	0	0	0	0	0	0	**532**
4:00 PM	7	451	34	0	8	0	0	0	0	0	0	0	0	**500**
5:00 PM	4	533	33	0	3	0	0	0	0	1	0	0	0	**574**
6:00 PM	5	337	21	0	6	0	0	0	0	0	0	0	0	**369**
7:00 PM	4	203	18	0	3	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	161	18	0	2	0	0	0	0	0	0	0	0	**181**
9:00 PM	2	146	13	0	2	0	0	0	0	0	0	0	0	**163**
10:00 PM	0	57	3	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	36	1	0	0	0	0	0	0	0	0	0	0	**37**
Total	**66**	**5,165**	**511**	**4**	**105**	**7**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5,860**
Percent	**1.1%**	**88.1%**	**8.7%**	**0.1%**	**1.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 - 5/1/2019
Site Code: 30

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	16	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	16	22
1:00 AM	5	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10
2:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
3:00 AM	3	7	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	10
4:00 AM	2	9	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	9	11
5:00 AM	23	30	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	30	53
6:00 AM	57	122	179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	122	179
7:00 AM	**285**	395	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**285**	395	680
8:00 AM	247	**527**	**774**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	**527**	**774**
9:00 AM	246	339	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246	339	585
10:00 AM	232	293	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	293	525
11:00 AM	256	307	563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	307	563
12:00 PM	303	368	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	303	368	671
1:00 PM	308	382	690	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	308	382	690
2:00 PM	320	412	732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	320	412	732
3:00 PM	**329**	532	861	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**329**	532	861
4:00 PM	305	500	805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305	500	805
5:00 PM	317	**574**	**891**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	317	**574**	**891**
6:00 PM	255	369	624	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255	369	624
7:00 PM	204	228	432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	228	432
8:00 PM	132	181	313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	181	313
9:00 PM	84	163	247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	163	247
10:00 PM	67	62	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	62	129
11:00 PM	21	37	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	37	58
Total	4,010	5,860	9,870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,010	5,860	9,870
Percent	41%	59%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41%	59%	-
AM Peak	07:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	08:00	08:00
Vol.	285	527	774	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285	527	774
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	329	574	891	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	329	574	891

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 31

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	80	1,865	293	0	97	1	0	1	0	0	0	0	0	2,337
Percent	3.4%	79.8%	12.5%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	15	5,389	698	0	144	20	0	0	1	0	0	0	0	6,267
Percent	0.2%	86.0%	11.1%	0.0%	2.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	95	7,254	991	0	241	21	0	1	1	0	0	0	0	8,604
Percent	1.1%	84.3%	11.5%	0.0%	2.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	1	22	1	0	1	0	0	0	0	0	0	0	0	**25**
7:00 AM	4	109	20	0	4	0	0	0	0	0	0	0	0	**137**
8:00 AM	3	112	25	0	6	0	0	0	0	0	0	0	0	**146**
9:00 AM	3	99	16	0	4	0	0	0	0	0	0	0	0	**122**
10:00 AM	3	98	31	0	9	0	0	0	0	0	0	0	0	**141**
11:00 AM	7	127	17	0	11	0	0	0	0	0	0	0	0	**162**
12:00 PM	7	128	28	0	5	0	0	0	0	0	0	0	0	**168**
1:00 PM	4	150	13	0	7	1	0	0	0	0	0	0	0	**175**
2:00 PM	8	132	16	0	8	0	0	0	0	0	0	0	0	**164**
3:00 PM	5	154	28	0	10	0	0	0	0	0	0	0	0	**197**
4:00 PM	7	150	31	0	10	0	0	0	0	0	0	0	0	**198**
5:00 PM	9	162	23	0	4	0	0	0	0	0	0	0	0	**198**
6:00 PM	6	130	16	0	5	0	0	0	0	0	0	0	0	**157**
7:00 PM	7	99	11	0	5	0	0	1	0	0	0	0	0	**123**
8:00 PM	2	80	6	0	4	0	0	0	0	0	0	0	0	**92**
9:00 PM	1	46	3	0	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	1	37	3	0	2	0	0	0	0	0	0	0	0	**43**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**80**	**1,865**	**293**	**0**	**97**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**3.4%**	**79.8%**	**12.5%**	**0.0%**	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	20	1	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	**40**
6:00 AM	0	108	17	0	11	2	0	0	0	0	0	0	0	**138**
7:00 AM	1	349	60	0	13	2	0	0	0	0	0	0	0	**425**
8:00 AM	2	511	61	0	12	2	0	0	1	0	0	0	0	**589**
9:00 AM	0	323	52	0	19	4	0	0	0	0	0	0	0	**398**
10:00 AM	0	270	39	0	9	0	0	0	0	0	0	0	0	**318**
11:00 AM	0	271	45	0	11	0	0	0	0	0	0	0	0	**327**
12:00 PM	3	302	42	0	7	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	297	54	0	10	1	0	0	0	0	0	0	0	**362**
2:00 PM	2	352	49	0	11	1	0	0	0	0	0	0	0	**415**
3:00 PM	2	436	61	0	7	0	0	0	0	0	0	0	0	**506**
4:00 PM	3	478	46	0	8	1	0	0	0	0	0	0	0	**536**
5:00 PM	0	566	54	0	8	0	0	0	0	0	0	0	0	**628**
6:00 PM	1	368	35	0	4	0	0	0	0	0	0	0	0	**408**
7:00 PM	0	203	24	0	5	3	0	0	0	0	0	0	0	**235**
8:00 PM	1	178	23	0	5	1	0	0	0	0	0	0	0	**208**
9:00 PM	0	176	14	0	1	1	0	0	0	0	0	0	0	**192**
10:00 PM	0	79	6	0	3	0	0	0	0	0	0	0	0	**88**
11:00 PM	0	45	1	0	0	2	0	0	0	0	0	0	0	**48**
Total	**15**	**5,389**	**698**	**0**	**144**	**20**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.2%**	**86.0%**	**11.1%**	**0.0%**	**2.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	1	22	1	0	1	0	0	0	0	0	0	0	0	**25**
7:00 AM	4	109	20	0	4	0	0	0	0	0	0	0	0	**137**
8:00 AM	3	112	25	0	6	0	0	0	0	0	0	0	0	**146**
9:00 AM	3	99	16	0	4	0	0	0	0	0	0	0	0	**122**
10:00 AM	3	98	31	0	9	0	0	0	0	0	0	0	0	**141**
11:00 AM	7	127	17	0	11	0	0	0	0	0	0	0	0	**162**
12:00 PM	7	128	28	0	5	0	0	0	0	0	0	0	0	**168**
1:00 PM	4	150	13	0	7	1	0	0	0	0	0	0	0	**175**
2:00 PM	8	132	16	0	8	0	0	0	0	0	0	0	0	**164**
3:00 PM	5	154	28	0	10	0	0	0	0	0	0	0	0	**197**
4:00 PM	7	150	31	0	10	0	0	0	0	0	0	0	0	**198**
5:00 PM	9	162	23	0	4	0	0	0	0	0	0	0	0	**198**
6:00 PM	6	130	16	0	5	0	0	0	0	0	0	0	0	**157**
7:00 PM	7	99	11	0	5	0	0	1	0	0	0	0	0	**123**
8:00 PM	2	80	6	0	4	0	0	0	0	0	0	0	0	**92**
9:00 PM	1	46	3	0	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	1	37	3	0	2	0	0	0	0	0	0	0	0	**43**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**80**	**1,865**	**293**	**0**	**97**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**3.4%**	**79.8%**	**12.5%**	**0.0%**	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	20	1	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	**40**
6:00 AM	0	108	17	0	11	2	0	0	0	0	0	0	0	**138**
7:00 AM	1	349	60	0	13	2	0	0	0	0	0	0	0	**425**
8:00 AM	2	511	61	0	12	2	0	0	1	0	0	0	0	**589**
9:00 AM	0	323	52	0	19	4	0	0	0	0	0	0	0	**398**
10:00 AM	0	270	39	0	9	0	0	0	0	0	0	0	0	**318**
11:00 AM	0	271	45	0	11	0	0	0	0	0	0	0	0	**327**
12:00 PM	3	302	42	0	7	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	297	54	0	10	1	0	0	0	0	0	0	0	**362**
2:00 PM	2	352	49	0	11	1	0	0	0	0	0	0	0	**415**
3:00 PM	2	436	61	0	7	0	0	0	0	0	0	0	0	**506**
4:00 PM	3	478	46	0	8	1	0	0	0	0	0	0	0	**536**
5:00 PM	0	566	54	0	8	0	0	0	0	0	0	0	0	**628**
6:00 PM	1	368	35	0	4	0	0	0	0	0	0	0	0	**408**
7:00 PM	0	203	24	0	5	3	0	0	0	0	0	0	0	**235**
8:00 PM	1	178	23	0	5	1	0	0	0	0	0	0	0	**208**
9:00 PM	0	176	14	0	1	1	0	0	0	0	0	0	0	**192**
10:00 PM	0	79	6	0	3	0	0	0	0	0	0	0	0	**88**
11:00 PM	0	45	1	0	0	2	0	0	0	0	0	0	0	**48**
Total	**15**	**5,389**	**698**	**0**	**144**	**20**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.2%**	**86.0%**	**11.1%**	**0.0%**	**2.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	1	22	1	0	1	0	0	0	0	0	0	0	0	**25**
7:00 AM	4	109	20	0	4	0	0	0	0	0	0	0	0	**137**
8:00 AM	3	112	25	0	6	0	0	0	0	0	0	0	0	**146**
9:00 AM	3	99	16	0	4	0	0	0	0	0	0	0	0	**122**
10:00 AM	3	98	31	0	9	0	0	0	0	0	0	0	0	**141**
11:00 AM	7	127	17	0	11	0	0	0	0	0	0	0	0	**162**
12:00 PM	7	128	28	0	5	0	0	0	0	0	0	0	0	**168**
1:00 PM	4	150	13	0	7	1	0	0	0	0	0	0	0	**175**
2:00 PM	8	132	16	0	8	0	0	0	0	0	0	0	0	**164**
3:00 PM	5	154	28	0	10	0	0	0	0	0	0	0	0	**197**
4:00 PM	7	150	31	0	10	0	0	0	0	0	0	0	0	**198**
5:00 PM	9	162	23	0	4	0	0	0	0	0	0	0	0	**198**
6:00 PM	6	130	16	0	5	0	0	0	0	0	0	0	0	**157**
7:00 PM	7	99	11	0	5	0	0	1	0	0	0	0	0	**123**
8:00 PM	2	80	6	0	4	0	0	0	0	0	0	0	0	**92**
9:00 PM	1	46	3	0	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	1	37	3	0	2	0	0	0	0	0	0	0	0	**43**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**80**	**1,865**	**293**	**0**	**97**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**3.4%**	**79.8%**	**12.5%**	**0.0%**	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	20	1	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	**40**
6:00 AM	0	108	17	0	11	2	0	0	0	0	0	0	0	**138**
7:00 AM	1	349	60	0	13	2	0	0	0	0	0	0	0	**425**
8:00 AM	2	511	61	0	12	2	0	0	1	0	0	0	0	**589**
9:00 AM	0	323	52	0	19	4	0	0	0	0	0	0	0	**398**
10:00 AM	0	270	39	0	9	0	0	0	0	0	0	0	0	**318**
11:00 AM	0	271	45	0	11	0	0	0	0	0	0	0	0	**327**
12:00 PM	3	302	42	0	7	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	297	54	0	10	1	0	0	0	0	0	0	0	**362**
2:00 PM	2	352	49	0	11	1	0	0	0	0	0	0	0	**415**
3:00 PM	2	436	61	0	7	0	0	0	0	0	0	0	0	**506**
4:00 PM	3	478	46	0	8	1	0	0	0	0	0	0	0	**536**
5:00 PM	0	566	54	0	8	0	0	0	0	0	0	0	0	**628**
6:00 PM	1	368	35	0	4	0	0	0	0	0	0	0	0	**408**
7:00 PM	0	203	24	0	5	3	0	0	0	0	0	0	0	**235**
8:00 PM	1	178	23	0	5	1	0	0	0	0	0	0	0	**208**
9:00 PM	0	176	14	0	1	1	0	0	0	0	0	0	0	**192**
10:00 PM	0	79	6	0	3	0	0	0	0	0	0	0	0	**88**
11:00 PM	0	45	1	0	0	2	0	0	0	0	0	0	0	**48**
Total	**15**	**5,389**	**698**	**0**	**144**	**20**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.2%**	**86.0%**	**11.1%**	**0.0%**	**2.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 - 5/1/2019
Site Code: 31

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	3	21	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	21	24
1:00 AM	3	7	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	10
2:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
3:00 AM	2	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6
4:00 AM	2	16	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	16	18
5:00 AM	14	40	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	40	54
6:00 AM	25	138	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	138	163
7:00 AM	137	425	562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	425	562
8:00 AM	146	**589**	**735**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	**589**	**735**
9:00 AM	122	398	520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	398	520
10:00 AM	141	318	459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	141	318	459
11:00 AM	**162**	327	489	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**162**	327	489
12:00 PM	168	354	522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	168	354	522
1:00 PM	175	362	537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	362	537
2:00 PM	164	415	579	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	415	579
3:00 PM	197	506	703	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	506	703
4:00 PM	**198**	536	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**198**	536	734
5:00 PM	**198**	**628**	**826**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**198**	**628**	**826**
6:00 PM	157	408	565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157	408	565
7:00 PM	123	235	358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	235	358
8:00 PM	92	208	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	208	300
9:00 PM	50	192	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	192	242
10:00 PM	43	88	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	88	131
11:00 PM	12	48	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	48	60
Total	2,337	6,267	8,604	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,337	6,267	8,604
Percent	27%	73%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27%	73%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	162	589	735	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162	589	735
PM Peak	16:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	17:00	17:00
Vol.	198	628	826	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	198	628	826

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 32

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	33	6,170	1,108	14	416	15	0	2	6	0	0	0	0	7,764
Percent	0.4%	79.5%	14.3%	0.2%	5.4%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	52	5,712	601	0	154	77	0	1	1	3	0	0	0	6,601
Percent	0.8%	86.5%	9.1%	0.0%	2.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	85	11,882	1,709	14	570	92	0	3	7	3	0	0	0	14,365
Percent	0.6%	82.7%	11.9%	0.1%	4.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

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Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	4	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	9	3	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	20	6	0	3	1	0	0	0	0	0	0	0	**30**
5:00 AM	0	93	23	0	4	0	0	0	0	0	0	0	0	**120**
6:00 AM	0	202	42	0	12	0	0	0	0	0	0	0	0	**256**
7:00 AM	1	511	82	0	25	0	0	0	0	0	0	0	0	**619**
8:00 AM	3	669	126	1	42	4	0	0	1	0	0	0	0	**846**
9:00 AM	2	479	81	1	39	1	0	0	1	0	0	0	0	**604**
10:00 AM	2	386	78	2	33	0	0	0	0	0	0	0	0	**501**
11:00 AM	2	391	68	3	31	2	0	0	1	0	0	0	0	**498**
12:00 PM	1	368	72	0	41	0	0	0	2	0	0	0	0	**484**
1:00 PM	3	349	76	3	36	2	0	1	0	0	0	0	0	**470**
2:00 PM	4	415	89	2	32	1	0	0	0	0	0	0	0	**543**
3:00 PM	5	461	77	0	31	1	0	0	0	0	0	0	0	**575**
4:00 PM	3	485	77	2	26	1	0	1	0	0	0	0	0	**595**
5:00 PM	3	446	83	0	23	1	0	0	1	0	0	0	0	**557**
6:00 PM	1	307	36	0	17	1	0	0	0	0	0	0	0	**362**
7:00 PM	3	198	37	0	3	0	0	0	0	0	0	0	0	**241**
8:00 PM	0	168	21	0	5	0	0	0	0	0	0	0	0	**194**
9:00 PM	0	112	16	0	1	0	0	0	0	0	0	0	0	**129**
10:00 PM	0	59	7	0	6	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	26	3	0	1	0	0	0	0	0	0	0	0	**30**
Total	**33**	**6,170**	**1,108**	**14**	**416**	**15**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**7,764**
Percent	**0.4%**	**79.5%**	**14.3%**	**0.2%**	**5.4%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	38	4	0	1	1	0	0	0	0	0	0	0	**44**
6:00 AM	0	87	20	0	6	4	0	0	0	0	0	0	0	**117**
7:00 AM	1	279	50	0	17	9	0	0	0	0	0	0	0	**356**
8:00 AM	2	350	37	0	12	11	0	0	0	0	0	0	0	**412**
9:00 AM	3	296	43	0	12	4	0	0	0	0	0	0	0	**358**
10:00 AM	7	293	42	0	11	2	0	0	0	1	0	0	0	**356**
11:00 AM	2	358	55	0	14	2	0	0	1	0	0	0	0	**432**
12:00 PM	5	375	43	0	13	3	0	0	0	1	0	0	0	**440**
1:00 PM	2	398	35	0	11	3	0	0	0	0	0	0	0	**449**
2:00 PM	5	467	43	0	14	7	0	0	0	0	0	0	0	**536**
3:00 PM	0	441	35	0	15	8	0	0	0	0	0	0	0	**499**
4:00 PM	7	441	56	0	9	5	0	1	0	1	0	0	0	**520**
5:00 PM	4	517	43	0	7	5	0	0	0	0	0	0	0	**576**
6:00 PM	8	435	37	0	5	6	0	0	0	0	0	0	0	**491**
7:00 PM	4	287	19	0	2	2	0	0	0	0	0	0	0	**314**
8:00 PM	0	256	13	0	2	1	0	0	0	0	0	0	0	**272**
9:00 PM	2	193	18	0	0	3	0	0	0	0	0	0	0	**216**
10:00 PM	0	103	4	0	1	0	0	0	0	0	0	0	0	**108**
11:00 PM	0	58	2	0	2	1	0	0	0	0	0	0	0	**63**
Total	**52**	**5,712**	**601**	**0**	**154**	**77**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**6,601**
Percent	**0.8%**	**86.5%**	**9.1%**	**0.0%**	**2.3%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	4	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	9	3	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	20	6	0	3	1	0	0	0	0	0	0	0	**30**
5:00 AM	0	93	23	0	4	0	0	0	0	0	0	0	0	**120**
6:00 AM	0	202	42	0	12	0	0	0	0	0	0	0	0	**256**
7:00 AM	1	511	82	0	25	0	0	0	0	0	0	0	0	**619**
8:00 AM	3	669	126	1	42	4	0	0	1	0	0	0	0	**846**
9:00 AM	2	479	81	1	39	1	0	0	1	0	0	0	0	**604**
10:00 AM	2	386	78	2	33	0	0	0	0	0	0	0	0	**501**
11:00 AM	2	391	68	3	31	2	0	0	1	0	0	0	0	**498**
12:00 PM	1	368	72	0	41	0	0	0	2	0	0	0	0	**484**
1:00 PM	3	349	76	3	36	2	0	1	0	0	0	0	0	**470**
2:00 PM	4	415	89	2	32	1	0	0	0	0	0	0	0	**543**
3:00 PM	5	461	77	0	31	1	0	0	0	0	0	0	0	**575**
4:00 PM	3	485	77	2	26	1	0	1	0	0	0	0	0	**595**
5:00 PM	3	446	83	0	23	1	0	0	1	0	0	0	0	**557**
6:00 PM	1	307	36	0	17	1	0	0	0	0	0	0	0	**362**
7:00 PM	3	198	37	0	3	0	0	0	0	0	0	0	0	**241**
8:00 PM	0	168	21	0	5	0	0	0	0	0	0	0	0	**194**
9:00 PM	0	112	16	0	1	0	0	0	0	0	0	0	0	**129**
10:00 PM	0	59	7	0	6	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	26	3	0	1	0	0	0	0	0	0	0	0	**30**
Total	**33**	**6,170**	**1,108**	**14**	**416**	**15**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**7,764**
Percent	**0.4%**	**79.5%**	**14.3%**	**0.2%**	**5.4%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	38	4	0	1	1	0	0	0	0	0	0	0	**44**
6:00 AM	0	87	20	0	6	4	0	0	0	0	0	0	0	**117**
7:00 AM	1	279	50	0	17	9	0	0	0	0	0	0	0	**356**
8:00 AM	2	350	37	0	12	11	0	0	0	0	0	0	0	**412**
9:00 AM	3	296	43	0	12	4	0	0	0	0	0	0	0	**358**
10:00 AM	7	293	42	0	11	2	0	0	0	1	0	0	0	**356**
11:00 AM	2	358	55	0	14	2	0	0	1	0	0	0	0	**432**
12:00 PM	5	375	43	0	13	3	0	0	0	1	0	0	0	**440**
1:00 PM	2	398	35	0	11	3	0	0	0	0	0	0	0	**449**
2:00 PM	5	467	43	0	14	7	0	0	0	0	0	0	0	**536**
3:00 PM	0	441	35	0	15	8	0	0	0	0	0	0	0	**499**
4:00 PM	7	441	56	0	9	5	0	1	0	1	0	0	0	**520**
5:00 PM	4	517	43	0	7	5	0	0	0	0	0	0	0	**576**
6:00 PM	8	435	37	0	5	6	0	0	0	0	0	0	0	**491**
7:00 PM	4	287	19	0	2	2	0	0	0	0	0	0	0	**314**
8:00 PM	0	256	13	0	2	1	0	0	0	0	0	0	0	**272**
9:00 PM	2	193	18	0	0	3	0	0	0	0	0	0	0	**216**
10:00 PM	0	103	4	0	1	0	0	0	0	0	0	0	0	**108**
11:00 PM	0	58	2	0	2	1	0	0	0	0	0	0	0	**63**
Total	**52**	**5,712**	**601**	**0**	**154**	**77**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**6,601**
Percent	**0.8%**	**86.5%**	**9.1%**	**0.0%**	**2.3%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	4	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	9	3	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	20	6	0	3	1	0	0	0	0	0	0	0	**30**
5:00 AM	0	93	23	0	4	0	0	0	0	0	0	0	0	**120**
6:00 AM	0	202	42	0	12	0	0	0	0	0	0	0	0	**256**
7:00 AM	1	511	82	0	25	0	0	0	0	0	0	0	0	**619**
8:00 AM	3	669	126	1	42	4	0	0	1	0	0	0	0	**846**
9:00 AM	2	479	81	1	39	1	0	0	1	0	0	0	0	**604**
10:00 AM	2	386	78	2	33	0	0	0	0	0	0	0	0	**501**
11:00 AM	2	391	68	3	31	2	0	0	1	0	0	0	0	**498**
12:00 PM	1	368	72	0	41	0	0	0	2	0	0	0	0	**484**
1:00 PM	3	349	76	3	36	2	0	1	0	0	0	0	0	**470**
2:00 PM	4	415	89	2	32	1	0	0	0	0	0	0	0	**543**
3:00 PM	5	461	77	0	31	1	0	0	0	0	0	0	0	**575**
4:00 PM	3	485	77	2	26	1	0	1	0	0	0	0	0	**595**
5:00 PM	3	446	83	0	23	1	0	0	1	0	0	0	0	**557**
6:00 PM	1	307	36	0	17	1	0	0	0	0	0	0	0	**362**
7:00 PM	3	198	37	0	3	0	0	0	0	0	0	0	0	**241**
8:00 PM	0	168	21	0	5	0	0	0	0	0	0	0	0	**194**
9:00 PM	0	112	16	0	1	0	0	0	0	0	0	0	0	**129**
10:00 PM	0	59	7	0	6	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	26	3	0	1	0	0	0	0	0	0	0	0	**30**
Total	**33**	**6,170**	**1,108**	**14**	**416**	**15**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**7,764**
Percent	**0.4%**	**79.5%**	**14.3%**	**0.2%**	**5.4%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	38	4	0	1	1	0	0	0	0	0	0	0	**44**
6:00 AM	0	87	20	0	6	4	0	0	0	0	0	0	0	**117**
7:00 AM	1	279	50	0	17	9	0	0	0	0	0	0	0	**356**
8:00 AM	2	350	37	0	12	11	0	0	0	0	0	0	0	**412**
9:00 AM	3	296	43	0	12	4	0	0	0	0	0	0	0	**358**
10:00 AM	7	293	42	0	11	2	0	0	0	1	0	0	0	**356**
11:00 AM	2	358	55	0	14	2	0	0	1	0	0	0	0	**432**
12:00 PM	5	375	43	0	13	3	0	0	0	1	0	0	0	**440**
1:00 PM	2	398	35	0	11	3	0	0	0	0	0	0	0	**449**
2:00 PM	5	467	43	0	14	7	0	0	0	0	0	0	0	**536**
3:00 PM	0	441	35	0	15	8	0	0	0	0	0	0	0	**499**
4:00 PM	7	441	56	0	9	5	0	1	0	1	0	0	0	**520**
5:00 PM	4	517	43	0	7	5	0	0	0	0	0	0	0	**576**
6:00 PM	8	435	37	0	5	6	0	0	0	0	0	0	0	**491**
7:00 PM	4	287	19	0	2	2	0	0	0	0	0	0	0	**314**
8:00 PM	0	256	13	0	2	1	0	0	0	0	0	0	0	**272**
9:00 PM	2	193	18	0	0	3	0	0	0	0	0	0	0	**216**
10:00 PM	0	103	4	0	1	0	0	0	0	0	0	0	0	**108**
11:00 PM	0	58	2	0	2	1	0	0	0	0	0	0	0	**63**
Total	**52**	**5,712**	**601**	**0**	**154**	**77**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**6,601**
Percent	**0.8%**	**86.5%**	**9.1%**	**0.0%**	**2.3%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 - 5/1/2019
Site Code: 32

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	10	17	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	17	27
1:00 AM	13	8	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	8	21
2:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
3:00 AM	10	4	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4	14
4:00 AM	30	6	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	6	36
5:00 AM	120	44	164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	44	164
6:00 AM	256	117	373	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	117	373
7:00 AM	619	356	975	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619	356	975
8:00 AM	**846**	412	**1,258**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**846**	412	**1,258**
9:00 AM	604	358	962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	604	358	962
10:00 AM	501	356	857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	501	356	857
11:00 AM	498	**432**	930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	498	**432**	930
12:00 PM	484	440	924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	484	440	924
1:00 PM	470	449	919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	470	449	919
2:00 PM	543	536	1,079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	543	536	1,079
3:00 PM	575	499	1,074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	575	499	1,074
4:00 PM	**595**	520	1,115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**595**	520	1,115
5:00 PM	557	**576**	**1,133**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	557	**576**	**1,133**
6:00 PM	362	491	853	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	362	491	853
7:00 PM	241	314	555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241	314	555
8:00 PM	194	272	466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	272	466
9:00 PM	129	216	345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	216	345
10:00 PM	72	108	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	108	180
11:00 PM	30	63	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	63	93
Total	7,764	6,601	14,365	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,764	6,601	14,365
Percent	54%	46%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54%	46%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	846	432	1,258	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	432	1,258
PM Peak	16:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	17:00	17:00
Vol.	595	576	1,133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	595	576	1,133

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Mission Ave, B/W H St & Lincoln Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 33

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	26	2,204	285	0	44	3	0	0	0	0	0	0	0	2,562
Percent	1.0%	86.0%	11.1%	0.0%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	21	3,483	415	0	76	2	0	0	0	2	0	0	0	3,999
Percent	0.5%	87.1%	10.4%	0.0%	1.9%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	47	5,687	700	0	120	5	0	0	0	2	0	0	0	6,561
Percent	0.7%	86.7%	10.7%	0.0%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

DATA SOLUTIONS

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	11	0	0	1	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	41	9	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	171	12	0	4	0	0	0	0	0	0	0	0	**188**
8:00 AM	3	188	14	0	3	1	0	0	0	0	0	0	0	**209**
9:00 AM	3	137	19	0	3	0	0	0	0	0	0	0	0	**162**
10:00 AM	1	100	18	0	3	1	0	0	0	0	0	0	0	**123**
11:00 AM	1	125	21	0	4	0	0	0	0	0	0	0	0	**151**
12:00 PM	3	127	19	0	4	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	140	18	0	1	1	0	0	0	0	0	0	0	**161**
2:00 PM	0	182	29	0	4	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	190	36	0	4	0	0	0	0	0	0	0	0	**231**
4:00 PM	5	175	27	0	8	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	214	18	0	3	0	0	0	0	0	0	0	0	**235**
6:00 PM	1	128	13	0	1	0	0	0	0	0	0	0	0	**143**
7:00 PM	3	102	11	0	1	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	77	5	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	1	63	14	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	1	17	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
Total	**26**	**2,204**	**285**	**0**	**44**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**1.0%**	**86.0%**	**11.1%**	**0.0%**	**1.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	17	2	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	59	15	0	3	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	170	30	0	7	2	0	0	0	1	0	0	0	**213**
8:00 AM	1	212	36	0	7	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	172	35	0	8	0	0	0	0	0	0	0	0	**217**
10:00 AM	2	178	31	0	5	0	0	0	0	0	0	0	0	**216**
11:00 AM	3	201	26	0	5	0	0	0	0	0	0	0	0	**235**
12:00 PM	1	202	23	0	5	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	195	35	0	11	0	0	0	0	0	0	0	0	**241**
2:00 PM	1	274	26	0	8	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	262	26	0	5	0	0	0	0	1	0	0	0	**294**
4:00 PM	3	326	29	0	5	0	0	0	0	0	0	0	0	**363**
5:00 PM	1	361	27	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	300	26	0	3	0	0	0	0	0	0	0	0	**329**
7:00 PM	2	202	21	0	2	0	0	0	0	0	0	0	0	**227**
8:00 PM	1	148	11	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	99	5	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	64	6	0	1	0	0	0	0	0	0	0	0	**71**
11:00 PM	1	21	4	0	0	0	0	0	0	0	0	0	0	**26**
Total	**21**	**3,483**	**415**	**0**	**76**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3,999**
Percent	**0.5%**	**87.1%**	**10.4%**	**0.0%**	**1.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	11	0	0	1	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	41	9	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	171	12	0	4	0	0	0	0	0	0	0	0	**188**
8:00 AM	3	188	14	0	3	1	0	0	0	0	0	0	0	**209**
9:00 AM	3	137	19	0	3	0	0	0	0	0	0	0	0	**162**
10:00 AM	1	100	18	0	3	1	0	0	0	0	0	0	0	**123**
11:00 AM	1	125	21	0	4	0	0	0	0	0	0	0	0	**151**
12:00 PM	3	127	19	0	4	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	140	18	0	1	1	0	0	0	0	0	0	0	**161**
2:00 PM	0	182	29	0	4	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	190	36	0	4	0	0	0	0	0	0	0	0	**231**
4:00 PM	5	175	27	0	8	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	214	18	0	3	0	0	0	0	0	0	0	0	**235**
6:00 PM	1	128	13	0	1	0	0	0	0	0	0	0	0	**143**
7:00 PM	3	102	11	0	1	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	77	5	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	1	63	14	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	1	17	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
Total	**26**	**2,204**	**285**	**0**	**44**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**1.0%**	**86.0%**	**11.1%**	**0.0%**	**1.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	17	2	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	59	15	0	3	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	170	30	0	7	2	0	0	0	1	0	0	0	**213**
8:00 AM	1	212	36	0	7	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	172	35	0	8	0	0	0	0	0	0	0	0	**217**
10:00 AM	2	178	31	0	5	0	0	0	0	0	0	0	0	**216**
11:00 AM	3	201	26	0	5	0	0	0	0	0	0	0	0	**235**
12:00 PM	1	202	23	0	5	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	195	35	0	11	0	0	0	0	0	0	0	0	**241**
2:00 PM	1	274	26	0	8	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	262	26	0	5	0	0	0	0	1	0	0	0	**294**
4:00 PM	3	326	29	0	5	0	0	0	0	0	0	0	0	**363**
5:00 PM	1	361	27	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	300	26	0	3	0	0	0	0	0	0	0	0	**329**
7:00 PM	2	202	21	0	2	0	0	0	0	0	0	0	0	**227**
8:00 PM	1	148	11	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	99	5	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	64	6	0	1	0	0	0	0	0	0	0	0	**71**
11:00 PM	1	21	4	0	0	0	0	0	0	0	0	0	0	**26**
Total	**21**	**3,483**	**415**	**0**	**76**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3,999**
Percent	**0.5%**	**87.1%**	**10.4%**	**0.0%**	**1.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	11	0	0	1	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	41	9	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	171	12	0	4	0	0	0	0	0	0	0	0	**188**
8:00 AM	3	188	14	0	3	1	0	0	0	0	0	0	0	**209**
9:00 AM	3	137	19	0	3	0	0	0	0	0	0	0	0	**162**
10:00 AM	1	100	18	0	3	1	0	0	0	0	0	0	0	**123**
11:00 AM	1	125	21	0	4	0	0	0	0	0	0	0	0	**151**
12:00 PM	3	127	19	0	4	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	140	18	0	1	1	0	0	0	0	0	0	0	**161**
2:00 PM	0	182	29	0	4	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	190	36	0	4	0	0	0	0	0	0	0	0	**231**
4:00 PM	5	175	27	0	8	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	214	18	0	3	0	0	0	0	0	0	0	0	**235**
6:00 PM	1	128	13	0	1	0	0	0	0	0	0	0	0	**143**
7:00 PM	3	102	11	0	1	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	77	5	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	1	63	14	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	1	17	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
Total	**26**	**2,204**	**285**	**0**	**44**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**1.0%**	**86.0%**	**11.1%**	**0.0%**	**1.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	17	2	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	59	15	0	3	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	170	30	0	7	2	0	0	0	1	0	0	0	**213**
8:00 AM	1	212	36	0	7	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	172	35	0	8	0	0	0	0	0	0	0	0	**217**
10:00 AM	2	178	31	0	5	0	0	0	0	0	0	0	0	**216**
11:00 AM	3	201	26	0	5	0	0	0	0	0	0	0	0	**235**
12:00 PM	1	202	23	0	5	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	195	35	0	11	0	0	0	0	0	0	0	0	**241**
2:00 PM	1	274	26	0	8	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	262	26	0	5	0	0	0	0	1	0	0	0	**294**
4:00 PM	3	326	29	0	5	0	0	0	0	0	0	0	0	**363**
5:00 PM	1	361	27	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	300	26	0	3	0	0	0	0	0	0	0	0	**329**
7:00 PM	2	202	21	0	2	0	0	0	0	0	0	0	0	**227**
8:00 PM	1	148	11	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	99	5	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	64	6	0	1	0	0	0	0	0	0	0	0	**71**
11:00 PM	1	21	4	0	0	0	0	0	0	0	0	0	0	**26**
Total	**21**	**3,483**	**415**	**0**	**76**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3,999**
Percent	**0.5%**	**87.1%**	**10.4%**	**0.0%**	**1.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 33

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	1	13	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13	14
1:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
2:00 AM	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
3:00 AM	4	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	8
4:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
5:00 AM	13	20	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	20	33
6:00 AM	50	77	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	77	127
7:00 AM	188	213	401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	188	213	401
8:00 AM	**209**	**256**	**465**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**209**	**256**	**465**
9:00 AM	162	217	379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162	217	379
10:00 AM	123	216	339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	216	339
11:00 AM	151	235	386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	235	386
12:00 PM	153	231	384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	231	384
1:00 PM	161	241	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	241	402
2:00 PM	215	309	524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	309	524
3:00 PM	231	294	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	294	525
4:00 PM	215	363	578	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	363	578
5:00 PM	**235**	**389**	**624**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**235**	**389**	**624**
6:00 PM	143	329	472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143	329	472
7:00 PM	117	227	344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	227	344
8:00 PM	82	160	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	160	242
9:00 PM	78	104	182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	104	182
10:00 PM	18	71	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	71	89
11:00 PM	10	26	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	26	36
Total	2,562	3,999	6,561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,562	3,999	6,561
Percent	39%	61%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39%	61%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	209	256	465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	256	465
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	235	389	624	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235	389	624

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Mission Ave, B/W Lincoln Ave & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 34

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	18	3,506	270	2	67	7	0	3	2	2	0	0	0	3,877
Percent	0.5%	90.4%	7.0%	0.1%	1.7%	0.2%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	100%
Westbound	41	4,617	689	2	212	16	0	1	2	0	0	0	0	5,580
Percent	0.7%	82.7%	12.3%	0.0%	3.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	59	8,123	959	4	279	23	0	4	4	2	0	0	0	9,457
Percent	0.6%	85.9%	10.1%	0.0%	3.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

DATA SOLUTIONS

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	50	4	0	2	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	93	14	0	2	0	0	1	1	0	0	0	0	**111**
7:00 AM	3	255	21	0	8	1	0	0	0	0	0	0	0	**288**
8:00 AM	3	229	28	0	6	0	0	0	1	0	0	0	0	**267**
9:00 AM	1	202	17	1	1	1	0	0	0	0	0	0	0	**223**
10:00 AM	1	187	22	0	5	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	223	17	0	5	1	0	0	0	0	0	0	0	**247**
12:00 PM	1	242	15	0	10	1	0	0	0	0	0	0	0	**269**
1:00 PM	0	233	18	0	10	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	206	17	0	2	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	283	18	0	0	0	0	0	0	2	0	0	0	**303**
4:00 PM	0	291	18	0	6	1	0	0	0	0	0	0	0	**316**
5:00 PM	3	294	16	0	2	2	0	0	0	0	0	0	0	**317**
6:00 PM	1	210	14	0	2	0	0	2	0	0	0	0	0	**229**
7:00 PM	2	163	12	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	1	137	6	0	2	0	0	0	0	0	0	0	0	**146**
9:00 PM	1	91	3	0	2	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	67	5	0	1	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**18**	**3,506**	**270**	**2**	**67**	**7**	**0**	**3**	**2**	**2**	**0**	**0**	**0**	**3,877**
Percent	**0.5%**	**90.4%**	**7.0%**	**0.1%**	**1.7%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	25	7	0	1	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	87	13	0	4	0	0	0	0	0	0	0	0	**105**
7:00 AM	1	322	49	0	14	3	0	0	0	0	0	0	0	**389**
8:00 AM	5	360	58	0	18	3	0	0	0	0	0	0	0	**444**
9:00 AM	2	288	38	1	14	1	0	0	1	0	0	0	0	**345**
10:00 AM	2	231	39	1	10	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	285	36	0	19	0	0	1	0	0	0	0	0	**341**
12:00 PM	0	316	52	0	14	1	0	0	0	0	0	0	0	**383**
1:00 PM	2	328	54	0	23	1	0	0	0	0	0	0	0	**408**
2:00 PM	5	339	63	0	23	1	0	0	0	0	0	0	0	**431**
3:00 PM	6	315	46	0	19	2	0	0	1	0	0	0	0	**389**
4:00 PM	3	370	56	0	13	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	374	46	0	8	3	0	0	0	0	0	0	0	**436**
6:00 PM	1	341	40	0	12	0	0	0	0	0	0	0	0	**394**
7:00 PM	1	228	32	0	6	1	0	0	0	0	0	0	0	**268**
8:00 PM	2	177	27	0	8	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	113	18	0	4	0	0	0	0	0	0	0	0	**137**
10:00 PM	2	70	6	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	1	24	3	0	0	0	0	0	0	0	0	0	0	**28**
Total	**41**	**4,617**	**689**	**2**	**212**	**16**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5,580**
Percent	**0.7%**	**82.7%**	**12.3%**	**0.0%**	**3.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	50	4	0	2	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	93	14	0	2	0	0	1	1	0	0	0	0	**111**
7:00 AM	3	255	21	0	8	1	0	0	0	0	0	0	0	**288**
8:00 AM	3	229	28	0	6	0	0	0	1	0	0	0	0	**267**
9:00 AM	1	202	17	1	1	1	0	0	0	0	0	0	0	**223**
10:00 AM	1	187	22	0	5	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	223	17	0	5	1	0	0	0	0	0	0	0	**247**
12:00 PM	1	242	15	0	10	1	0	0	0	0	0	0	0	**269**
1:00 PM	0	233	18	0	10	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	206	17	0	2	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	283	18	0	0	0	0	0	0	2	0	0	0	**303**
4:00 PM	0	291	18	0	6	1	0	0	0	0	0	0	0	**316**
5:00 PM	3	294	16	0	2	2	0	0	0	0	0	0	0	**317**
6:00 PM	1	210	14	0	2	0	0	2	0	0	0	0	0	**229**
7:00 PM	2	163	12	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	1	137	6	0	2	0	0	0	0	0	0	0	0	**146**
9:00 PM	1	91	3	0	2	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	67	5	0	1	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**18**	**3,506**	**270**	**2**	**67**	**7**	**0**	**3**	**2**	**2**	**0**	**0**	**0**	**3,877**
Percent	**0.5%**	**90.4%**	**7.0%**	**0.1%**	**1.7%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	25	7	0	1	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	87	13	0	4	0	0	0	0	0	0	0	0	**105**
7:00 AM	1	322	49	0	14	3	0	0	0	0	0	0	0	**389**
8:00 AM	5	360	58	0	18	3	0	0	0	0	0	0	0	**444**
9:00 AM	2	288	38	1	14	1	0	0	1	0	0	0	0	**345**
10:00 AM	2	231	39	1	10	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	285	36	0	19	0	0	1	0	0	0	0	0	**341**
12:00 PM	0	316	52	0	14	1	0	0	0	0	0	0	0	**383**
1:00 PM	2	328	54	0	23	1	0	0	0	0	0	0	0	**408**
2:00 PM	5	339	63	0	23	1	0	0	0	0	0	0	0	**431**
3:00 PM	6	315	46	0	19	2	0	0	1	0	0	0	0	**389**
4:00 PM	3	370	56	0	13	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	374	46	0	8	3	0	0	0	0	0	0	0	**436**
6:00 PM	1	341	40	0	12	0	0	0	0	0	0	0	0	**394**
7:00 PM	1	228	32	0	6	1	0	0	0	0	0	0	0	**268**
8:00 PM	2	177	27	0	8	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	113	18	0	4	0	0	0	0	0	0	0	0	**137**
10:00 PM	2	70	6	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	1	24	3	0	0	0	0	0	0	0	0	0	0	**28**
Total	**41**	**4,617**	**689**	**2**	**212**	**16**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5,580**
Percent	**0.7%**	**82.7%**	**12.3%**	**0.0%**	**3.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	50	4	0	2	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	93	14	0	2	0	0	1	1	0	0	0	0	**111**
7:00 AM	3	255	21	0	8	1	0	0	0	0	0	0	0	**288**
8:00 AM	3	229	28	0	6	0	0	0	1	0	0	0	0	**267**
9:00 AM	1	202	17	1	1	1	0	0	0	0	0	0	0	**223**
10:00 AM	1	187	22	0	5	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	223	17	0	5	1	0	0	0	0	0	0	0	**247**
12:00 PM	1	242	15	0	10	1	0	0	0	0	0	0	0	**269**
1:00 PM	0	233	18	0	10	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	206	17	0	2	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	283	18	0	0	0	0	0	0	2	0	0	0	**303**
4:00 PM	0	291	18	0	6	1	0	0	0	0	0	0	0	**316**
5:00 PM	3	294	16	0	2	2	0	0	0	0	0	0	0	**317**
6:00 PM	1	210	14	0	2	0	0	2	0	0	0	0	0	**229**
7:00 PM	2	163	12	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	1	137	6	0	2	0	0	0	0	0	0	0	0	**146**
9:00 PM	1	91	3	0	2	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	67	5	0	1	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**18**	**3,506**	**270**	**2**	**67**	**7**	**0**	**3**	**2**	**2**	**0**	**0**	**0**	**3,877**
Percent	**0.5%**	**90.4%**	**7.0%**	**0.1%**	**1.7%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	25	7	0	1	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	87	13	0	4	0	0	0	0	0	0	0	0	**105**
7:00 AM	1	322	49	0	14	3	0	0	0	0	0	0	0	**389**
8:00 AM	5	360	58	0	18	3	0	0	0	0	0	0	0	**444**
9:00 AM	2	288	38	1	14	1	0	0	1	0	0	0	0	**345**
10:00 AM	2	231	39	1	10	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	285	36	0	19	0	0	1	0	0	0	0	0	**341**
12:00 PM	0	316	52	0	14	1	0	0	0	0	0	0	0	**383**
1:00 PM	2	328	54	0	23	1	0	0	0	0	0	0	0	**408**
2:00 PM	5	339	63	0	23	1	0	0	0	0	0	0	0	**431**
3:00 PM	6	315	46	0	19	2	0	0	1	0	0	0	0	**389**
4:00 PM	3	370	56	0	13	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	374	46	0	8	3	0	0	0	0	0	0	0	**436**
6:00 PM	1	341	40	0	12	0	0	0	0	0	0	0	0	**394**
7:00 PM	1	228	32	0	6	1	0	0	0	0	0	0	0	**268**
8:00 PM	2	177	27	0	8	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	113	18	0	4	0	0	0	0	0	0	0	0	**137**
10:00 PM	2	70	6	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	1	24	3	0	0	0	0	0	0	0	0	0	0	**28**
Total	**41**	**4,617**	**689**	**2**	**212**	**16**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5,580**
Percent	**0.7%**	**82.7%**	**12.3%**	**0.0%**	**3.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 34

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	7	11	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	11	18
1:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
2:00 AM	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	6
3:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
4:00 AM	18	8	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	8	26
5:00 AM	56	33	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	33	89
6:00 AM	111	105	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	111	105	216
7:00 AM	**288**	389	677	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**288**	389	677
8:00 AM	267	**444**	**711**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	267	**444**	**711**
9:00 AM	223	345	568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	345	568
10:00 AM	215	283	498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	283	498
11:00 AM	247	341	588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	341	588
12:00 PM	269	383	652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	269	383	652
1:00 PM	261	408	669	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	261	408	669
2:00 PM	225	431	656	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	431	656
3:00 PM	303	389	692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	303	389	692
4:00 PM	316	**442**	**758**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	**442**	**758**
5:00 PM	**317**	436	753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**317**	436	753
6:00 PM	229	394	623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	394	623
7:00 PM	177	268	445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	177	268	445
8:00 PM	146	214	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	214	360
9:00 PM	97	137	234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	137	234
10:00 PM	73	78	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	78	151
11:00 PM	21	28	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	28	49
Total	3,877	5,580	9,457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,877	5,580	9,457
Percent	41%	59%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41%	59%	-
AM Peak	07:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	08:00	08:00
Vol.	288	444	711	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	288	444	711
PM Peak	17:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	16:00
Vol.	317	442	758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	317	442	758

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 35

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	29	1,842	730	13	227	2	0	0	0	0	0	0	0	2,843
Percent	1.0%	64.8%	25.7%	0.5%	8.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	28	4,110	696	3	190	5	0	0	1	3	0	0	0	5,036
Percent	0.6%	81.6%	13.8%	0.1%	3.8%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	57	5,952	1,426	16	417	7	0	0	1	3	0	0	0	7,879
Percent	0.7%	75.5%	18.1%	0.2%	5.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	5	0	1	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	32	6	0	3	0	0	0	0	0	0	0	0	**41**
7:00 AM	0	100	41	3	17	0	0	0	0	0	0	0	0	**161**
8:00 AM	3	127	53	3	19	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	90	52	0	16	0	0	0	0	0	0	0	0	**158**
10:00 AM	4	83	49	1	21	2	0	0	0	0	0	0	0	**160**
11:00 AM	2	121	44	0	15	0	0	0	0	0	0	0	0	**182**
12:00 PM	3	129	61	1	22	0	0	0	0	0	0	0	0	**216**
1:00 PM	3	142	48	0	19	0	0	0	0	0	0	0	0	**212**
2:00 PM	1	124	65	1	18	0	0	0	0	0	0	0	0	**209**
3:00 PM	2	171	53	0	13	0	0	0	0	0	0	0	0	**239**
4:00 PM	1	143	46	1	25	0	0	0	0	0	0	0	0	**216**
5:00 PM	4	153	58	0	10	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	129	46	0	7	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	93	29	2	5	0	0	0	0	0	0	0	0	**130**
8:00 PM	1	77	21	1	6	0	0	0	0	0	0	0	0	**106**
9:00 PM	1	65	26	0	5	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	26	13	0	3	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	13	6	0	1	0	0	0	0	0	0	0	0	**20**
Total	**29**	**1,842**	**730**	**13**	**227**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.0%**	**64.8%**	**25.7%**	**0.5%**	**8.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	16	4	0	1	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	65	14	0	8	0	0	0	0	0	0	0	0	**88**
7:00 AM	2	233	55	0	20	1	0	0	0	1	0	0	0	**312**
8:00 AM	4	258	51	0	17	1	0	0	0	0	0	0	0	**331**
9:00 AM	0	245	55	0	9	0	0	0	0	0	0	0	0	**309**
10:00 AM	4	195	47	0	9	1	0	0	0	0	0	0	0	**256**
11:00 AM	3	253	45	0	18	0	0	0	0	0	0	0	0	**319**
12:00 PM	2	269	56	0	14	0	0	0	0	0	0	0	0	**341**
1:00 PM	1	262	48	0	11	0	0	0	0	0	0	0	0	**322**
2:00 PM	2	277	64	0	26	0	0	0	0	2	0	0	0	**371**
3:00 PM	2	314	52	0	12	0	0	0	0	0	0	0	0	**380**
4:00 PM	3	311	45	0	15	2	0	0	0	0	0	0	0	**376**
5:00 PM	2	377	49	2	10	0	0	0	0	0	0	0	0	**440**
6:00 PM	2	306	41	1	7	0	0	0	1	0	0	0	0	**358**
7:00 PM	0	244	29	0	6	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	187	17	0	4	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	142	6	0	2	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	95	8	0	1	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	29	3	0	0	0	0	0	0	0	0	0	0	**32**
Total	**28**	**4,110**	**696**	**3**	**190**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**5,036**
Percent	**0.6%**	**81.6%**	**13.8%**	**0.1%**	**3.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

idax DATA SOLUTIONS

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	5	0	1	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	32	6	0	3	0	0	0	0	0	0	0	0	**41**
7:00 AM	0	100	41	3	17	0	0	0	0	0	0	0	0	**161**
8:00 AM	3	127	53	3	19	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	90	52	0	16	0	0	0	0	0	0	0	0	**158**
10:00 AM	4	83	49	1	21	2	0	0	0	0	0	0	0	**160**
11:00 AM	2	121	44	0	15	0	0	0	0	0	0	0	0	**182**
12:00 PM	3	129	61	1	22	0	0	0	0	0	0	0	0	**216**
1:00 PM	3	142	48	0	19	0	0	0	0	0	0	0	0	**212**
2:00 PM	1	124	65	1	18	0	0	0	0	0	0	0	0	**209**
3:00 PM	2	171	53	0	13	0	0	0	0	0	0	0	0	**239**
4:00 PM	1	143	46	1	25	0	0	0	0	0	0	0	0	**216**
5:00 PM	4	153	58	0	10	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	129	46	0	7	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	93	29	2	5	0	0	0	0	0	0	0	0	**130**
8:00 PM	1	77	21	1	6	0	0	0	0	0	0	0	0	**106**
9:00 PM	1	65	26	0	5	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	26	13	0	3	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	13	6	0	1	0	0	0	0	0	0	0	0	**20**
Total	**29**	**1,842**	**730**	**13**	**227**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.0%**	**64.8%**	**25.7%**	**0.5%**	**8.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	16	4	0	1	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	65	14	0	8	0	0	0	0	0	0	0	0	**88**
7:00 AM	2	233	55	0	20	1	0	0	0	1	0	0	0	**312**
8:00 AM	4	258	51	0	17	1	0	0	0	0	0	0	0	**331**
9:00 AM	0	245	55	0	9	0	0	0	0	0	0	0	0	**309**
10:00 AM	4	195	47	0	9	1	0	0	0	0	0	0	0	**256**
11:00 AM	3	253	45	0	18	0	0	0	0	0	0	0	0	**319**
12:00 PM	2	269	56	0	14	0	0	0	0	0	0	0	0	**341**
1:00 PM	1	262	48	0	11	0	0	0	0	0	0	0	0	**322**
2:00 PM	2	277	64	0	26	0	0	0	0	2	0	0	0	**371**
3:00 PM	2	314	52	0	12	0	0	0	0	0	0	0	0	**380**
4:00 PM	3	311	45	0	15	2	0	0	0	0	0	0	0	**376**
5:00 PM	2	377	49	2	10	0	0	0	0	0	0	0	0	**440**
6:00 PM	2	306	41	1	7	0	0	0	1	0	0	0	0	**358**
7:00 PM	0	244	29	0	6	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	187	17	0	4	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	142	6	0	2	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	95	8	0	1	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	29	3	0	0	0	0	0	0	0	0	0	0	**32**
Total	**28**	**4,110**	**696**	**3**	**190**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**5,036**
Percent	**0.6%**	**81.6%**	**13.8%**	**0.1%**	**3.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	5	0	1	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	32	6	0	3	0	0	0	0	0	0	0	0	**41**
7:00 AM	0	100	41	3	17	0	0	0	0	0	0	0	0	**161**
8:00 AM	3	127	53	3	19	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	90	52	0	16	0	0	0	0	0	0	0	0	**158**
10:00 AM	4	83	49	1	21	2	0	0	0	0	0	0	0	**160**
11:00 AM	2	121	44	0	15	0	0	0	0	0	0	0	0	**182**
12:00 PM	3	129	61	1	22	0	0	0	0	0	0	0	0	**216**
1:00 PM	3	142	48	0	19	0	0	0	0	0	0	0	0	**212**
2:00 PM	1	124	65	1	18	0	0	0	0	0	0	0	0	**209**
3:00 PM	2	171	53	0	13	0	0	0	0	0	0	0	0	**239**
4:00 PM	1	143	46	1	25	0	0	0	0	0	0	0	0	**216**
5:00 PM	4	153	58	0	10	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	129	46	0	7	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	93	29	2	5	0	0	0	0	0	0	0	0	**130**
8:00 PM	1	77	21	1	6	0	0	0	0	0	0	0	0	**106**
9:00 PM	1	65	26	0	5	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	26	13	0	3	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	13	6	0	1	0	0	0	0	0	0	0	0	**20**
Total	**29**	**1,842**	**730**	**13**	**227**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.0%**	**64.8%**	**25.7%**	**0.5%**	**8.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	16	4	0	1	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	65	14	0	8	0	0	0	0	0	0	0	0	**88**
7:00 AM	2	233	55	0	20	1	0	0	0	1	0	0	0	**312**
8:00 AM	4	258	51	0	17	1	0	0	0	0	0	0	0	**331**
9:00 AM	0	245	55	0	9	0	0	0	0	0	0	0	0	**309**
10:00 AM	4	195	47	0	9	1	0	0	0	0	0	0	0	**256**
11:00 AM	3	253	45	0	18	0	0	0	0	0	0	0	0	**319**
12:00 PM	2	269	56	0	14	0	0	0	0	0	0	0	0	**341**
1:00 PM	1	262	48	0	11	0	0	0	0	0	0	0	0	**322**
2:00 PM	2	277	64	0	26	0	0	0	0	2	0	0	0	**371**
3:00 PM	2	314	52	0	12	0	0	0	0	0	0	0	0	**380**
4:00 PM	3	311	45	0	15	2	0	0	0	0	0	0	0	**376**
5:00 PM	2	377	49	2	10	0	0	0	0	0	0	0	0	**440**
6:00 PM	2	306	41	1	7	0	0	0	1	0	0	0	0	**358**
7:00 PM	0	244	29	0	6	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	187	17	0	4	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	142	6	0	2	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	95	8	0	1	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	29	3	0	0	0	0	0	0	0	0	0	0	**32**
Total	**28**	**4,110**	**696**	**3**	**190**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**5,036**
Percent	**0.6%**	**81.6%**	**13.8%**	**0.1%**	**3.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 - 5/1/2019
Site Code: 35

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	8	16	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	16	24
1:00 AM	4	11	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	11	15
2:00 AM	2	5	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	7
3:00 AM	3	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4
4:00 AM	4	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10
5:00 AM	18	21	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	21	39
6:00 AM	41	88	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	88	129
7:00 AM	161	312	473	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	312	473
8:00 AM	**205**	**331**	**536**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**205**	**331**	**536**
9:00 AM	158	309	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	309	467
10:00 AM	160	256	416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	256	416
11:00 AM	182	319	501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	319	501
12:00 PM	216	341	557	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	341	557
1:00 PM	212	322	534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	212	322	534
2:00 PM	209	371	580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	371	580
3:00 PM	**239**	380	619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**239**	380	619
4:00 PM	216	376	592	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	376	592
5:00 PM	225	**440**	**665**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	**440**	**665**
6:00 PM	185	358	543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	358	543
7:00 PM	130	279	409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	279	409
8:00 PM	106	208	314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	208	314
9:00 PM	97	150	247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	150	247
10:00 PM	42	104	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	104	146
11:00 PM	20	32	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	32	52
Total	2,843	5,036	7,879	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,843	5,036	7,879
Percent	36%	64%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36%	64%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	205	331	536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	205	331	536
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	239	440	665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239	440	665

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Northgate Dr, B/W Freitas & Los Ranchitos

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 36

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	8	1,704	214	0	66	2	0	0	1	0	0	0	0	1,995
Percent	0.4%	85.4%	10.7%	0.0%	3.3%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	4	2,200	210	0	49	2	0	0	0	0	0	0	0	2,465
Percent	0.2%	89.2%	8.5%	0.0%	2.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	12	3,904	424	0	115	4	0	0	1	0	0	0	0	4,460
Percent	0.3%	87.5%	9.5%	0.0%	2.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	13	2	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	24	5	0	3	1	0	0	0	0	0	0	0	**33**
7:00 AM	0	86	17	0	2	0	0	0	0	0	0	0	0	**105**
8:00 AM	1	76	14	0	7	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	83	12	0	3	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	100	13	0	1	0	0	0	0	0	0	0	0	**114**
11:00 AM	1	124	17	0	7	1	0	0	0	0	0	0	0	**150**
12:00 PM	0	121	9	0	5	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	141	16	0	3	0	0	0	1	0	0	0	0	**161**
2:00 PM	1	140	9	0	8	0	0	0	0	0	0	0	0	**158**
3:00 PM	1	162	20	0	12	0	0	0	0	0	0	0	0	**195**
4:00 PM	1	157	20	0	4	0	0	0	0	0	0	0	0	**182**
5:00 PM	0	119	13	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	1	106	12	0	4	0	0	0	0	0	0	0	0	**123**
7:00 PM	2	79	14	0	1	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	66	6	0	1	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	51	2	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	24	7	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	25	1	0	0	0	0	0	0	0	0	0	0	**26**
Total	**8**	**1,704**	**214**	**0**	**66**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.4%**	**85.4%**	**10.7%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	26	4	0	1	0	0	0	0	0	0	0	0	**32**
6:00 AM	1	58	1	0	1	1	0	0	0	0	0	0	0	**62**
7:00 AM	1	138	19	0	1	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	182	16	0	7	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	140	15	0	4	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	121	9	0	4	1	0	0	0	0	0	0	0	**135**
11:00 AM	1	147	20	0	5	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	143	14	0	3	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	156	18	0	4	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	158	11	0	1	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	195	19	0	7	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	203	12	0	5	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	176	13	0	2	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	105	12	0	2	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	89	12	0	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	71	6	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	44	3	0	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**4**	**2,200**	**210**	**0**	**49**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.2%**	**89.2%**	**8.5%**	**0.0%**	**2.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	13	2	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	24	5	0	3	1	0	0	0	0	0	0	0	**33**
7:00 AM	0	86	17	0	2	0	0	0	0	0	0	0	0	**105**
8:00 AM	1	76	14	0	7	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	83	12	0	3	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	100	13	0	1	0	0	0	0	0	0	0	0	**114**
11:00 AM	1	124	17	0	7	1	0	0	0	0	0	0	0	**150**
12:00 PM	0	121	9	0	5	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	141	16	0	3	0	0	0	1	0	0	0	0	**161**
2:00 PM	1	140	9	0	8	0	0	0	0	0	0	0	0	**158**
3:00 PM	1	162	20	0	12	0	0	0	0	0	0	0	0	**195**
4:00 PM	1	157	20	0	4	0	0	0	0	0	0	0	0	**182**
5:00 PM	0	119	13	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	1	106	12	0	4	0	0	0	0	0	0	0	0	**123**
7:00 PM	2	79	14	0	1	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	66	6	0	1	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	51	2	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	24	7	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	25	1	0	0	0	0	0	0	0	0	0	0	**26**
Total	**8**	**1,704**	**214**	**0**	**66**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.4%**	**85.4%**	**10.7%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	26	4	0	1	0	0	0	0	0	0	0	0	**32**
6:00 AM	1	58	1	0	1	1	0	0	0	0	0	0	0	**62**
7:00 AM	1	138	19	0	1	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	182	16	0	7	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	140	15	0	4	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	121	9	0	4	1	0	0	0	0	0	0	0	**135**
11:00 AM	1	147	20	0	5	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	143	14	0	3	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	156	18	0	4	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	158	11	0	1	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	195	19	0	7	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	203	12	0	5	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	176	13	0	2	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	105	12	0	2	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	89	12	0	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	71	6	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	44	3	0	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**4**	**2,200**	**210**	**0**	**49**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.2%**	**89.2%**	**8.5%**	**0.0%**	**2.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	13	2	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	24	5	0	3	1	0	0	0	0	0	0	0	**33**
7:00 AM	0	86	17	0	2	0	0	0	0	0	0	0	0	**105**
8:00 AM	1	76	14	0	7	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	83	12	0	3	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	100	13	0	1	0	0	0	0	0	0	0	0	**114**
11:00 AM	1	124	17	0	7	1	0	0	0	0	0	0	0	**150**
12:00 PM	0	121	9	0	5	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	141	16	0	3	0	0	0	1	0	0	0	0	**161**
2:00 PM	1	140	9	0	8	0	0	0	0	0	0	0	0	**158**
3:00 PM	1	162	20	0	12	0	0	0	0	0	0	0	0	**195**
4:00 PM	1	157	20	0	4	0	0	0	0	0	0	0	0	**182**
5:00 PM	0	119	13	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	1	106	12	0	4	0	0	0	0	0	0	0	0	**123**
7:00 PM	2	79	14	0	1	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	66	6	0	1	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	51	2	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	24	7	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	25	1	0	0	0	0	0	0	0	0	0	0	**26**
Total	**8**	**1,704**	**214**	**0**	**66**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.4%**	**85.4%**	**10.7%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	26	4	0	1	0	0	0	0	0	0	0	0	**32**
6:00 AM	1	58	1	0	1	1	0	0	0	0	0	0	0	**62**
7:00 AM	1	138	19	0	1	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	182	16	0	7	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	140	15	0	4	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	121	9	0	4	1	0	0	0	0	0	0	0	**135**
11:00 AM	1	147	20	0	5	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	143	14	0	3	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	156	18	0	4	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	158	11	0	1	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	195	19	0	7	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	203	12	0	5	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	176	13	0	2	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	105	12	0	2	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	89	12	0	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	71	6	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	44	3	0	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**4**	**2,200**	**210**	**0**	**49**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.2%**	**89.2%**	**8.5%**	**0.0%**	**2.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 - 5/1/2019
Site Code: 36

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	5	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	8
1:00 AM	2	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6
2:00 AM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
3:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
4:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
5:00 AM	15	32	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	32	47
6:00 AM	33	62	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	62	95
7:00 AM	105	159	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	159	264
8:00 AM	98	**205**	303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	**205**	303
9:00 AM	98	159	257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	159	257
10:00 AM	114	135	249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114	135	249
11:00 AM	**150**	173	**323**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**150**	173	**323**
12:00 PM	135	160	295	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	160	295
1:00 PM	161	178	339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	178	339
2:00 PM	158	170	328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	170	328
3:00 PM	**195**	**221**	**416**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**195**	**221**	**416**
4:00 PM	182	220	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	220	402
5:00 PM	134	191	325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	191	325
6:00 PM	123	119	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	119	242
7:00 PM	96	102	198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	102	198
8:00 PM	73	77	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	77	150
9:00 PM	53	47	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	47	100
10:00 PM	31	22	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	22	53
11:00 PM	26	16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	16	42
Total	1,995	2,465	4,460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,995	2,465	4,460
Percent	45%	55%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45%	55%	-
AM Peak	11:00	08:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	11:00
Vol.	150	205	323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	205	323
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	195	221	416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	221	416

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Point San Pedro Rd, B/W Mooring & END

Count Direction: Eastbound / Westbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 37

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	21	7,256	1,244	4	266	87	0	6	40	8	7	2	7	8,948
Percent	0.2%	81.1%	13.9%	0.0%	3.0%	1.0%	0.0%	0.1%	0.4%	0.1%	0.1%	0.0%	0.1%	100%
Westbound	25	6,398	1,888	10	586	78	0	18	31	5	10	4	4	9,057
Percent	0.3%	70.6%	20.8%	0.1%	6.5%	0.9%	0.0%	0.2%	0.3%	0.1%	0.1%	0.0%	0.0%	100%
Total	46	13,654	3,132	14	852	165	0	24	71	13	17	6	11	18,005
Percent	0.3%	75.8%	17.4%	0.1%	4.7%	0.9%	0.0%	0.1%	0.4%	0.1%	0.1%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

Wednesday, April 24, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	**31**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	4	0	0	0	0	0	1	0	0	0	0	**14**
5:00 AM	1	53	11	0	6	1	0	0	1	0	0	0	0	**73**
6:00 AM	2	117	28	0	12	5	0	0	1	1	0	0	0	**166**
7:00 AM	0	330	108	2	31	15	0	0	8	0	0	1	1	**496**
8:00 AM	0	445	138	1	32	5	0	2	3	0	0	1	0	**627**
9:00 AM	0	346	87	0	18	8	0	1	7	1	2	0	0	**470**
10:00 AM	2	360	70	0	24	12	0	0	5	0	2	0	0	**475**
11:00 AM	1	438	82	0	22	14	0	1	5	1	2	0	3	**569**
12:00 PM	0	512	108	1	32	7	0	1	4	0	1	0	1	**667**
1:00 PM	0	554	93	0	18	4	0	0	4	3	0	0	1	**677**
2:00 PM	1	542	90	0	21	8	0	0	0	1	0	0	1	**664**
3:00 PM	1	536	83	0	11	2	0	0	0	1	0	0	0	**634**
4:00 PM	2	568	88	0	8	1	0	0	0	0	0	0	0	**667**
5:00 PM	3	627	82	0	8	0	0	1	0	0	0	0	0	**721**
6:00 PM	4	553	68	0	10	1	0	0	1	0	0	0	0	**637**
7:00 PM	2	461	36	0	8	0	0	0	0	0	0	0	0	**507**
8:00 PM	2	340	32	0	0	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	215	16	0	2	0	0	0	0	0	0	0	0	**233**
10:00 PM	0	157	12	0	1	1	0	0	0	0	0	0	0	**171**
11:00 PM	0	56	3	0	0	0	0	0	0	0	0	0	0	**59**
Total	**21**	**7,256**	**1,244**	**4**	**266**	**87**	**0**	**6**	**40**	**8**	**7**	**2**	**7**	**8,948**
Percent	**0.2%**	**81.1%**	**13.9%**	**0.0%**	**3.0%**	**1.0%**	**0.0%**	**0.1%**	**0.4%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

Wednesday, April 24, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
4:00 AM	0	19	10	0	5	1	0	0	0	0	0	0	0	**35**
5:00 AM	1	83	18	0	9	8	0	0	1	0	0	0	0	**120**
6:00 AM	3	220	62	0	22	10	0	0	0	0	0	0	0	**317**
7:00 AM	4	526	147	1	43	2	0	1	2	0	1	1	0	**728**
8:00 AM	0	644	197	0	38	7	0	2	8	1	2	1	0	**900**
9:00 AM	1	489	138	1	49	5	0	1	2	0	0	0	2	**688**
10:00 AM	0	426	130	2	41	8	0	0	5	2	2	0	1	**617**
11:00 AM	0	428	132	0	37	7	0	2	7	0	2	0	0	**615**
12:00 PM	1	413	108	2	43	10	0	4	3	1	1	1	0	**587**
1:00 PM	2	449	133	1	57	4	0	2	2	0	1	1	1	**653**
2:00 PM	2	469	157	3	44	1	0	1	1	1	0	0	0	**679**
3:00 PM	2	415	151	0	55	1	0	3	0	0	0	0	0	**627**
4:00 PM	2	406	138	0	46	3	0	0	0	0	1	0	0	**596**
5:00 PM	4	431	115	0	36	6	0	2	0	0	0	0	0	**594**
6:00 PM	1	371	105	0	19	0	0	0	0	0	0	0	0	**496**
7:00 PM	2	246	79	0	19	4	0	0	0	0	0	0	0	**350**
8:00 PM	0	183	45	0	14	1	0	0	0	0	0	0	0	**243**
9:00 PM	0	77	10	0	7	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	48	7	0	1	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	33	4	0	0	0	0	0	0	0	0	0	0	**37**
Total	**25**	**6,398**	**1,888**	**10**	**586**	**78**	**0**	**18**	**31**	**5**	**10**	**4**	**4**	**9,057**
Percent	**0.3%**	**70.6%**	**20.8%**	**0.1%**	**6.5%**	**0.9%**	**0.0%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	**31**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	4	0	0	0	0	0	1	0	0	0	0	**14**
5:00 AM	1	53	11	0	6	1	0	0	1	0	0	0	0	**73**
6:00 AM	2	117	28	0	12	5	0	0	1	1	0	0	0	**166**
7:00 AM	0	330	108	2	31	15	0	0	8	0	0	1	1	**496**
8:00 AM	0	445	138	1	32	5	0	2	3	0	0	1	0	**627**
9:00 AM	0	346	87	0	18	8	0	1	7	1	2	0	0	**470**
10:00 AM	2	360	70	0	24	12	0	0	5	0	2	0	0	**475**
11:00 AM	1	438	82	0	22	14	0	1	5	1	2	0	3	**569**
12:00 PM	0	512	108	1	32	7	0	1	4	0	1	0	1	**667**
1:00 PM	0	554	93	0	18	4	0	0	4	3	0	0	1	**677**
2:00 PM	1	542	90	0	21	8	0	0	0	1	0	0	1	**664**
3:00 PM	1	536	83	0	11	2	0	0	0	1	0	0	0	**634**
4:00 PM	2	568	88	0	8	1	0	0	0	0	0	0	0	**667**
5:00 PM	3	627	82	0	8	0	0	1	0	0	0	0	0	**721**
6:00 PM	4	553	68	0	10	1	0	0	1	0	0	0	0	**637**
7:00 PM	2	461	36	0	8	0	0	0	0	0	0	0	0	**507**
8:00 PM	2	340	32	0	0	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	215	16	0	2	0	0	0	0	0	0	0	0	**233**
10:00 PM	0	157	12	0	1	1	0	0	0	0	0	0	0	**171**
11:00 PM	0	56	3	0	0	0	0	0	0	0	0	0	0	**59**
Total	**21**	**7,256**	**1,244**	**4**	**266**	**87**	**0**	**6**	**40**	**8**	**7**	**2**	**7**	**8,948**
Percent	**0.2%**	**81.1%**	**13.9%**	**0.0%**	**3.0%**	**1.0%**	**0.0%**	**0.1%**	**0.4%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
4:00 AM	0	19	10	0	5	1	0	0	0	0	0	0	0	**35**
5:00 AM	1	83	18	0	9	8	0	0	1	0	0	0	0	**120**
6:00 AM	3	220	62	0	22	10	0	0	0	0	0	0	0	**317**
7:00 AM	4	526	147	1	43	2	0	1	2	0	1	1	0	**728**
8:00 AM	0	644	197	0	38	7	0	2	8	1	2	1	0	**900**
9:00 AM	1	489	138	1	49	5	0	1	2	0	0	0	2	**688**
10:00 AM	0	426	130	2	41	8	0	0	5	2	2	0	1	**617**
11:00 AM	0	428	132	0	37	7	0	2	7	0	2	0	0	**615**
12:00 PM	1	413	108	2	43	10	0	4	3	1	1	1	0	**587**
1:00 PM	2	449	133	1	57	4	0	2	2	0	1	1	1	**653**
2:00 PM	2	469	157	3	44	1	0	1	1	1	0	0	0	**679**
3:00 PM	2	415	151	0	55	1	0	3	0	0	0	0	0	**627**
4:00 PM	2	406	138	0	46	3	0	0	0	0	1	0	0	**596**
5:00 PM	4	431	115	0	36	6	0	2	0	0	0	0	0	**594**
6:00 PM	1	371	105	0	19	0	0	0	0	0	0	0	0	**496**
7:00 PM	2	246	79	0	19	4	0	0	0	0	0	0	0	**350**
8:00 PM	0	183	45	0	14	1	0	0	0	0	0	0	0	**243**
9:00 PM	0	77	10	0	7	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	48	7	0	1	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	33	4	0	0	0	0	0	0	0	0	0	0	**37**
Total	**25**	**6,398**	**1,888**	**10**	**586**	**78**	**0**	**18**	**31**	**5**	**10**	**4**	**4**	**9,057**
Percent	**0.3%**	**70.6%**	**20.8%**	**0.1%**	**6.5%**	**0.9%**	**0.0%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	**31**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	4	0	0	0	0	0	1	0	0	0	0	**14**
5:00 AM	1	53	11	0	6	1	0	0	1	0	0	0	0	**73**
6:00 AM	2	117	28	0	12	5	0	0	1	1	0	0	0	**166**
7:00 AM	0	330	108	2	31	15	0	0	8	0	0	1	1	**496**
8:00 AM	0	445	138	1	32	5	0	2	3	0	0	1	0	**627**
9:00 AM	0	346	87	0	18	8	0	1	7	1	2	0	0	**470**
10:00 AM	2	360	70	0	24	12	0	0	5	0	2	0	0	**475**
11:00 AM	1	438	82	0	22	14	0	1	5	1	2	0	3	**569**
12:00 PM	0	512	108	1	32	7	0	1	4	0	1	0	1	**667**
1:00 PM	0	554	93	0	18	4	0	0	4	3	0	0	1	**677**
2:00 PM	1	542	90	0	21	8	0	0	0	1	0	0	1	**664**
3:00 PM	1	536	83	0	11	2	0	0	0	1	0	0	0	**634**
4:00 PM	2	568	88	0	8	1	0	0	0	0	0	0	0	**667**
5:00 PM	3	627	82	0	8	0	0	1	0	0	0	0	0	**721**
6:00 PM	4	553	68	0	10	1	0	0	1	0	0	0	0	**637**
7:00 PM	2	461	36	0	8	0	0	0	0	0	0	0	0	**507**
8:00 PM	2	340	32	0	0	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	215	16	0	2	0	0	0	0	0	0	0	0	**233**
10:00 PM	0	157	12	0	1	1	0	0	0	0	0	0	0	**171**
11:00 PM	0	56	3	0	0	0	0	0	0	0	0	0	0	**59**
Total	**21**	**7,256**	**1,244**	**4**	**266**	**87**	**0**	**6**	**40**	**8**	**7**	**2**	**7**	**8,948**
Percent	**0.2%**	**81.1%**	**13.9%**	**0.0%**	**3.0%**	**1.0%**	**0.0%**	**0.1%**	**0.4%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
4:00 AM	0	19	10	0	5	1	0	0	0	0	0	0	0	**35**
5:00 AM	1	83	18	0	9	8	0	0	1	0	0	0	0	**120**
6:00 AM	3	220	62	0	22	10	0	0	0	0	0	0	0	**317**
7:00 AM	4	526	147	1	43	2	0	1	2	0	1	1	0	**728**
8:00 AM	0	644	197	0	38	7	0	2	8	1	2	1	0	**900**
9:00 AM	1	489	138	1	49	5	0	1	2	0	0	0	2	**688**
10:00 AM	0	426	130	2	41	8	0	0	5	2	2	0	1	**617**
11:00 AM	0	428	132	0	37	7	0	2	7	0	2	0	0	**615**
12:00 PM	1	413	108	2	43	10	0	4	3	1	1	1	0	**587**
1:00 PM	2	449	133	1	57	4	0	2	2	0	1	1	1	**653**
2:00 PM	2	469	157	3	44	1	0	1	1	1	0	0	0	**679**
3:00 PM	2	415	151	0	55	1	0	3	0	0	0	0	0	**627**
4:00 PM	2	406	138	0	46	3	0	0	0	0	1	0	0	**596**
5:00 PM	4	431	115	0	36	6	0	2	0	0	0	0	0	**594**
6:00 PM	1	371	105	0	19	0	0	0	0	0	0	0	0	**496**
7:00 PM	2	246	79	0	19	4	0	0	0	0	0	0	0	**350**
8:00 PM	0	183	45	0	14	1	0	0	0	0	0	0	0	**243**
9:00 PM	0	77	10	0	7	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	48	7	0	1	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	33	4	0	0	0	0	0	0	0	0	0	0	**37**
Total	**25**	**6,398**	**1,888**	**10**	**586**	**78**	**0**	**18**	**31**	**5**	**10**	**4**	**4**	**9,057**
Percent	**0.3%**	**70.6%**	**20.8%**	**0.1%**	**6.5%**	**0.9%**	**0.0%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 - 4/30/2019
Site Code: 37

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	31	11	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	11	42
1:00 AM	8	2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	10
2:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
3:00 AM	3	8	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	8	11
4:00 AM	14	35	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	35	49
5:00 AM	73	120	193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	120	193
6:00 AM	166	317	483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	317	483
7:00 AM	496	728	1,224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	496	728	1,224
8:00 AM	**627**	**900**	**1,527**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**627**	**900**	**1,527**
9:00 AM	470	688	1,158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	470	688	1,158
10:00 AM	475	617	1,092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	475	617	1,092
11:00 AM	569	615	1,184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	569	615	1,184
12:00 PM	667	587	1,254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	667	587	1,254
1:00 PM	677	653	1,330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	677	653	1,330
2:00 PM	664	**679**	**1,343**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	664	**679**	**1,343**
3:00 PM	634	627	1,261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	634	627	1,261
4:00 PM	667	596	1,263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	667	596	1,263
5:00 PM	**721**	594	1,315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**721**	594	1,315
6:00 PM	637	496	1,133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	637	496	1,133
7:00 PM	507	350	857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	507	350	857
8:00 PM	376	243	619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	243	619
9:00 PM	233	94	327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	94	327
10:00 PM	171	56	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171	56	227
11:00 PM	59	37	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	37	96
Total	8,948	9,057	18,005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,948	9,057	18,005
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	627	900	1,527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	627	900	1,527
PM Peak	17:00	14:00	14:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	14:00	14:00
Vol.	721	679	1,343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	721	679	1,343

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Redwood Hwy, B/W Smith Ranch & Freitas

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 38

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	29	3,961	740	2	345	9	0	0	0	0	0	0	0	5,086
Percent	0.6%	77.9%	14.5%	0.0%	6.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	35	4,900	799	1	264	6	0	2	0	0	0	0	0	6,007
Percent	0.6%	81.6%	13.3%	0.0%	4.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	64	8,861	1,539	3	609	15	0	2	0	0	0	0	0	11,093
Percent	0.6%	79.9%	13.9%	0.0%	5.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	5	0	1	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	10	3	0	2	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	3	0	2	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	19	1	0	3	0	0	0	0	0	0	0	0	**23**
5:00 AM	2	41	4	0	5	1	0	0	0	0	0	0	0	**53**
6:00 AM	0	111	27	0	18	0	0	0	0	0	0	0	0	**156**
7:00 AM	3	220	49	1	25	1	0	0	0	0	0	0	0	**299**
8:00 AM	1	270	45	0	31	1	0	0	0	0	0	0	0	**348**
9:00 AM	5	304	59	0	32	3	0	0	0	0	0	0	0	**403**
10:00 AM	3	235	55	0	22	1	0	0	0	0	0	0	0	**316**
11:00 AM	1	278	63	1	38	1	0	0	0	0	0	0	0	**382**
12:00 PM	1	291	57	0	25	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	300	62	0	29	1	0	0	0	0	0	0	0	**396**
2:00 PM	1	296	55	0	25	0	0	0	0	0	0	0	0	**377**
3:00 PM	2	242	56	0	30	0	0	0	0	0	0	0	0	**330**
4:00 PM	0	277	45	0	22	0	0	0	0	0	0	0	0	**344**
5:00 PM	3	269	37	0	10	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	237	43	0	10	0	0	0	0	0	0	0	0	**291**
7:00 PM	2	168	26	0	5	0	0	0	0	0	0	0	0	**201**
8:00 PM	0	125	24	0	4	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	105	9	0	1	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	73	6	0	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	53	6	0	3	0	0	0	0	0	0	0	0	**62**
Total	**29**	**3,961**	**740**	**2**	**345**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,086**
Percent	**0.6%**	**77.9%**	**14.5%**	**0.0%**	**6.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	1	6	0	0	3	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	19	5	1	4	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	44	11	0	6	1	0	0	0	0	0	0	0	**62**
6:00 AM	2	119	32	0	10	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	359	87	0	34	0	0	0	0	0	0	0	0	**480**
8:00 AM	4	419	76	0	39	0	0	0	0	0	0	0	0	**538**
9:00 AM	0	314	55	0	24	1	0	1	0	0	0	0	0	**395**
10:00 AM	2	260	63	0	18	0	0	0	0	0	0	0	0	**343**
11:00 AM	2	331	49	0	18	0	0	0	0	0	0	0	0	**400**
12:00 PM	3	362	55	0	21	1	0	0	0	0	0	0	0	**442**
1:00 PM	2	317	51	0	14	0	0	0	0	0	0	0	0	**384**
2:00 PM	3	338	39	0	20	0	0	0	0	0	0	0	0	**400**
3:00 PM	2	374	55	0	15	2	0	0	0	0	0	0	0	**448**
4:00 PM	6	382	56	0	18	0	0	1	0	0	0	0	0	**463**
5:00 PM	1	485	65	0	7	0	0	0	0	0	0	0	0	**558**
6:00 PM	3	287	45	0	4	1	0	0	0	0	0	0	0	**340**
7:00 PM	3	165	20	0	3	0	0	0	0	0	0	0	0	**191**
8:00 PM	1	129	13	0	3	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	70	11	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	50	2	0	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	41	4	0	0	0	0	0	0	0	0	0	0	**45**
Total	**35**	**4,900**	**799**	**1**	**264**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.6%**	**81.6%**	**13.3%**	**0.0%**	**4.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

DATA SOLUTIONS

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	5	0	1	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	10	3	0	2	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	3	0	2	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	19	1	0	3	0	0	0	0	0	0	0	0	**23**
5:00 AM	2	41	4	0	5	1	0	0	0	0	0	0	0	**53**
6:00 AM	0	111	27	0	18	0	0	0	0	0	0	0	0	**156**
7:00 AM	3	220	49	1	25	1	0	0	0	0	0	0	0	**299**
8:00 AM	1	270	45	0	31	1	0	0	0	0	0	0	0	**348**
9:00 AM	5	304	59	0	32	3	0	0	0	0	0	0	0	**403**
10:00 AM	3	235	55	0	22	1	0	0	0	0	0	0	0	**316**
11:00 AM	1	278	63	1	38	1	0	0	0	0	0	0	0	**382**
12:00 PM	1	291	57	0	25	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	300	62	0	29	1	0	0	0	0	0	0	0	**396**
2:00 PM	1	296	55	0	25	0	0	0	0	0	0	0	0	**377**
3:00 PM	2	242	56	0	30	0	0	0	0	0	0	0	0	**330**
4:00 PM	0	277	45	0	22	0	0	0	0	0	0	0	0	**344**
5:00 PM	3	269	37	0	10	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	237	43	0	10	0	0	0	0	0	0	0	0	**291**
7:00 PM	2	168	26	0	5	0	0	0	0	0	0	0	0	**201**
8:00 PM	0	125	24	0	4	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	105	9	0	1	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	73	6	0	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	53	6	0	3	0	0	0	0	0	0	0	0	**62**
Total	**29**	**3,961**	**740**	**2**	**345**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,086**
Percent	**0.6%**	**77.9%**	**14.5%**	**0.0%**	**6.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

DATA SOLUTIONS

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	1	6	0	0	3	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	19	5	1	4	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	44	11	0	6	1	0	0	0	0	0	0	0	**62**
6:00 AM	2	119	32	0	10	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	359	87	0	34	0	0	0	0	0	0	0	0	**480**
8:00 AM	4	419	76	0	39	0	0	0	0	0	0	0	0	**538**
9:00 AM	0	314	55	0	24	1	0	1	0	0	0	0	0	**395**
10:00 AM	2	260	63	0	18	0	0	0	0	0	0	0	0	**343**
11:00 AM	2	331	49	0	18	0	0	0	0	0	0	0	0	**400**
12:00 PM	3	362	55	0	21	1	0	0	0	0	0	0	0	**442**
1:00 PM	2	317	51	0	14	0	0	0	0	0	0	0	0	**384**
2:00 PM	3	338	39	0	20	0	0	0	0	0	0	0	0	**400**
3:00 PM	2	374	55	0	15	2	0	0	0	0	0	0	0	**448**
4:00 PM	6	382	56	0	18	0	0	1	0	0	0	0	0	**463**
5:00 PM	1	485	65	0	7	0	0	0	0	0	0	0	0	**558**
6:00 PM	3	287	45	0	4	1	0	0	0	0	0	0	0	**340**
7:00 PM	3	165	20	0	3	0	0	0	0	0	0	0	0	**191**
8:00 PM	1	129	13	0	3	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	70	11	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	50	2	0	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	41	4	0	0	0	0	0	0	0	0	0	0	**45**
Total	**35**	**4,900**	**799**	**1**	**264**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.6%**	**81.6%**	**13.3%**	**0.0%**	**4.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	5	0	1	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	10	3	0	2	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	3	0	2	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	19	1	0	3	0	0	0	0	0	0	0	0	**23**
5:00 AM	2	41	4	0	5	1	0	0	0	0	0	0	0	**53**
6:00 AM	0	111	27	0	18	0	0	0	0	0	0	0	0	**156**
7:00 AM	3	220	49	1	25	1	0	0	0	0	0	0	0	**299**
8:00 AM	1	270	45	0	31	1	0	0	0	0	0	0	0	**348**
9:00 AM	5	304	59	0	32	3	0	0	0	0	0	0	0	**403**
10:00 AM	3	235	55	0	22	1	0	0	0	0	0	0	0	**316**
11:00 AM	1	278	63	1	38	1	0	0	0	0	0	0	0	**382**
12:00 PM	1	291	57	0	25	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	300	62	0	29	1	0	0	0	0	0	0	0	**396**
2:00 PM	1	296	55	0	25	0	0	0	0	0	0	0	0	**377**
3:00 PM	2	242	56	0	30	0	0	0	0	0	0	0	0	**330**
4:00 PM	0	277	45	0	22	0	0	0	0	0	0	0	0	**344**
5:00 PM	3	269	37	0	10	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	237	43	0	10	0	0	0	0	0	0	0	0	**291**
7:00 PM	2	168	26	0	5	0	0	0	0	0	0	0	0	**201**
8:00 PM	0	125	24	0	4	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	105	9	0	1	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	73	6	0	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	53	6	0	3	0	0	0	0	0	0	0	0	**62**
Total	**29**	**3,961**	**740**	**2**	**345**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,086**
Percent	**0.6%**	**77.9%**	**14.5%**	**0.0%**	**6.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	1	6	0	0	3	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	19	5	1	4	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	44	11	0	6	1	0	0	0	0	0	0	0	**62**
6:00 AM	2	119	32	0	10	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	359	87	0	34	0	0	0	0	0	0	0	0	**480**
8:00 AM	4	419	76	0	39	0	0	0	0	0	0	0	0	**538**
9:00 AM	0	314	55	0	24	1	0	1	0	0	0	0	0	**395**
10:00 AM	2	260	63	0	18	0	0	0	0	0	0	0	0	**343**
11:00 AM	2	331	49	0	18	0	0	0	0	0	0	0	0	**400**
12:00 PM	3	362	55	0	21	1	0	0	0	0	0	0	0	**442**
1:00 PM	2	317	51	0	14	0	0	0	0	0	0	0	0	**384**
2:00 PM	3	338	39	0	20	0	0	0	0	0	0	0	0	**400**
3:00 PM	2	374	55	0	15	2	0	0	0	0	0	0	0	**448**
4:00 PM	6	382	56	0	18	0	0	1	0	0	0	0	0	**463**
5:00 PM	1	485	65	0	7	0	0	0	0	0	0	0	0	**558**
6:00 PM	3	287	45	0	4	1	0	0	0	0	0	0	0	**340**
7:00 PM	3	165	20	0	3	0	0	0	0	0	0	0	0	**191**
8:00 PM	1	129	13	0	3	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	70	11	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	50	2	0	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	41	4	0	0	0	0	0	0	0	0	0	0	**45**
Total	**35**	**4,900**	**799**	**1**	**264**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.6%**	**81.6%**	**13.3%**	**0.0%**	**4.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 - 5/1/2019
Site Code: 38

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	28	18	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	18	46
1:00 AM	15	7	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	7	22
2:00 AM	7	11	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	11	18
3:00 AM	14	10	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	10	24
4:00 AM	23	29	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	29	52
5:00 AM	53	62	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	62	115
6:00 AM	156	163	319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	163	319
7:00 AM	299	480	779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	299	480	779
8:00 AM	348	**538**	**886**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	348	**538**	**886**
9:00 AM	**403**	395	798	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**403**	395	798
10:00 AM	316	343	659	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	343	659
11:00 AM	382	400	782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	382	400	782
12:00 PM	374	442	816	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	374	442	816
1:00 PM	**396**	384	780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**396**	384	780
2:00 PM	377	400	777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	377	400	777
3:00 PM	330	448	778	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	448	778
4:00 PM	344	463	807	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344	463	807
5:00 PM	319	**558**	**877**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	319	**558**	**877**
6:00 PM	291	340	631	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	291	340	631
7:00 PM	201	191	392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	201	191	392
8:00 PM	153	146	299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	146	299
9:00 PM	115	82	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	82	197
10:00 PM	80	52	132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	52	132
11:00 PM	62	45	107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	45	107
Total	5,086	6,007	11,093	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,086	6,007	11,093
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	09:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	09:00	08:00	08:00
Vol.	403	538	886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	403	538	886
PM Peak	13:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13:00	17:00	17:00
Vol.	396	558	877	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	396	558	877

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 39

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	17	3,783	824	2	275	17	0	2	6	2	0	0	0	4,928
Percent	0.3%	76.8%	16.7%	0.0%	5.6%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	26	4,308	559	1	124	12	0	1	5	0	0	0	0	5,036
Percent	0.5%	85.5%	11.1%	0.0%	2.5%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	43	8,091	1,383	3	399	29	0	3	11	2	0	0	0	9,964
Percent	0.4%	81.2%	13.9%	0.0%	4.0%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	25	2	0	1	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	26	10	0	8	0	0	0	0	0	0	0	0	**44**
6:00 AM	2	78	24	0	14	2	0	0	1	0	0	0	0	**121**
7:00 AM	0	99	33	0	21	0	0	1	0	0	0	0	0	**154**
8:00 AM	0	191	40	0	14	1	0	0	1	0	0	0	0	**247**
9:00 AM	1	203	46	0	13	1	0	0	0	0	0	0	0	**264**
10:00 AM	0	200	42	0	15	1	0	0	0	0	0	0	0	**258**
11:00 AM	1	218	35	0	16	0	0	1	1	1	0	0	0	**273**
12:00 PM	0	267	64	0	18	5	0	0	1	0	0	0	0	**355**
1:00 PM	1	222	54	1	15	0	0	0	2	0	0	0	0	**295**
2:00 PM	2	234	67	0	23	0	0	0	0	1	0	0	0	**327**
3:00 PM	2	258	59	0	17	2	0	0	0	0	0	0	0	**338**
4:00 PM	3	323	74	0	12	1	0	0	0	0	0	0	0	**413**
5:00 PM	1	395	86	1	32	2	0	0	0	0	0	0	0	**517**
6:00 PM	1	309	66	0	19	1	0	0	0	0	0	0	0	**396**
7:00 PM	1	212	42	0	11	0	0	0	0	0	0	0	0	**266**
8:00 PM	0	175	38	0	9	0	0	0	0	0	0	0	0	**222**
9:00 PM	1	162	20	0	5	1	0	0	0	0	0	0	0	**189**
10:00 PM	0	98	12	0	11	0	0	0	0	0	0	0	0	**121**
11:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
Total	**17**	**3,783**	**824**	**2**	**275**	**17**	**0**	**2**	**6**	**2**	**0**	**0**	**0**	**4,928**
Percent	**0.3%**	**76.8%**	**16.7%**	**0.0%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	15	0	0	1	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	22	1	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	1	63	14	0	3	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	157	40	0	1	0	0	0	1	0	0	0	0	**199**
7:00 AM	2	321	76	1	24	2	0	0	0	0	0	0	0	**426**
8:00 AM	1	299	33	0	10	1	0	1	0	0	0	0	0	**345**
9:00 AM	2	270	27	0	15	4	0	0	1	0	0	0	0	**319**
10:00 AM	2	239	34	0	5	2	0	0	0	0	0	0	0	**282**
11:00 AM	1	214	26	0	6	0	0	0	1	0	0	0	0	**248**
12:00 PM	1	281	43	0	8	0	0	0	1	0	0	0	0	**334**
1:00 PM	2	300	35	0	7	0	0	0	1	0	0	0	0	**345**
2:00 PM	2	304	36	0	9	1	0	0	0	0	0	0	0	**352**
3:00 PM	3	308	37	0	12	1	0	0	0	0	0	0	0	**361**
4:00 PM	5	293	34	0	6	1	0	0	0	0	0	0	0	**339**
5:00 PM	2	308	36	0	5	0	0	0	0	0	0	0	0	**351**
6:00 PM	1	267	29	0	3	0	0	0	0	0	0	0	0	**300**
7:00 PM	0	286	26	0	3	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	145	13	0	2	0	0	0	0	0	0	0	0	**160**
9:00 PM	1	84	7	0	2	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	61	5	0	2	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	45	3	0	0	0	0	0	0	0	0	0	0	**48**
Total	**26**	**4,308**	**559**	**1**	**124**	**12**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.5%**	**85.5%**	**11.1%**	**0.0%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	25	2	0	1	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	26	10	0	8	0	0	0	0	0	0	0	0	**44**
6:00 AM	2	78	24	0	14	2	0	0	1	0	0	0	0	**121**
7:00 AM	0	99	33	0	21	0	0	1	0	0	0	0	0	**154**
8:00 AM	0	191	40	0	14	1	0	0	1	0	0	0	0	**247**
9:00 AM	1	203	46	0	13	1	0	0	0	0	0	0	0	**264**
10:00 AM	0	200	42	0	15	1	0	0	0	0	0	0	0	**258**
11:00 AM	1	218	35	0	16	0	0	1	1	1	0	0	0	**273**
12:00 PM	0	267	64	0	18	5	0	0	1	0	0	0	0	**355**
1:00 PM	1	222	54	1	15	0	0	0	2	0	0	0	0	**295**
2:00 PM	2	234	67	0	23	0	0	0	0	1	0	0	0	**327**
3:00 PM	2	258	59	0	17	2	0	0	0	0	0	0	0	**338**
4:00 PM	3	323	74	0	12	1	0	0	0	0	0	0	0	**413**
5:00 PM	1	395	86	1	32	2	0	0	0	0	0	0	0	**517**
6:00 PM	1	309	66	0	19	1	0	0	0	0	0	0	0	**396**
7:00 PM	1	212	42	0	11	0	0	0	0	0	0	0	0	**266**
8:00 PM	0	175	38	0	9	0	0	0	0	0	0	0	0	**222**
9:00 PM	1	162	20	0	5	1	0	0	0	0	0	0	0	**189**
10:00 PM	0	98	12	0	11	0	0	0	0	0	0	0	0	**121**
11:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
Total	**17**	**3,783**	**824**	**2**	**275**	**17**	**0**	**2**	**6**	**2**	**0**	**0**	**0**	**4,928**
Percent	**0.3%**	**76.8%**	**16.7%**	**0.0%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	15	0	0	1	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	22	1	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	1	63	14	0	3	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	157	40	0	1	0	0	0	1	0	0	0	0	**199**
7:00 AM	2	321	76	1	24	2	0	0	0	0	0	0	0	**426**
8:00 AM	1	299	33	0	10	1	0	1	0	0	0	0	0	**345**
9:00 AM	2	270	27	0	15	4	0	0	1	0	0	0	0	**319**
10:00 AM	2	239	34	0	5	2	0	0	0	0	0	0	0	**282**
11:00 AM	1	214	26	0	6	0	0	0	1	0	0	0	0	**248**
12:00 PM	1	281	43	0	8	0	0	0	1	0	0	0	0	**334**
1:00 PM	2	300	35	0	7	0	0	0	1	0	0	0	0	**345**
2:00 PM	2	304	36	0	9	1	0	0	0	0	0	0	0	**352**
3:00 PM	3	308	37	0	12	1	0	0	0	0	0	0	0	**361**
4:00 PM	5	293	34	0	6	1	0	0	0	0	0	0	0	**339**
5:00 PM	2	308	36	0	5	0	0	0	0	0	0	0	0	**351**
6:00 PM	1	267	29	0	3	0	0	0	0	0	0	0	0	**300**
7:00 PM	0	286	26	0	3	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	145	13	0	2	0	0	0	0	0	0	0	0	**160**
9:00 PM	1	84	7	0	2	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	61	5	0	2	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	45	3	0	0	0	0	0	0	0	0	0	0	**48**
Total	**26**	**4,308**	**559**	**1**	**124**	**12**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.5%**	**85.5%**	**11.1%**	**0.0%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	25	2	0	1	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	26	10	0	8	0	0	0	0	0	0	0	0	**44**
6:00 AM	2	78	24	0	14	2	0	0	1	0	0	0	0	**121**
7:00 AM	0	99	33	0	21	0	0	1	0	0	0	0	0	**154**
8:00 AM	0	191	40	0	14	1	0	0	1	0	0	0	0	**247**
9:00 AM	1	203	46	0	13	1	0	0	0	0	0	0	0	**264**
10:00 AM	0	200	42	0	15	1	0	0	0	0	0	0	0	**258**
11:00 AM	1	218	35	0	16	0	0	1	1	1	0	0	0	**273**
12:00 PM	0	267	64	0	18	5	0	0	1	0	0	0	0	**355**
1:00 PM	1	222	54	1	15	0	0	0	2	0	0	0	0	**295**
2:00 PM	2	234	67	0	23	0	0	0	0	1	0	0	0	**327**
3:00 PM	2	258	59	0	17	2	0	0	0	0	0	0	0	**338**
4:00 PM	3	323	74	0	12	1	0	0	0	0	0	0	0	**413**
5:00 PM	1	395	86	1	32	2	0	0	0	0	0	0	0	**517**
6:00 PM	1	309	66	0	19	1	0	0	0	0	0	0	0	**396**
7:00 PM	1	212	42	0	11	0	0	0	0	0	0	0	0	**266**
8:00 PM	0	175	38	0	9	0	0	0	0	0	0	0	0	**222**
9:00 PM	1	162	20	0	5	1	0	0	0	0	0	0	0	**189**
10:00 PM	0	98	12	0	11	0	0	0	0	0	0	0	0	**121**
11:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
Total	**17**	**3,783**	**824**	**2**	**275**	**17**	**0**	**2**	**6**	**2**	**0**	**0**	**0**	**4,928**
Percent	**0.3%**	**76.8%**	**16.7%**	**0.0%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	15	0	0	1	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	22	1	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	1	63	14	0	3	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	157	40	0	1	0	0	0	1	0	0	0	0	**199**
7:00 AM	2	321	76	1	24	2	0	0	0	0	0	0	0	**426**
8:00 AM	1	299	33	0	10	1	0	1	0	0	0	0	0	**345**
9:00 AM	2	270	27	0	15	4	0	0	1	0	0	0	0	**319**
10:00 AM	2	239	34	0	5	2	0	0	0	0	0	0	0	**282**
11:00 AM	1	214	26	0	6	0	0	0	1	0	0	0	0	**248**
12:00 PM	1	281	43	0	8	0	0	0	1	0	0	0	0	**334**
1:00 PM	2	300	35	0	7	0	0	0	1	0	0	0	0	**345**
2:00 PM	2	304	36	0	9	1	0	0	0	0	0	0	0	**352**
3:00 PM	3	308	37	0	12	1	0	0	0	0	0	0	0	**361**
4:00 PM	5	293	34	0	6	1	0	0	0	0	0	0	0	**339**
5:00 PM	2	308	36	0	5	0	0	0	0	0	0	0	0	**351**
6:00 PM	1	267	29	0	3	0	0	0	0	0	0	0	0	**300**
7:00 PM	0	286	26	0	3	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	145	13	0	2	0	0	0	0	0	0	0	0	**160**
9:00 PM	1	84	7	0	2	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	61	5	0	2	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	45	3	0	0	0	0	0	0	0	0	0	0	**48**
Total	**26**	**4,308**	**559**	**1**	**124**	**12**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.5%**	**85.5%**	**11.1%**	**0.0%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 - 5/1/2019
Site Code: 39

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	29	16	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	16	45
1:00 AM	18	16	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	16	34
2:00 AM	9	7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	7	16
3:00 AM	4	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11
4:00 AM	3	23	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	23	26
5:00 AM	44	81	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	81	125
6:00 AM	121	199	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	199	320
7:00 AM	154	**426**	580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	**426**	580
8:00 AM	247	345	**592**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	345	**592**
9:00 AM	264	319	583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	264	319	583
10:00 AM	258	282	540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	258	282	540
11:00 AM	**273**	248	521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**273**	248	521
12:00 PM	355	334	689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	334	689
1:00 PM	295	345	640	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	295	345	640
2:00 PM	327	352	679	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	352	679
3:00 PM	338	**361**	699	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	338	**361**	699
4:00 PM	413	339	752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413	339	752
5:00 PM	**517**	351	**868**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**517**	351	**868**
6:00 PM	396	300	696	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	396	300	696
7:00 PM	266	315	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	266	315	581
8:00 PM	222	160	382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	222	160	382
9:00 PM	189	94	283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189	94	283
10:00 PM	121	68	189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	68	189
11:00 PM	65	48	113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	48	113
Total	4,928	5,036	9,964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,928	5,036	9,964
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	11:00	07:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	08:00
Vol.	273	426	592	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	426	592
PM Peak	17:00	15:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	15:00	17:00
Vol.	517	361	868	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	517	361	868

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Woodland Ave, B/W Lindaro & Irwin

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 40

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	13	1,248	374	0	118	7	0	0	1	0	0	0	0	1,761
Percent	0.7%	70.9%	21.2%	0.0%	6.7%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	27	1,228	380	0	121	13	0	0	1	0	0	0	0	1,770
Percent	1.5%	69.4%	21.5%	0.0%	6.8%	0.7%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	40	2,476	754	0	239	20	0	0	2	0	0	0	0	3,531
Percent	1.1%	70.1%	21.4%	0.0%	6.8%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	9	5	0	1	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	36	13	0	7	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	104	57	0	18	0	0	0	0	0	0	0	0	**179**
8:00 AM	0	93	42	0	17	0	0	0	0	0	0	0	0	**152**
9:00 AM	2	63	20	0	10	2	0	0	0	0	0	0	0	**97**
10:00 AM	1	68	16	0	7	1	0	0	1	0	0	0	0	**94**
11:00 AM	0	66	26	0	6	2	0	0	0	0	0	0	0	**100**
12:00 PM	0	69	26	0	10	1	0	0	0	0	0	0	0	**106**
1:00 PM	0	61	14	0	12	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	69	25	0	4	0	0	0	0	0	0	0	0	**98**
3:00 PM	1	105	24	0	4	0	0	0	0	0	0	0	0	**134**
4:00 PM	1	104	19	0	5	0	0	0	0	0	0	0	0	**129**
5:00 PM	2	102	38	0	8	0	0	0	0	0	0	0	0	**150**
6:00 PM	4	73	14	0	4	0	0	0	0	0	0	0	0	**95**
7:00 PM	1	86	13	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	1	48	5	0	3	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	43	11	0	1	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**13**	**1,248**	**374**	**0**	**118**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.7%**	**70.9%**	**21.2%**	**0.0%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	5	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	10	9	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	2	32	16	0	9	0	0	0	0	0	0	0	0	**59**
7:00 AM	2	102	30	0	8	0	0	0	0	0	0	0	0	**142**
8:00 AM	5	102	34	0	7	1	0	0	0	0	0	0	0	**149**
9:00 AM	4	71	16	0	8	4	0	0	0	0	0	0	0	**103**
10:00 AM	1	63	19	0	11	3	0	0	0	0	0	0	0	**97**
11:00 AM	2	68	25	0	9	1	0	0	1	0	0	0	0	**106**
12:00 PM	0	63	17	0	15	3	0	0	0	0	0	0	0	**98**
1:00 PM	3	53	27	0	4	1	0	0	0	0	0	0	0	**88**
2:00 PM	2	116	39	0	13	0	0	0	0	0	0	0	0	**170**
3:00 PM	1	94	25	0	8	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	100	45	0	8	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	94	27	0	10	0	0	0	0	0	0	0	0	**131**
6:00 PM	1	84	18	0	6	0	0	0	0	0	0	0	0	**109**
7:00 PM	1	58	3	0	2	0	0	0	0	0	0	0	0	**64**
8:00 PM	1	44	15	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	40	4	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
Total	**27**	**1,228**	**380**	**0**	**121**	**13**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,770**
Percent	**1.5%**	**69.4%**	**21.5%**	**0.0%**	**6.8%**	**0.7%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	9	5	0	1	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	36	13	0	7	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	104	57	0	18	0	0	0	0	0	0	0	0	**179**
8:00 AM	0	93	42	0	17	0	0	0	0	0	0	0	0	**152**
9:00 AM	2	63	20	0	10	2	0	0	0	0	0	0	0	**97**
10:00 AM	1	68	16	0	7	1	0	0	1	0	0	0	0	**94**
11:00 AM	0	66	26	0	6	2	0	0	0	0	0	0	0	**100**
12:00 PM	0	69	26	0	10	1	0	0	0	0	0	0	0	**106**
1:00 PM	0	61	14	0	12	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	69	25	0	4	0	0	0	0	0	0	0	0	**98**
3:00 PM	1	105	24	0	4	0	0	0	0	0	0	0	0	**134**
4:00 PM	1	104	19	0	5	0	0	0	0	0	0	0	0	**129**
5:00 PM	2	102	38	0	8	0	0	0	0	0	0	0	0	**150**
6:00 PM	4	73	14	0	4	0	0	0	0	0	0	0	0	**95**
7:00 PM	1	86	13	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	1	48	5	0	3	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	43	11	0	1	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**13**	**1,248**	**374**	**0**	**118**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.7%**	**70.9%**	**21.2%**	**0.0%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	5	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	10	9	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	2	32	16	0	9	0	0	0	0	0	0	0	0	**59**
7:00 AM	2	102	30	0	8	0	0	0	0	0	0	0	0	**142**
8:00 AM	5	102	34	0	7	1	0	0	0	0	0	0	0	**149**
9:00 AM	4	71	16	0	8	4	0	0	0	0	0	0	0	**103**
10:00 AM	1	63	19	0	11	3	0	0	0	0	0	0	0	**97**
11:00 AM	2	68	25	0	9	1	0	0	1	0	0	0	0	**106**
12:00 PM	0	63	17	0	15	3	0	0	0	0	0	0	0	**98**
1:00 PM	3	53	27	0	4	1	0	0	0	0	0	0	0	**88**
2:00 PM	2	116	39	0	13	0	0	0	0	0	0	0	0	**170**
3:00 PM	1	94	25	0	8	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	100	45	0	8	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	94	27	0	10	0	0	0	0	0	0	0	0	**131**
6:00 PM	1	84	18	0	6	0	0	0	0	0	0	0	0	**109**
7:00 PM	1	58	3	0	2	0	0	0	0	0	0	0	0	**64**
8:00 PM	1	44	15	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	40	4	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
Total	**27**	**1,228**	**380**	**0**	**121**	**13**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,770**
Percent	**1.5%**	**69.4%**	**21.5%**	**0.0%**	**6.8%**	**0.7%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	9	5	0	1	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	36	13	0	7	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	104	57	0	18	0	0	0	0	0	0	0	0	**179**
8:00 AM	0	93	42	0	17	0	0	0	0	0	0	0	0	**152**
9:00 AM	2	63	20	0	10	2	0	0	0	0	0	0	0	**97**
10:00 AM	1	68	16	0	7	1	0	0	1	0	0	0	0	**94**
11:00 AM	0	66	26	0	6	2	0	0	0	0	0	0	0	**100**
12:00 PM	0	69	26	0	10	1	0	0	0	0	0	0	0	**106**
1:00 PM	0	61	14	0	12	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	69	25	0	4	0	0	0	0	0	0	0	0	**98**
3:00 PM	1	105	24	0	4	0	0	0	0	0	0	0	0	**134**
4:00 PM	1	104	19	0	5	0	0	0	0	0	0	0	0	**129**
5:00 PM	2	102	38	0	8	0	0	0	0	0	0	0	0	**150**
6:00 PM	4	73	14	0	4	0	0	0	0	0	0	0	0	**95**
7:00 PM	1	86	13	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	1	48	5	0	3	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	43	11	0	1	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**13**	**1,248**	**374**	**0**	**118**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.7%**	**70.9%**	**21.2%**	**0.0%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	5	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	10	9	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	2	32	16	0	9	0	0	0	0	0	0	0	0	**59**
7:00 AM	2	102	30	0	8	0	0	0	0	0	0	0	0	**142**
8:00 AM	5	102	34	0	7	1	0	0	0	0	0	0	0	**149**
9:00 AM	4	71	16	0	8	4	0	0	0	0	0	0	0	**103**
10:00 AM	1	63	19	0	11	3	0	0	0	0	0	0	0	**97**
11:00 AM	2	68	25	0	9	1	0	0	1	0	0	0	0	**106**
12:00 PM	0	63	17	0	15	3	0	0	0	0	0	0	0	**98**
1:00 PM	3	53	27	0	4	1	0	0	0	0	0	0	0	**88**
2:00 PM	2	116	39	0	13	0	0	0	0	0	0	0	0	**170**
3:00 PM	1	94	25	0	8	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	100	45	0	8	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	94	27	0	10	0	0	0	0	0	0	0	0	**131**
6:00 PM	1	84	18	0	6	0	0	0	0	0	0	0	0	**109**
7:00 PM	1	58	3	0	2	0	0	0	0	0	0	0	0	**64**
8:00 PM	1	44	15	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	40	4	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
Total	**27**	**1,228**	**380**	**0**	**121**	**13**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,770**
Percent	**1.5%**	**69.4%**	**21.5%**	**0.0%**	**6.8%**	**0.7%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 - 4/30/2019
Site Code: 40

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
1:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
2:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
3:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
4:00 AM	1	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	6
5:00 AM	15	20	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	20	35
6:00 AM	56	59	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	59	115
7:00 AM	**179**	142	**321**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**179**	142	**321**
8:00 AM	152	**149**	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	152	**149**	301
9:00 AM	97	103	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	103	200
10:00 AM	94	97	191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	97	191
11:00 AM	100	106	206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	106	206
12:00 PM	106	98	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	98	204
1:00 PM	87	88	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	88	175
2:00 PM	98	**170**	268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	**170**	268
3:00 PM	134	128	262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	128	262
4:00 PM	129	153	**282**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	153	**282**
5:00 PM	**150**	131	281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**150**	131	281
6:00 PM	95	109	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95	109	204
7:00 PM	100	64	164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	64	164
8:00 PM	57	61	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	61	118
9:00 PM	55	44	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	44	99
10:00 PM	31	20	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	20	51
11:00 PM	12	11	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	11	23
Total	1,761	1,770	3,531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,761	1,770	3,531
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	07:00	08:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	08:00	07:00
Vol.	179	149	321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	179	149	321
PM Peak	17:00	14:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	14:00	16:00
Vol.	150	170	282	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	282

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Woodland Ave, B/W Irwin & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 41

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	46	2,451	781	1	272	17	0	1	3	0	0	0	0	3,572
Percent	1.3%	68.6%	21.9%	0.0%	7.6%	0.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	38	1,838	643	2	234	18	0	0	3	1	0	0	0	2,777
Percent	1.4%	66.2%	23.2%	0.1%	8.4%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	84	4,289	1,424	3	506	35	0	1	6	1	0	0	0	6,349
Percent	1.3%	67.6%	22.4%	0.0%	8.0%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	19	12	0	8	0	0	0	0	0	0	0	0	**39**
6:00 AM	2	91	43	0	14	0	0	0	0	0	0	0	0	**150**
7:00 AM	1	198	102	0	31	0	0	1	0	0	0	0	0	**333**
8:00 AM	2	161	77	0	31	2	0	0	0	0	0	0	0	**273**
9:00 AM	1	134	38	0	18	4	0	0	1	0	0	0	0	**196**
10:00 AM	4	128	38	0	22	1	0	0	1	0	0	0	0	**194**
11:00 AM	3	122	51	0	16	5	0	0	0	0	0	0	0	**197**
12:00 PM	0	133	54	0	19	1	0	0	0	0	0	0	0	**207**
1:00 PM	3	134	40	0	22	1	0	0	0	0	0	0	0	**200**
2:00 PM	0	159	45	0	21	0	0	0	0	0	0	0	0	**225**
3:00 PM	3	169	49	1	26	0	0	0	0	0	0	0	0	**248**
4:00 PM	4	206	52	0	13	0	0	0	0	0	0	0	0	**275**
5:00 PM	10	198	55	0	12	0	0	0	1	0	0	0	0	**276**
6:00 PM	6	156	33	0	7	0	0	0	0	0	0	0	0	**202**
7:00 PM	3	144	30	0	2	1	0	0	0	0	0	0	0	**180**
8:00 PM	2	106	24	0	3	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	72	19	0	3	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	65	11	0	2	1	0	0	0	0	0	0	0	**80**
11:00 PM	0	27	1	0	1	0	0	0	0	0	0	0	0	**29**
Total	**46**	**2,451**	**781**	**1**	**272**	**17**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3,572**
Percent	**1.3%**	**68.6%**	**21.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	3	0	2	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	4	3	0	1	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	11	10	0	5	0	0	0	0	0	0	0	0	**26**
6:00 AM	5	50	32	1	18	0	0	0	0	0	0	0	0	**106**
7:00 AM	4	159	67	0	20	0	0	0	1	1	0	0	0	**252**
8:00 AM	4	156	53	0	16	3	0	0	0	0	0	0	0	**232**
9:00 AM	2	106	37	0	18	3	0	0	0	0	0	0	0	**166**
10:00 AM	4	92	40	1	16	3	0	0	1	0	0	0	0	**157**
11:00 AM	3	109	44	0	23	3	0	0	1	0	0	0	0	**183**
12:00 PM	3	102	29	0	13	4	0	0	0	0	0	0	0	**151**
1:00 PM	2	103	33	0	15	0	0	0	0	0	0	0	0	**153**
2:00 PM	2	145	57	0	28	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	135	62	0	14	0	0	0	0	0	0	0	0	**213**
4:00 PM	3	144	57	0	14	0	0	0	0	0	0	0	0	**218**
5:00 PM	1	148	38	0	12	1	0	0	0	0	0	0	0	**200**
6:00 PM	0	121	26	0	8	1	0	0	0	0	0	0	0	**156**
7:00 PM	0	71	14	0	4	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	75	24	0	3	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	50	6	0	1	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	29	2	0	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
Total	**38**	**1,838**	**643**	**2**	**234**	**18**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**2,777**
Percent	**1.4%**	**66.2%**	**23.2%**	**0.1%**	**8.4%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	19	12	0	8	0	0	0	0	0	0	0	0	**39**
6:00 AM	2	91	43	0	14	0	0	0	0	0	0	0	0	**150**
7:00 AM	1	198	102	0	31	0	0	1	0	0	0	0	0	**333**
8:00 AM	2	161	77	0	31	2	0	0	0	0	0	0	0	**273**
9:00 AM	1	134	38	0	18	4	0	0	1	0	0	0	0	**196**
10:00 AM	4	128	38	0	22	1	0	0	1	0	0	0	0	**194**
11:00 AM	3	122	51	0	16	5	0	0	0	0	0	0	0	**197**
12:00 PM	0	133	54	0	19	1	0	0	0	0	0	0	0	**207**
1:00 PM	3	134	40	0	22	1	0	0	0	0	0	0	0	**200**
2:00 PM	0	159	45	0	21	0	0	0	0	0	0	0	0	**225**
3:00 PM	3	169	49	1	26	0	0	0	0	0	0	0	0	**248**
4:00 PM	4	206	52	0	13	0	0	0	0	0	0	0	0	**275**
5:00 PM	10	198	55	0	12	0	0	0	1	0	0	0	0	**276**
6:00 PM	6	156	33	0	7	0	0	0	0	0	0	0	0	**202**
7:00 PM	3	144	30	0	2	1	0	0	0	0	0	0	0	**180**
8:00 PM	2	106	24	0	3	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	72	19	0	3	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	65	11	0	2	1	0	0	0	0	0	0	0	**80**
11:00 PM	0	27	1	0	1	0	0	0	0	0	0	0	0	**29**
Total	**46**	**2,451**	**781**	**1**	**272**	**17**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3,572**
Percent	**1.3%**	**68.6%**	**21.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	3	0	2	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	4	3	0	1	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	11	10	0	5	0	0	0	0	0	0	0	0	**26**
6:00 AM	5	50	32	1	18	0	0	0	0	0	0	0	0	**106**
7:00 AM	4	159	67	0	20	0	0	0	1	1	0	0	0	**252**
8:00 AM	4	156	53	0	16	3	0	0	0	0	0	0	0	**232**
9:00 AM	2	106	37	0	18	3	0	0	0	0	0	0	0	**166**
10:00 AM	4	92	40	1	16	3	0	0	1	0	0	0	0	**157**
11:00 AM	3	109	44	0	23	3	0	0	1	0	0	0	0	**183**
12:00 PM	3	102	29	0	13	4	0	0	0	0	0	0	0	**151**
1:00 PM	2	103	33	0	15	0	0	0	0	0	0	0	0	**153**
2:00 PM	2	145	57	0	28	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	135	62	0	14	0	0	0	0	0	0	0	0	**213**
4:00 PM	3	144	57	0	14	0	0	0	0	0	0	0	0	**218**
5:00 PM	1	148	38	0	12	1	0	0	0	0	0	0	0	**200**
6:00 PM	0	121	26	0	8	1	0	0	0	0	0	0	0	**156**
7:00 PM	0	71	14	0	4	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	75	24	0	3	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	50	6	0	1	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	29	2	0	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
Total	**38**	**1,838**	**643**	**2**	**234**	**18**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**2,777**
Percent	**1.4%**	**66.2%**	**23.2%**	**0.1%**	**8.4%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	19	12	0	8	0	0	0	0	0	0	0	0	**39**
6:00 AM	2	91	43	0	14	0	0	0	0	0	0	0	0	**150**
7:00 AM	1	198	102	0	31	0	0	1	0	0	0	0	0	**333**
8:00 AM	2	161	77	0	31	2	0	0	0	0	0	0	0	**273**
9:00 AM	1	134	38	0	18	4	0	0	1	0	0	0	0	**196**
10:00 AM	4	128	38	0	22	1	0	0	1	0	0	0	0	**194**
11:00 AM	3	122	51	0	16	5	0	0	0	0	0	0	0	**197**
12:00 PM	0	133	54	0	19	1	0	0	0	0	0	0	0	**207**
1:00 PM	3	134	40	0	22	1	0	0	0	0	0	0	0	**200**
2:00 PM	0	159	45	0	21	0	0	0	0	0	0	0	0	**225**
3:00 PM	3	169	49	1	26	0	0	0	0	0	0	0	0	**248**
4:00 PM	4	206	52	0	13	0	0	0	0	0	0	0	0	**275**
5:00 PM	10	198	55	0	12	0	0	0	1	0	0	0	0	**276**
6:00 PM	6	156	33	0	7	0	0	0	0	0	0	0	0	**202**
7:00 PM	3	144	30	0	2	1	0	0	0	0	0	0	0	**180**
8:00 PM	2	106	24	0	3	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	72	19	0	3	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	65	11	0	2	1	0	0	0	0	0	0	0	**80**
11:00 PM	0	27	1	0	1	0	0	0	0	0	0	0	0	**29**
Total	**46**	**2,451**	**781**	**1**	**272**	**17**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3,572**
Percent	**1.3%**	**68.6%**	**21.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	3	0	2	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	4	3	0	1	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	11	10	0	5	0	0	0	0	0	0	0	0	**26**
6:00 AM	5	50	32	1	18	0	0	0	0	0	0	0	0	**106**
7:00 AM	4	159	67	0	20	0	0	0	1	1	0	0	0	**252**
8:00 AM	4	156	53	0	16	3	0	0	0	0	0	0	0	**232**
9:00 AM	2	106	37	0	18	3	0	0	0	0	0	0	0	**166**
10:00 AM	4	92	40	1	16	3	0	0	1	0	0	0	0	**157**
11:00 AM	3	109	44	0	23	3	0	0	1	0	0	0	0	**183**
12:00 PM	3	102	29	0	13	4	0	0	0	0	0	0	0	**151**
1:00 PM	2	103	33	0	15	0	0	0	0	0	0	0	0	**153**
2:00 PM	2	145	57	0	28	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	135	62	0	14	0	0	0	0	0	0	0	0	**213**
4:00 PM	3	144	57	0	14	0	0	0	0	0	0	0	0	**218**
5:00 PM	1	148	38	0	12	1	0	0	0	0	0	0	0	**200**
6:00 PM	0	121	26	0	8	1	0	0	0	0	0	0	0	**156**
7:00 PM	0	71	14	0	4	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	75	24	0	3	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	50	6	0	1	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	29	2	0	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
Total	**38**	**1,838**	**643**	**2**	**234**	**18**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**2,777**
Percent	**1.4%**	**66.2%**	**23.2%**	**0.1%**	**8.4%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 - 4/30/2019
Site Code: 41

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	8	14	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	14	22
1:00 AM	9	3	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	3	12
2:00 AM	6	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	11
3:00 AM	6	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	8
4:00 AM	10	9	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	9	19
5:00 AM	39	26	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	26	65
6:00 AM	150	106	256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	106	256
7:00 AM	**333**	**252**	**585**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**333**	**252**	**585**
8:00 AM	273	232	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	232	505
9:00 AM	196	166	362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	166	362
10:00 AM	194	157	351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	157	351
11:00 AM	197	183	380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	183	380
12:00 PM	207	151	358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	207	151	358
1:00 PM	200	153	353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	153	353
2:00 PM	225	**232**	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	**232**	457
3:00 PM	248	213	461	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248	213	461
4:00 PM	275	218	**493**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	218	**493**
5:00 PM	**276**	200	476	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**276**	200	476
6:00 PM	202	156	358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	202	156	358
7:00 PM	180	89	269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	89	269
8:00 PM	135	103	238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	103	238
9:00 PM	94	57	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	57	151
10:00 PM	80	33	113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	33	113
11:00 PM	29	17	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	17	46
Total	3,572	2,777	6,349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,572	2,777	6,349
Percent	56%	44%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56%	44%	-
AM Peak	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	07:00	07:00
Vol.	333	252	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	333	252	585
PM Peak	17:00	14:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	14:00	16:00
Vol.	276	232	493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276	232	493

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

APPENDIX I:
TRANSPORTATION DATA

San Rafael General Plan Update

Roadway Segment Average Daily Traffic Volumes

Existing Conditions

Vehicle Classification Report Summary

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 01

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	84	12,378	3,575	12	666	122	0	41	57	60	5	2	27	17,029
Percent	0.5%	72.7%	21.0%	0.1%	3.9%	0.7%	0.0%	0.2%	0.3%	0.4%	0.0%	0.0%	0.2%	100%
Westbound	89	11,349	2,923	10	722	131	0	27	46	67	2	3	49	15,418
Percent	0.6%	73.6%	19.0%	0.1%	4.7%	0.8%	0.0%	0.2%	0.3%	0.4%	0.0%	0.0%	0.3%	100%
Total	173	23,727	6,498	22	1,388	253	0	68	103	127	7	5	76	32,447
Percent	0.5%	73.1%	20.0%	0.1%	4.3%	0.8%	0.0%	0.2%	0.3%	0.4%	0.0%	0.0%	0.2%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	35	2	0	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	30	4	0	3	1	0	0	0	0	0	0	0	**38**
2:00 AM	0	15	1	0	1	0	0	0	0	0	0	0	0	**17**
3:00 AM	1	16	4	0	1	1	0	0	0	0	0	0	0	**23**
4:00 AM	0	58	16	0	8	1	0	0	1	0	0	0	0	**84**
5:00 AM	4	192	64	0	14	3	0	0	1	0	0	0	0	**278**
6:00 AM	9	569	162	0	37	6	0	2	4	3	0	0	2	**794**
7:00 AM	7	932	269	0	42	8	0	6	1	7	0	0	3	**1,275**
8:00 AM	8	1,014	279	0	35	15	0	4	7	6	0	0	3	**1,371**
9:00 AM	7	939	249	0	53	11	0	1	2	5	0	0	1	**1,268**
10:00 AM	2	759	314	0	51	6	0	3	2	0	1	0	2	**1,140**
11:00 AM	1	791	238	0	52	10	0	1	3	3	1	0	0	**1,100**
12:00 PM	7	807	219	1	47	7	0	3	3	4	0	0	1	**1,099**
1:00 PM	7	759	275	0	60	8	0	5	6	3	1	0	1	**1,125**
2:00 PM	4	823	233	0	49	10	0	2	8	3	0	0	2	**1,134**
3:00 PM	2	771	274	2	52	8	0	3	6	4	2	1	4	**1,129**
4:00 PM	8	775	268	2	43	5	0	5	3	4	0	0	3	**1,116**
5:00 PM	2	799	190	2	44	8	0	3	3	5	0	0	1	**1,057**
6:00 PM	8	693	190	3	23	7	0	1	3	4	0	1	0	**933**
7:00 PM	2	515	123	2	20	4	0	2	3	4	0	0	3	**678**
8:00 PM	2	417	89	0	15	2	0	0	0	4	0	0	0	**529**
9:00 PM	2	357	66	0	8	0	0	0	0	0	0	0	1	**434**
10:00 PM	1	210	32	0	6	1	0	0	1	1	0	0	0	**252**
11:00 PM	0	102	14	0	1	0	0	0	0	0	0	0	0	**117**
Total	**84**	**12,378**	**3,575**	**12**	**666**	**122**	**0**	**41**	**57**	**60**	**5**	**2**	**27**	**17,029**
Percent	**0.5%**	**72.7%**	**21.0%**	**0.1%**	**3.9%**	**0.7%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.2%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

DATA SOLUTIONS

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	71	9	0	0	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	31	4	0	2	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
3:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	32	10	1	4	1	0	0	2	0	0	0	0	**50**
5:00 AM	1	109	43	2	19	1	0	0	2	1	0	0	2	**180**
6:00 AM	2	240	86	4	29	12	0	2	3	1	0	0	5	**384**
7:00 AM	5	450	190	0	73	9	0	1	8	12	0	0	8	**756**
8:00 AM	6	614	237	1	68	20	0	4	6	5	0	0	8	**969**
9:00 AM	8	532	196	0	48	10	0	3	8	8	1	0	5	**819**
10:00 AM	4	609	188	0	60	11	0	2	3	5	0	1	2	**885**
11:00 AM	4	690	191	0	45	4	0	0	2	1	0	0	3	**940**
12:00 PM	1	751	185	0	52	9	0	5	1	3	1	0	1	**1,009**
1:00 PM	5	695	210	0	64	4	0	2	0	2	0	2	0	**984**
2:00 PM	7	792	185	2	53	3	0	1	3	7	0	0	1	**1,054**
3:00 PM	6	847	197	0	51	4	0	3	2	4	0	0	3	**1,117**
4:00 PM	9	862	218	0	37	12	0	2	2	4	0	0	2	**1,148**
5:00 PM	13	966	214	0	30	7	0	1	2	6	0	0	8	**1,247**
6:00 PM	5	885	167	0	27	5	0	0	0	3	0	0	0	**1,092**
7:00 PM	4	687	136	0	15	7	0	0	1	2	0	0	0	**852**
8:00 PM	2	533	106	0	11	5	0	0	1	2	0	0	1	**661**
9:00 PM	4	448	69	0	17	4	0	1	0	1	0	0	0	**544**
10:00 PM	2	297	55	0	11	2	0	0	0	0	0	0	0	**367**
11:00 PM	1	173	20	0	5	1	0	0	0	0	0	0	0	**200**
Total	**89**	**11,349**	**2,923**	**10**	**722**	**131**	**0**	**27**	**46**	**67**	**2**	**3**	**49**	**15,418**
Percent	**0.6%**	**73.6%**	**19.0%**	**0.1%**	**4.7%**	**0.8%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.3%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	35	2	0	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	30	4	0	3	1	0	0	0	0	0	0	0	**38**
2:00 AM	0	15	1	0	1	0	0	0	0	0	0	0	0	**17**
3:00 AM	1	16	4	0	1	1	0	0	0	0	0	0	0	**23**
4:00 AM	0	58	16	0	8	1	0	0	1	0	0	0	0	**84**
5:00 AM	4	192	64	0	14	3	0	0	1	0	0	0	0	**278**
6:00 AM	9	569	162	0	37	6	0	2	4	3	0	0	2	**794**
7:00 AM	7	932	269	0	42	8	0	6	1	7	0	0	3	**1,275**
8:00 AM	8	1,014	279	0	35	15	0	4	7	6	0	0	3	**1,371**
9:00 AM	7	939	249	0	53	11	0	1	2	5	0	0	1	**1,268**
10:00 AM	2	759	314	0	51	6	0	3	2	0	1	0	2	**1,140**
11:00 AM	1	791	238	0	52	10	0	1	3	3	1	0	0	**1,100**
12:00 PM	7	807	219	1	47	7	0	3	3	4	0	0	1	**1,099**
1:00 PM	7	759	275	0	60	8	0	5	6	3	1	0	1	**1,125**
2:00 PM	4	823	233	0	49	10	0	2	8	3	0	0	2	**1,134**
3:00 PM	2	771	274	2	52	8	0	3	6	4	2	1	4	**1,129**
4:00 PM	8	775	268	2	43	5	0	5	3	4	0	0	3	**1,116**
5:00 PM	2	799	190	2	44	8	0	3	3	5	0	0	1	**1,057**
6:00 PM	8	693	190	3	23	7	0	1	3	4	0	1	0	**933**
7:00 PM	2	515	123	2	20	4	0	2	3	4	0	0	3	**678**
8:00 PM	2	417	89	0	15	2	0	0	0	4	0	0	0	**529**
9:00 PM	2	357	66	0	8	0	0	0	0	0	0	0	1	**434**
10:00 PM	1	210	32	0	6	1	0	0	1	1	0	0	0	**252**
11:00 PM	0	102	14	0	1	0	0	0	0	0	0	0	0	**117**
Total	**84**	**12,378**	**3,575**	**12**	**666**	**122**	**0**	**41**	**57**	**60**	**5**	**2**	**27**	**17,029**
Percent	**0.5%**	**72.7%**	**21.0%**	**0.1%**	**3.9%**	**0.7%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.2%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	71	9	0	0	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	31	4	0	2	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
3:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	32	10	1	4	1	0	0	2	0	0	0	0	**50**
5:00 AM	1	109	43	2	19	1	0	0	2	1	0	0	2	**180**
6:00 AM	2	240	86	4	29	12	0	2	3	1	0	0	5	**384**
7:00 AM	5	450	190	0	73	9	0	1	8	12	0	0	8	**756**
8:00 AM	6	614	237	1	68	20	0	4	6	5	0	0	8	**969**
9:00 AM	8	532	196	0	48	10	0	3	8	8	1	0	5	**819**
10:00 AM	4	609	188	0	60	11	0	2	3	5	0	1	2	**885**
11:00 AM	4	690	191	0	45	4	0	0	2	1	0	0	3	**940**
12:00 PM	1	751	185	0	52	9	0	5	1	3	1	0	1	**1,009**
1:00 PM	5	695	210	0	64	4	0	2	0	2	0	2	0	**984**
2:00 PM	7	792	185	2	53	3	0	1	3	7	0	0	1	**1,054**
3:00 PM	6	847	197	0	51	4	0	3	2	4	0	0	3	**1,117**
4:00 PM	9	862	218	0	37	12	0	2	2	4	0	0	2	**1,148**
5:00 PM	13	966	214	0	30	7	0	1	2	6	0	0	8	**1,247**
6:00 PM	5	885	167	0	27	5	0	0	0	3	0	0	0	**1,092**
7:00 PM	4	687	136	0	15	7	0	0	1	2	0	0	0	**852**
8:00 PM	2	533	106	0	11	5	0	0	1	2	0	0	1	**661**
9:00 PM	4	448	69	0	17	4	0	1	0	1	0	0	0	**544**
10:00 PM	2	297	55	0	11	2	0	0	0	0	0	0	0	**367**
11:00 PM	1	173	20	0	5	1	0	0	0	0	0	0	0	**200**
Total	**89**	**11,349**	**2,923**	**10**	**722**	**131**	**0**	**27**	**46**	**67**	**2**	**3**	**49**	**15,418**
Percent	**0.6%**	**73.6%**	**19.0%**	**0.1%**	**4.7%**	**0.8%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.3%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	35	2	0	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	30	4	0	3	1	0	0	0	0	0	0	0	**38**
2:00 AM	0	15	1	0	1	0	0	0	0	0	0	0	0	**17**
3:00 AM	1	16	4	0	1	1	0	0	0	0	0	0	0	**23**
4:00 AM	0	58	16	0	8	1	0	0	1	0	0	0	0	**84**
5:00 AM	4	192	64	0	14	3	0	0	1	0	0	0	0	**278**
6:00 AM	9	569	162	0	37	6	0	2	4	3	0	0	2	**794**
7:00 AM	7	932	269	0	42	8	0	6	1	7	0	0	3	**1,275**
8:00 AM	8	1,014	279	0	35	15	0	4	7	6	0	0	3	**1,371**
9:00 AM	7	939	249	0	53	11	0	1	2	5	0	0	1	**1,268**
10:00 AM	2	759	314	0	51	6	0	3	2	0	1	0	2	**1,140**
11:00 AM	1	791	238	0	52	10	0	1	3	3	1	0	0	**1,100**
12:00 PM	7	807	219	1	47	7	0	3	3	4	0	0	1	**1,099**
1:00 PM	7	759	275	0	60	8	0	5	6	3	1	0	1	**1,125**
2:00 PM	4	823	233	0	49	10	0	2	8	3	0	0	2	**1,134**
3:00 PM	2	771	274	2	52	8	0	3	6	4	2	1	4	**1,129**
4:00 PM	8	775	268	2	43	5	0	5	3	4	0	0	3	**1,116**
5:00 PM	2	799	190	2	44	8	0	3	3	5	0	0	1	**1,057**
6:00 PM	8	693	190	3	23	7	0	1	3	4	0	1	0	**933**
7:00 PM	2	515	123	2	20	4	0	2	3	4	0	0	3	**678**
8:00 PM	2	417	89	0	15	2	0	0	0	4	0	0	0	**529**
9:00 PM	2	357	66	0	8	0	0	0	0	0	0	0	1	**434**
10:00 PM	1	210	32	0	6	1	0	0	1	1	0	0	0	**252**
11:00 PM	0	102	14	0	1	0	0	0	0	0	0	0	0	**117**
Total	**84**	**12,378**	**3,575**	**12**	**666**	**122**	**0**	**41**	**57**	**60**	**5**	**2**	**27**	**17,029**
Percent	**0.5%**	**72.7%**	**21.0%**	**0.1%**	**3.9%**	**0.7%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.2%**	

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	71	9	0	0	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	31	4	0	2	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
3:00 AM	0	17	5	0	1	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	32	10	1	4	1	0	0	2	0	0	0	0	**50**
5:00 AM	1	109	43	2	19	1	0	0	2	1	0	0	2	**180**
6:00 AM	2	240	86	4	29	12	0	2	3	1	0	0	5	**384**
7:00 AM	5	450	190	0	73	9	0	1	8	12	0	0	8	**756**
8:00 AM	6	614	237	1	68	20	0	4	6	5	0	0	8	**969**
9:00 AM	8	532	196	0	48	10	0	3	8	8	1	0	5	**819**
10:00 AM	4	609	188	0	60	11	0	2	3	5	0	1	2	**885**
11:00 AM	4	690	191	0	45	4	0	0	2	1	0	0	3	**940**
12:00 PM	1	751	185	0	52	9	0	5	1	3	1	0	1	**1,009**
1:00 PM	5	695	210	0	64	4	0	2	0	2	0	2	0	**984**
2:00 PM	7	792	185	2	53	3	0	1	3	7	0	0	1	**1,054**
3:00 PM	6	847	197	0	51	4	0	3	2	4	0	0	3	**1,117**
4:00 PM	9	862	218	0	37	12	0	2	2	4	0	0	2	**1,148**
5:00 PM	13	966	214	0	30	7	0	1	2	6	0	0	8	**1,247**
6:00 PM	5	885	167	0	27	5	0	0	0	3	0	0	0	**1,092**
7:00 PM	4	687	136	0	15	7	0	0	1	2	0	0	0	**852**
8:00 PM	2	533	106	0	11	5	0	0	1	2	0	0	1	**661**
9:00 PM	4	448	69	0	17	4	0	1	0	1	0	0	0	**544**
10:00 PM	2	297	55	0	11	2	0	0	0	0	0	0	0	**367**
11:00 PM	1	173	20	0	5	1	0	0	0	0	0	0	0	**200**
Total	**89**	**11,349**	**2,923**	**10**	**722**	**131**	**0**	**27**	**46**	**67**	**2**	**3**	**49**	**15,418**
Percent	**0.6%**	**73.6%**	**19.0%**	**0.1%**	**4.7%**	**0.8%**	**0.0%**	**0.2%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.3%**	

Vehicle Speed Report Summary

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 01

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	120	488	944	1,698	4,594	6,162	2,482	467	64	4	4	2	0	0	0	0	0	17,029
Percent	0.7%	2.9%	5.5%	10.0%	27.0%	36.2%	14.6%	2.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	24	87	496	1,836	5,177	5,007	2,206	485	83	16	1	0	0	0	0	0	0	15,418
Percent	0.2%	0.6%	3.2%	11.9%	33.6%	32.5%	14.3%	3.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	144	575	1,440	3,534	9,771	11,169	4,688	952	147	20	5	2	0	0	0	0	0	32,447
Percent	0.4%	1.8%	4.4%	10.9%	30.1%	34.4%	14.4%	2.9%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	30.5	mph	Mean (Average) Speed	29.6	mph
85th Percentile	35.6	mph	10 mph Pace	25.9 - 35.9	mph
95th Percentile	38.8	mph	Percent in Pace	64.3	%
Westbound			**Westbound**		
50th Percentile (Median)	30.1	mph	Mean (Average) Speed	30.1	mph
85th Percentile	35.7	mph	10 mph Pace	24.9 - 34.9	mph
95th Percentile	39.3	mph	Percent in Pace	65.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Wednesday, May 8, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	6	13	13	2	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	0	1	2	4	11	16	4	0	0	0	0	0	0	0	0	0	**38**
2:00 AM	0	0	0	0	1	11	4	1	0	0	0	0	0	0	0	0	0	**17**
3:00 AM	0	1	0	0	3	7	6	3	1	0	2	0	0	0	0	0	0	**23**
4:00 AM	0	0	0	0	7	28	34	13	2	0	0	0	0	0	0	0	0	**84**
5:00 AM	0	0	0	2	22	95	115	37	6	0	0	1	0	0	0	0	0	**278**
6:00 AM	6	20	31	67	152	283	186	43	6	0	0	0	0	0	0	0	0	**794**
7:00 AM	12	65	112	196	312	400	141	29	4	3	0	1	0	0	0	0	0	**1,275**
8:00 AM	13	54	114	148	397	488	137	20	0	0	0	0	0	0	0	0	0	**1,371**
9:00 AM	21	38	94	162	330	471	140	12	0	0	0	0	0	0	0	0	0	**1,268**
10:00 AM	12	54	62	108	343	382	152	23	4	0	0	0	0	0	0	0	0	**1,140**
11:00 AM	3	18	60	87	340	444	125	23	0	0	0	0	0	0	0	0	0	**1,100**
12:00 PM	7	37	63	98	312	398	158	24	2	0	0	0	0	0	0	0	0	**1,099**
1:00 PM	8	26	55	130	346	384	150	23	3	0	0	0	0	0	0	0	0	**1,125**
2:00 PM	12	48	74	136	302	415	122	20	5	0	0	0	0	0	0	0	0	**1,134**
3:00 PM	5	35	84	114	361	376	130	21	3	0	0	0	0	0	0	0	0	**1,129**
4:00 PM	1	42	62	123	318	403	138	26	3	0	0	0	0	0	0	0	0	**1,116**
5:00 PM	12	32	80	138	318	327	125	21	4	0	0	0	0	0	0	0	0	**1,057**
6:00 PM	8	15	34	99	279	357	112	25	4	0	0	0	0	0	0	0	0	**933**
7:00 PM	0	2	10	37	166	262	161	36	4	0	0	0	0	0	0	0	0	**678**
8:00 PM	0	0	1	23	117	246	113	23	3	1	2	0	0	0	0	0	0	**529**
9:00 PM	0	0	5	13	103	193	98	19	3	0	0	0	0	0	0	0	0	**434**
10:00 PM	0	1	2	8	40	124	66	7	4	0	0	0	0	0	0	0	0	**252**
11:00 PM	0	0	0	4	15	44	40	12	2	0	0	0	0	0	0	0	0	**117**
Total	**120**	**488**	**944**	**1,698**	**4,594**	**6,162**	**2,482**	**467**	**64**	**4**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**17,029**
Percent	**0.7%**	**2.9%**	**5.5%**	**10.0%**	**27.0%**	**36.2%**	**14.6%**	**2.7%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	30.5	mph	Mean (Average) Speed	29.6	mph
85th Percentile	35.6	mph	10 mph Pace	25.9 - 35.9	mph
95th Percentile	38.8	mph	Percent in Pace	64.3	%

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Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Wednesday, May 8, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	15	30	28	4	1	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	0	0	1	5	14	15	2	0	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	0	0	0	5	8	6	0	0	1	0	0	0	0	0	0	0	**20**
3:00 AM	0	0	0	0	1	9	9	4	0	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	0	0	3	7	17	14	7	2	0	0	0	0	0	0	0	0	**50**
5:00 AM	0	1	0	5	23	51	60	31	8	1	0	0	0	0	0	0	0	**180**
6:00 AM	1	2	2	14	62	156	94	41	10	2	0	0	0	0	0	0	0	**384**
7:00 AM	1	2	15	60	218	285	140	29	5	1	0	0	0	0	0	0	0	**756**
8:00 AM	2	3	14	85	395	320	129	15	3	3	0	0	0	0	0	0	0	**969**
9:00 AM	0	4	32	93	298	291	85	12	3	1	0	0	0	0	0	0	0	**819**
10:00 AM	0	5	16	59	307	310	141	44	1	2	0	0	0	0	0	0	0	**885**
11:00 AM	0	6	19	161	325	287	112	29	1	0	0	0	0	0	0	0	0	**940**
12:00 PM	1	0	14	136	375	326	117	33	7	0	0	0	0	0	0	0	0	**1,009**
1:00 PM	0	0	20	98	343	336	153	29	4	1	0	0	0	0	0	0	0	**984**
2:00 PM	1	9	30	153	403	340	104	13	1	0	0	0	0	0	0	0	0	**1,054**
3:00 PM	6	20	81	161	367	334	127	18	2	1	0	0	0	0	0	0	0	**1,117**
4:00 PM	2	9	65	201	416	341	98	13	3	0	0	0	0	0	0	0	0	**1,148**
5:00 PM	4	10	102	311	480	250	72	14	3	1	0	0	0	0	0	0	0	**1,247**
6:00 PM	3	12	45	100	376	371	152	30	3	0	0	0	0	0	0	0	0	**1,092**
7:00 PM	3	3	21	105	311	249	131	21	8	0	0	0	0	0	0	0	0	**852**
8:00 PM	0	0	16	51	209	247	115	19	4	0	0	0	0	0	0	0	0	**661**
9:00 PM	0	0	1	29	159	209	116	23	7	0	0	0	0	0	0	0	0	**544**
10:00 PM	0	0	2	8	51	152	117	31	5	0	1	0	0	0	0	0	0	**367**
11:00 PM	0	0	1	1	26	74	71	23	2	2	0	0	0	0	0	0	0	**200**
Total	**24**	**87**	**496**	**1,836**	**5,177**	**5,007**	**2,206**	**485**	**83**	**16**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**15,418**
Percent	**0.2%**	**0.6%**	**3.2%**	**11.9%**	**33.6%**	**32.5%**	**14.3%**	**3.1%**	**0.5%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	30.1	mph	Mean (Average) Speed	30.1	mph
85th Percentile	35.7	mph	10 mph Pace	24.9 - 34.9	mph
95th Percentile	39.3	mph	Percent in Pace	65.81	%

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Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	6	13	13	2	1	0	0	0	0	0	0	0	0	**38**
1:00 AM	0	0	1	2	4	11	16	4	0	0	0	0	0	0	0	0	0	**38**
2:00 AM	0	0	0	0	1	11	4	1	0	0	0	0	0	0	0	0	0	**17**
3:00 AM	0	1	0	0	3	7	6	3	1	0	2	0	0	0	0	0	0	**23**
4:00 AM	0	0	0	0	7	28	34	13	2	0	0	0	0	0	0	0	0	**84**
5:00 AM	0	0	0	2	22	95	115	37	6	0	0	1	0	0	0	0	0	**278**
6:00 AM	6	20	31	67	152	283	186	43	6	0	0	0	0	0	0	0	0	**794**
7:00 AM	12	65	112	196	312	400	141	29	4	3	0	1	0	0	0	0	0	**1,275**
8:00 AM	13	54	114	148	397	488	137	20	0	0	0	0	0	0	0	0	0	**1,371**
9:00 AM	21	38	94	162	330	471	140	12	0	0	0	0	0	0	0	0	0	**1,268**
10:00 AM	12	54	62	108	343	382	152	23	4	0	0	0	0	0	0	0	0	**1,140**
11:00 AM	3	18	60	87	340	444	125	23	0	0	0	0	0	0	0	0	0	**1,100**
12:00 PM	7	37	63	98	312	398	158	24	2	0	0	0	0	0	0	0	0	**1,099**
1:00 PM	8	26	55	130	346	384	150	23	3	0	0	0	0	0	0	0	0	**1,125**
2:00 PM	12	48	74	136	302	415	122	20	5	0	0	0	0	0	0	0	0	**1,134**
3:00 PM	5	35	84	114	361	376	130	21	3	0	0	0	0	0	0	0	0	**1,129**
4:00 PM	1	42	62	123	318	403	138	26	3	0	0	0	0	0	0	0	0	**1,116**
5:00 PM	12	32	80	138	318	327	125	21	4	0	0	0	0	0	0	0	0	**1,057**
6:00 PM	8	15	34	99	279	357	112	25	4	0	0	0	0	0	0	0	0	**933**
7:00 PM	0	2	10	37	166	262	161	36	4	0	0	0	0	0	0	0	0	**678**
8:00 PM	0	0	1	23	117	246	113	23	3	1	2	0	0	0	0	0	0	**529**
9:00 PM	0	0	5	13	103	193	98	19	3	0	0	0	0	0	0	0	0	**434**
10:00 PM	0	1	2	8	40	124	66	7	4	0	0	0	0	0	0	0	0	**252**
11:00 PM	0	0	0	4	15	44	40	12	2	0	0	0	0	0	0	0	0	**117**
Total	**120**	**488**	**944**	**1,698**	**4,594**	**6,162**	**2,482**	**467**	**64**	**4**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**17,029**
Percent	**0.7%**	**2.9%**	**5.5%**	**10.0%**	**27.0%**	**36.2%**	**14.6%**	**2.7%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	30.5	mph	Mean (Average) Speed	29.6	mph
85th Percentile	35.6	mph	10 mph Pace	25.9 - 35.9	mph
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Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 01

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	15	30	28	4	1	0	0	0	0	0	0	0	0	**80**
1:00 AM	0	0	0	1	5	14	15	2	0	0	0	0	0	0	0	0	0	**37**
2:00 AM	0	0	0	0	5	8	6	0	0	1	0	0	0	0	0	0	0	**20**
3:00 AM	0	0	0	0	1	9	9	4	0	0	0	0	0	0	0	0	0	**23**
4:00 AM	0	0	0	3	7	17	14	7	2	0	0	0	0	0	0	0	0	**50**
5:00 AM	0	1	0	5	23	51	60	31	8	1	0	0	0	0	0	0	0	**180**
6:00 AM	1	2	2	14	62	156	94	41	10	2	0	0	0	0	0	0	0	**384**
7:00 AM	1	2	15	60	218	285	140	29	5	1	0	0	0	0	0	0	0	**756**
8:00 AM	2	3	14	85	395	320	129	15	3	3	0	0	0	0	0	0	0	**969**
9:00 AM	0	4	32	93	298	291	85	12	3	1	0	0	0	0	0	0	0	**819**
10:00 AM	0	5	16	59	307	310	141	44	1	2	0	0	0	0	0	0	0	**885**
11:00 AM	0	6	19	161	325	287	112	29	1	0	0	0	0	0	0	0	0	**940**
12:00 PM	1	0	14	136	375	326	117	33	7	0	0	0	0	0	0	0	0	**1,009**
1:00 PM	0	0	20	98	343	336	153	29	4	1	0	0	0	0	0	0	0	**984**
2:00 PM	1	9	30	153	403	340	104	13	1	0	0	0	0	0	0	0	0	**1,054**
3:00 PM	6	20	81	161	367	334	127	18	2	1	0	0	0	0	0	0	0	**1,117**
4:00 PM	2	9	65	201	416	341	98	13	3	0	0	0	0	0	0	0	0	**1,148**
5:00 PM	4	10	102	311	480	250	72	14	3	1	0	0	0	0	0	0	0	**1,247**
6:00 PM	3	12	45	100	376	371	152	30	3	0	0	0	0	0	0	0	0	**1,092**
7:00 PM	3	3	21	105	311	249	131	21	8	0	0	0	0	0	0	0	0	**852**
8:00 PM	0	0	16	51	209	247	115	19	4	0	0	0	0	0	0	0	0	**661**
9:00 PM	0	0	1	29	159	209	116	23	7	0	0	0	0	0	0	0	0	**544**
10:00 PM	0	0	2	8	51	152	117	31	5	0	1	0	0	0	0	0	0	**367**
11:00 PM	0	0	1	1	26	74	71	23	2	2	0	0	0	0	0	0	0	**200**
Total	**24**	**87**	**496**	**1,836**	**5,177**	**5,007**	**2,206**	**485**	**83**	**16**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**15,418**
Percent	**0.2%**	**0.6%**	**3.2%**	**11.9%**	**33.6%**	**32.5%**	**14.3%**	**3.1%**	**0.5%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	30.1	mph	Mean (Average) Speed	30.1	mph
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Location: 2nd St, B/W 2nd-4th-Marquard & Hayes St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 01

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	38	80	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	80	118
1:00 AM	38	37	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	37	75
2:00 AM	17	20	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	20	37
3:00 AM	23	23	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	23	46
4:00 AM	84	50	134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	50	134
5:00 AM	278	180	458	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	278	180	458
6:00 AM	794	384	1,178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	794	384	1,178
7:00 AM	1,275	756	2,031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,275	756	2,031
8:00 AM	**1,371**	**969**	**2,340**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,371**	**969**	**2,340**
9:00 AM	1,268	819	2,087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,268	819	2,087
10:00 AM	1,140	885	2,025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,140	885	2,025
11:00 AM	1,100	940	2,040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100	940	2,040
12:00 PM	1,099	1,009	2,108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,099	1,009	2,108
1:00 PM	1,125	984	2,109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,125	984	2,109
2:00 PM	**1,134**	1,054	2,188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,134**	1,054	2,188
3:00 PM	1,129	1,117	2,246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,129	1,117	2,246
4:00 PM	1,116	1,148	2,264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,116	1,148	2,264
5:00 PM	1,057	**1,247**	**2,304**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,057	**1,247**	**2,304**
6:00 PM	933	1,092	2,025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	933	1,092	2,025
7:00 PM	678	852	1,530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	678	852	1,530
8:00 PM	529	661	1,190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	529	661	1,190
9:00 PM	434	544	978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	434	544	978
10:00 PM	252	367	619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	252	367	619
11:00 PM	117	200	317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	200	317
Total	17,029	15,418	32,447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,029	15,418	32,447
Percent	52%	48%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	1,371	969	2,340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,371	969	2,340
PM Peak	14:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:00	17:00	17:00
Vol.	1,134	1,247	2,304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,134	1,247	2,304

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 2nd St, B/W Hayes St & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 02

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	125	18,231	2,873	7	369	259	0	17	193	427	9	3	349	22,862
Percent	0.5%	79.7%	12.6%	0.0%	1.6%	1.1%	0.0%	0.1%	0.8%	1.9%	0.0%	0.0%	1.5%	100%
Westbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	125	18,231	2,873	7	369	259	0	17	193	427	9	3	349	22,862
Percent	0.5%	79.7%	12.6%	0.0%	1.6%	1.1%	0.0%	0.1%	0.8%	1.9%	0.0%	0.0%	1.5%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	59	3	0	2	0	0	0	0	0	0	0	0	**64**
1:00 AM	1	42	4	0	2	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	29	1	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	26	7	0	1	0	0	0	0	0	0	0	0	**34**
4:00 AM	1	93	17	0	8	0	0	0	1	0	0	0	0	**120**
5:00 AM	5	289	54	0	9	1	0	0	1	0	0	0	1	**360**
6:00 AM	1	757	150	0	15	12	0	2	5	20	0	0	14	**976**
7:00 AM	6	1,222	142	0	15	24	0	1	14	44	0	0	55	**1,523**
8:00 AM	3	1,232	105	0	24	26	0	0	14	43	0	0	45	**1,492**
9:00 AM	11	1,140	181	0	24	20	0	0	19	25	1	0	46	**1,467**
10:00 AM	7	1,045	219	0	29	13	0	1	14	29	0	1	26	**1,384**
11:00 AM	4	1,046	230	1	29	20	0	1	15	39	2	0	21	**1,408**
12:00 PM	10	1,118	236	1	29	13	0	2	19	33	0	0	20	**1,481**
1:00 PM	11	1,147	236	1	28	11	0	3	16	34	1	0	20	**1,508**
2:00 PM	9	1,261	209	0	33	19	0	2	14	31	1	0	14	**1,593**
3:00 PM	14	1,280	182	0	24	31	0	1	6	27	1	0	24	**1,590**
4:00 PM	13	1,293	172	0	30	14	0	1	14	32	1	1	15	**1,586**
5:00 PM	4	1,212	154	1	15	20	0	1	10	22	1	0	20	**1,460**
6:00 PM	9	1,097	204	3	17	8	0	1	15	17	0	1	12	**1,384**
7:00 PM	8	909	163	0	18	6	0	1	4	11	1	0	3	**1,124**
8:00 PM	4	732	92	0	7	6	0	0	5	13	0	0	9	**868**
9:00 PM	0	638	60	0	5	3	0	0	4	7	0	0	4	**721**
10:00 PM	3	396	42	0	2	9	0	0	1	0	0	0	0	**453**
11:00 PM	1	168	10	0	3	3	0	0	2	0	0	0	0	**187**
Total	**125**	**18,231**	**2,873**	**7**	**369**	**259**	**0**	**17**	**193**	**427**	**9**	**3**	**349**	**22,862**
Percent	**0.5%**	**79.7%**	**12.6%**	**0.0%**	**1.6%**	**1.1%**	**0.0%**	**0.1%**	**0.8%**	**1.9%**	**0.0%**	**0.0%**	**1.5%**	

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

DATA SOLUTIONS

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	59	3	0	2	0	0	0	0	0	0	0	0	**64**
1:00 AM	1	42	4	0	2	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	29	1	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	26	7	0	1	0	0	0	0	0	0	0	0	**34**
4:00 AM	1	93	17	0	8	0	0	0	1	0	0	0	0	**120**
5:00 AM	5	289	54	0	9	1	0	0	1	0	0	0	1	**360**
6:00 AM	1	757	150	0	15	12	0	2	5	20	0	0	14	**976**
7:00 AM	6	1,222	142	0	15	24	0	1	14	44	0	0	55	**1,523**
8:00 AM	3	1,232	105	0	24	26	0	0	14	43	0	0	45	**1,492**
9:00 AM	11	1,140	181	0	24	20	0	0	19	25	1	0	46	**1,467**
10:00 AM	7	1,045	219	0	29	13	0	1	14	29	0	1	26	**1,384**
11:00 AM	4	1,046	230	1	29	20	0	1	15	39	2	0	21	**1,408**
12:00 PM	10	1,118	236	1	29	13	0	2	19	33	0	0	20	**1,481**
1:00 PM	11	1,147	236	1	28	11	0	3	16	34	1	0	20	**1,508**
2:00 PM	9	1,261	209	0	33	19	0	2	14	31	1	0	14	**1,593**
3:00 PM	14	1,280	182	0	24	31	0	1	6	27	1	0	24	**1,590**
4:00 PM	13	1,293	172	0	30	14	0	1	14	32	1	1	15	**1,586**
5:00 PM	4	1,212	154	1	15	20	0	1	10	22	1	0	20	**1,460**
6:00 PM	9	1,097	204	3	17	8	0	1	15	17	0	1	12	**1,384**
7:00 PM	8	909	163	0	18	6	0	1	4	11	1	0	3	**1,124**
8:00 PM	4	732	92	0	7	6	0	0	5	13	0	0	9	**868**
9:00 PM	0	638	60	0	5	3	0	0	4	7	0	0	4	**721**
10:00 PM	3	396	42	0	2	9	0	0	1	0	0	0	0	**453**
11:00 PM	1	168	10	0	3	3	0	0	2	0	0	0	0	**187**
Total	**125**	**18,231**	**2,873**	**7**	**369**	**259**	**0**	**17**	**193**	**427**	**9**	**3**	**349**	**22,862**
Percent	**0.5%**	**79.7%**	**12.6%**	**0.0%**	**1.6%**	**1.1%**	**0.0%**	**0.1%**	**0.8%**	**1.9%**	**0.0%**	**0.0%**	**1.5%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	59	3	0	2	0	0	0	0	0	0	0	0	**64**
1:00 AM	1	42	4	0	2	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	29	1	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	26	7	0	1	0	0	0	0	0	0	0	0	**34**
4:00 AM	1	93	17	0	8	0	0	0	1	0	0	0	0	**120**
5:00 AM	5	289	54	0	9	1	0	0	1	0	0	0	1	**360**
6:00 AM	1	757	150	0	15	12	0	2	5	20	0	0	14	**976**
7:00 AM	6	1,222	142	0	15	24	0	1	14	44	0	0	55	**1,523**
8:00 AM	3	1,232	105	0	24	26	0	0	14	43	0	0	45	**1,492**
9:00 AM	11	1,140	181	0	24	20	0	0	19	25	1	0	46	**1,467**
10:00 AM	7	1,045	219	0	29	13	0	1	14	29	0	1	26	**1,384**
11:00 AM	4	1,046	230	1	29	20	0	1	15	39	2	0	21	**1,408**
12:00 PM	10	1,118	236	1	29	13	0	2	19	33	0	0	20	**1,481**
1:00 PM	11	1,147	236	1	28	11	0	3	16	34	1	0	20	**1,508**
2:00 PM	9	1,261	209	0	33	19	0	2	14	31	1	0	14	**1,593**
3:00 PM	14	1,280	182	0	24	31	0	1	6	27	1	0	24	**1,590**
4:00 PM	13	1,293	172	0	30	14	0	1	14	32	1	1	15	**1,586**
5:00 PM	4	1,212	154	1	15	20	0	1	10	22	1	0	20	**1,460**
6:00 PM	9	1,097	204	3	17	8	0	1	15	17	0	1	12	**1,384**
7:00 PM	8	909	163	0	18	6	0	1	4	11	1	0	3	**1,124**
8:00 PM	4	732	92	0	7	6	0	0	5	13	0	0	9	**868**
9:00 PM	0	638	60	0	5	3	0	0	4	7	0	0	4	**721**
10:00 PM	3	396	42	0	2	9	0	0	1	0	0	0	0	**453**
11:00 PM	1	168	10	0	3	3	0	0	2	0	0	0	0	**187**
Total	**125**	**18,231**	**2,873**	**7**	**369**	**259**	**0**	**17**	**193**	**427**	**9**	**3**	**349**	**22,862**
Percent	**0.5%**	**79.7%**	**12.6%**	**0.0%**	**1.6%**	**1.1%**	**0.0%**	**0.1%**	**0.8%**	**1.9%**	**0.0%**	**0.0%**	**1.5%**	

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Vehicle Speed Report Summary

Location: 2nd St, B/W Hayes St & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 02

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	436	1,156	2,244	8,243	8,066	2,310	359	42	6	0	0	0	0	0	0	0	0	22,862
Percent	1.9%	5.1%	9.8%	36.1%	35.3%	10.1%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	436	1,156	2,244	8,243	8,066	2,310	359	42	6	0	0	0	0	0	0	0	0	22,862
Percent	1.9%	5.1%	9.8%	36.1%	35.3%	10.1%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Eastbound		
50th Percentile (Median)	24.7	mph
85th Percentile	29.4	mph
95th Percentile	32.4	mph
Westbound		
50th Percentile (Median)	0.0	mph
85th Percentile	0.0	mph
95th Percentile	0.0	mph

Total Study Speed Statistics		
Eastbound		
Mean (Average) Speed	24.3	mph
10 mph Pace	20.0 - 30.0	mph
Percent in Pace	71.1	%
Westbound		
Mean (Average) Speed	0.0	mph
10 mph Pace	.0 - 10.0	mph
Percent in Pace	0.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Wednesday, May 8, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	10	25	21	3	5	0	0	0	0	0	0	0	0	0	**64**
1:00 AM	0	1	1	10	24	13	0	0	0	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	0	0	4	15	7	3	1	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	0	3	4	11	10	3	1	2	0	0	0	0	0	0	0	0	**34**
4:00 AM	0	2	2	6	32	59	16	3	0	0	0	0	0	0	0	0	0	**120**
5:00 AM	0	0	2	16	115	162	57	6	2	0	0	0	0	0	0	0	0	**360**
6:00 AM	1	0	1	82	500	332	55	5	0	0	0	0	0	0	0	0	0	**976**
7:00 AM	30	71	113	522	635	124	25	3	0	0	0	0	0	0	0	0	0	**1,523**
8:00 AM	70	212	238	461	435	71	5	0	0	0	0	0	0	0	0	0	0	**1,492**
9:00 AM	0	7	102	682	547	112	14	3	0	0	0	0	0	0	0	0	0	**1,467**
10:00 AM	0	5	124	710	484	47	12	2	0	0	0	0	0	0	0	0	0	**1,384**
11:00 AM	0	4	69	642	579	101	11	2	0	0	0	0	0	0	0	0	0	**1,408**
12:00 PM	2	5	68	719	572	106	8	1	0	0	0	0	0	0	0	0	0	**1,481**
1:00 PM	1	3	84	704	581	116	16	2	1	0	0	0	0	0	0	0	0	**1,508**
2:00 PM	47	85	270	735	390	60	6	0	0	0	0	0	0	0	0	0	0	**1,593**
3:00 PM	78	279	472	535	194	30	2	0	0	0	0	0	0	0	0	0	0	**1,590**
4:00 PM	98	241	336	596	286	25	4	0	0	0	0	0	0	0	0	0	0	**1,586**
5:00 PM	102	229	244	451	341	85	8	0	0	0	0	0	0	0	0	0	0	**1,460**
6:00 PM	1	6	43	464	631	215	23	1	0	0	0	0	0	0	0	0	0	**1,384**
7:00 PM	0	2	25	271	581	221	23	1	0	0	0	0	0	0	0	0	0	**1,124**
8:00 PM	3	2	27	302	419	99	13	3	0	0	0	0	0	0	0	0	0	**868**
9:00 PM	1	0	12	192	347	145	22	1	1	0	0	0	0	0	0	0	0	**721**
10:00 PM	1	0	6	96	232	103	15	0	0	0	0	0	0	0	0	0	0	**453**
11:00 PM	1	2	2	29	90	46	15	2	0	0	0	0	0	0	0	0	0	**187**
Total	**436**	**1,156**	**2,244**	**8,243**	**8,066**	**2,310**	**359**	**42**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22,862**
Percent	**1.9%**	**5.1%**	**9.8%**	**36.1%**	**35.3%**	**10.1%**	**1.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	24.7	mph	Mean (Average) Speed	24.3	mph
85th Percentile	29.4	mph	10 mph Pace	20.0 - 30.0	mph
95th Percentile	32.4	mph	Percent in Pace	71.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

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Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	10	25	21	3	5	0	0	0	0	0	0	0	0	0	**64**
1:00 AM	0	1	1	10	24	13	0	0	0	0	0	0	0	0	0	0	0	**49**
2:00 AM	0	0	0	4	15	7	3	1	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	0	3	4	11	10	3	1	2	0	0	0	0	0	0	0	0	**34**
4:00 AM	0	2	2	6	32	59	16	3	0	0	0	0	0	0	0	0	0	**120**
5:00 AM	0	0	2	16	115	162	57	6	2	0	0	0	0	0	0	0	0	**360**
6:00 AM	1	0	1	82	500	332	55	5	0	0	0	0	0	0	0	0	0	**976**
7:00 AM	30	71	113	522	635	124	25	3	0	0	0	0	0	0	0	0	0	**1,523**
8:00 AM	70	212	238	461	435	71	5	0	0	0	0	0	0	0	0	0	0	**1,492**
9:00 AM	0	7	102	682	547	112	14	3	0	0	0	0	0	0	0	0	0	**1,467**
10:00 AM	0	5	124	710	484	47	12	2	0	0	0	0	0	0	0	0	0	**1,384**
11:00 AM	0	4	69	642	579	101	11	2	0	0	0	0	0	0	0	0	0	**1,408**
12:00 PM	2	5	68	719	572	106	8	1	0	0	0	0	0	0	0	0	0	**1,481**
1:00 PM	1	3	84	704	581	116	16	2	1	0	0	0	0	0	0	0	0	**1,508**
2:00 PM	47	85	270	735	390	60	6	0	0	0	0	0	0	0	0	0	0	**1,593**
3:00 PM	78	279	472	535	194	30	2	0	0	0	0	0	0	0	0	0	0	**1,590**
4:00 PM	98	241	336	596	286	25	4	0	0	0	0	0	0	0	0	0	0	**1,586**
5:00 PM	102	229	244	451	341	85	8	0	0	0	0	0	0	0	0	0	0	**1,460**
6:00 PM	1	6	43	464	631	215	23	1	0	0	0	0	0	0	0	0	0	**1,384**
7:00 PM	0	2	25	271	581	221	23	1	0	0	0	0	0	0	0	0	0	**1,124**
8:00 PM	3	2	27	302	419	99	13	3	0	0	0	0	0	0	0	0	0	**868**
9:00 PM	1	0	12	192	347	145	22	1	1	0	0	0	0	0	0	0	0	**721**
10:00 PM	1	0	6	96	232	103	15	0	0	0	0	0	0	0	0	0	0	**453**
11:00 PM	1	2	2	29	90	46	15	2	0	0	0	0	0	0	0	0	0	**187**
Total	**436**	**1,156**	**2,244**	**8,243**	**8,066**	**2,310**	**359**	**42**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22,862**
Percent	**1.9%**	**5.1%**	**9.8%**	**36.1%**	**35.3%**	**10.1%**	**1.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	24.7	mph	Mean (Average) Speed	24.3	mph
85th Percentile	29.4	mph	10 mph Pace	20.0 - 30.0	mph
95th Percentile	32.4	mph	Percent in Pace	71.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 02

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 2nd St, B/W Hayes St & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 02

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	64	0	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	0	64
1:00 AM	49	0	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	0	49
2:00 AM	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	0	30
3:00 AM	34	0	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	0	34
4:00 AM	120	0	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	0	120
5:00 AM	360	0	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	360	0	360
6:00 AM	976	0	976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	976	0	976
7:00 AM	**1,523**	0	**1,523**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,523**	0	**1,523**
8:00 AM	1,492	0	1,492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,492	0	1,492
9:00 AM	1,467	0	1,467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,467	0	1,467
10:00 AM	1,384	0	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,384	0	1,384
11:00 AM	1,408	0	1,408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,408	0	1,408
12:00 PM	1,481	0	1,481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,481	0	1,481
1:00 PM	1,508	0	1,508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,508	0	1,508
2:00 PM	**1,593**	0	**1,593**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,593**	0	**1,593**
3:00 PM	1,590	0	1,590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,590	0	1,590
4:00 PM	1,586	0	1,586	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,586	0	1,586
5:00 PM	1,460	0	1,460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,460	0	1,460
6:00 PM	1,384	0	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,384	0	1,384
7:00 PM	1,124	0	1,124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,124	0	1,124
8:00 PM	868	0	868	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	868	0	868
9:00 PM	721	0	721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	721	0	721
10:00 PM	453	0	453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	453	0	453
11:00 PM	187	0	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	187	0	187
Total	22,862	-	22,862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,862	-	22,862
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	07:00	-	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	-	07:00
Vol.	1,523	-	1,523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,523	-	1,523
PM Peak	14:00	-	14:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:00	-	14:00
Vol.	1,593	-	1,593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,593	-	1,593

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 3rd St, B/W Shaver St & Union St

Count Direction: Westbound / Eastbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 03

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Westbound	114	15,493	3,510	6	817	116	0	27	117	158	6	3	89	20,456
Percent	0.6%	75.7%	17.2%	0.0%	4.0%	0.6%	0.0%	0.1%	0.6%	0.8%	0.0%	0.0%	0.4%	100%
Eastbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	114	15,493	3,510	6	817	116	0	27	117	158	6	3	89	20,456
Percent	0.6%	75.7%	17.2%	0.0%	4.0%	0.6%	0.0%	0.1%	0.6%	0.8%	0.0%	0.0%	0.4%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

DATA SOLUTIONS

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	103	19	0	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	0	45	5	0	2	1	0	0	0	0	0	0	0	**53**
2:00 AM	1	25	4	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	34	9	0	2	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	43	13	2	5	4	0	0	2	0	0	0	0	**69**
5:00 AM	3	144	55	0	19	2	0	2	2	0	0	0	0	**227**
6:00 AM	7	376	115	0	44	4	0	2	3	4	0	0	1	**556**
7:00 AM	5	658	232	2	78	7	0	1	6	7	1	1	7	**1,005**
8:00 AM	1	827	248	0	55	8	0	2	8	17	1	0	18	**1,185**
9:00 AM	7	889	235	0	65	5	0	3	6	10	0	1	7	**1,228**
10:00 AM	3	967	232	0	74	9	0	1	2	9	0	0	6	**1,303**
11:00 AM	7	1,004	209	1	68	9	0	4	8	10	2	1	2	**1,325**
12:00 PM	5	1,042	234	0	68	10	0	1	5	8	0	0	2	**1,375**
1:00 PM	6	1,014	273	0	54	7	0	2	3	14	0	0	2	**1,375**
2:00 PM	8	1,146	207	0	51	11	0	3	10	8	1	0	4	**1,449**
3:00 PM	8	1,046	251	1	48	6	0	1	9	8	0	0	6	**1,384**
4:00 PM	8	1,030	226	0	42	6	0	1	11	12	0	0	10	**1,346**
5:00 PM	13	1,214	204	0	37	9	0	0	15	13	0	0	10	**1,515**
6:00 PM	4	1,156	207	0	22	7	0	1	11	14	1	0	9	**1,432**
7:00 PM	14	902	182	0	25	4	0	1	3	10	0	0	1	**1,142**
8:00 PM	5	645	135	0	16	5	0	1	5	7	0	0	3	**822**
9:00 PM	2	556	100	0	21	1	0	1	2	3	0	0	0	**686**
10:00 PM	4	386	76	0	14	0	0	0	4	2	0	0	1	**487**
11:00 PM	1	241	39	0	7	1	0	0	2	2	0	0	0	**293**
Total	**114**	**15,493**	**3,510**	**6**	**817**	**116**	**0**	**27**	**117**	**158**	**6**	**3**	**89**	**20,456**
Percent	**0.6%**	**75.7%**	**17.2%**	**0.0%**	**4.0%**	**0.6%**	**0.0%**	**0.1%**	**0.6%**	**0.8%**	**0.0%**	**0.0%**	**0.4%**	

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	103	19	0	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	0	45	5	0	2	1	0	0	0	0	0	0	0	**53**
2:00 AM	1	25	4	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	34	9	0	2	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	43	13	2	5	4	0	0	2	0	0	0	0	**69**
5:00 AM	3	144	55	0	19	2	0	2	2	0	0	0	0	**227**
6:00 AM	7	376	115	0	44	4	0	2	3	4	0	0	1	**556**
7:00 AM	5	658	232	2	78	7	0	1	6	7	1	1	7	**1,005**
8:00 AM	1	827	248	0	55	8	0	2	8	17	1	0	18	**1,185**
9:00 AM	7	889	235	0	65	5	0	3	6	10	0	1	7	**1,228**
10:00 AM	3	967	232	0	74	9	0	1	2	9	0	0	6	**1,303**
11:00 AM	7	1,004	209	1	68	9	0	4	8	10	2	1	2	**1,325**
12:00 PM	5	1,042	234	0	68	10	0	1	5	8	0	0	2	**1,375**
1:00 PM	6	1,014	273	0	54	7	0	2	3	14	0	0	2	**1,375**
2:00 PM	8	1,146	207	0	51	11	0	3	10	8	1	0	4	**1,449**
3:00 PM	8	1,046	251	1	48	6	0	1	9	8	0	0	6	**1,384**
4:00 PM	8	1,030	226	0	42	6	0	1	11	12	0	0	10	**1,346**
5:00 PM	13	1,214	204	0	37	9	0	0	15	13	0	0	10	**1,515**
6:00 PM	4	1,156	207	0	22	7	0	1	11	14	1	0	9	**1,432**
7:00 PM	14	902	182	0	25	4	0	1	3	10	0	0	1	**1,142**
8:00 PM	5	645	135	0	16	5	0	1	5	7	0	0	3	**822**
9:00 PM	2	556	100	0	21	1	0	1	2	3	0	0	0	**686**
10:00 PM	4	386	76	0	14	0	0	0	4	2	0	0	1	**487**
11:00 PM	1	241	39	0	7	1	0	0	2	2	0	0	0	**293**
Total	**114**	**15,493**	**3,510**	**6**	**817**	**116**	**0**	**27**	**117**	**158**	**6**	**3**	**89**	**20,456**
Percent	**0.6%**	**75.7%**	**17.2%**	**0.0%**	**4.0%**	**0.6%**	**0.0%**	**0.1%**	**0.6%**	**0.8%**	**0.0%**	**0.0%**	**0.4%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	103	19	0	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	0	45	5	0	2	1	0	0	0	0	0	0	0	**53**
2:00 AM	1	25	4	0	0	0	0	0	0	0	0	0	0	**30**
3:00 AM	0	34	9	0	2	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	43	13	2	5	4	0	0	2	0	0	0	0	**69**
5:00 AM	3	144	55	0	19	2	0	2	2	0	0	0	0	**227**
6:00 AM	7	376	115	0	44	4	0	2	3	4	0	0	1	**556**
7:00 AM	5	658	232	2	78	7	0	1	6	7	1	1	7	**1,005**
8:00 AM	1	827	248	0	55	8	0	2	8	17	1	0	18	**1,185**
9:00 AM	7	889	235	0	65	5	0	3	6	10	0	1	7	**1,228**
10:00 AM	3	967	232	0	74	9	0	1	2	9	0	0	6	**1,303**
11:00 AM	7	1,004	209	1	68	9	0	4	8	10	2	1	2	**1,325**
12:00 PM	5	1,042	234	0	68	10	0	1	5	8	0	0	2	**1,375**
1:00 PM	6	1,014	273	0	54	7	0	2	3	14	0	0	2	**1,375**
2:00 PM	8	1,146	207	0	51	11	0	3	10	8	1	0	4	**1,449**
3:00 PM	8	1,046	251	1	48	6	0	1	9	8	0	0	6	**1,384**
4:00 PM	8	1,030	226	0	42	6	0	1	11	12	0	0	10	**1,346**
5:00 PM	13	1,214	204	0	37	9	0	0	15	13	0	0	10	**1,515**
6:00 PM	4	1,156	207	0	22	7	0	1	11	14	1	0	9	**1,432**
7:00 PM	14	902	182	0	25	4	0	1	3	10	0	0	1	**1,142**
8:00 PM	5	645	135	0	16	5	0	1	5	7	0	0	3	**822**
9:00 PM	2	556	100	0	21	1	0	1	2	3	0	0	0	**686**
10:00 PM	4	386	76	0	14	0	0	0	4	2	0	0	1	**487**
11:00 PM	1	241	39	0	7	1	0	0	2	2	0	0	0	**293**
Total	**114**	**15,493**	**3,510**	**6**	**817**	**116**	**0**	**27**	**117**	**158**	**6**	**3**	**89**	**20,456**
Percent	**0.6%**	**75.7%**	**17.2%**	**0.0%**	**4.0%**	**0.6%**	**0.0%**	**0.1%**	**0.6%**	**0.8%**	**0.0%**	**0.0%**	**0.4%**	

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Vehicle Speed Report Summary

Location: 3rd St, B/W Shaver St & Union St

Count Direction: Westbound / Eastbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 03

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Westbound	222	528	1,578	4,645	7,769	4,427	1,108	150	25	3	1	0	0	0	0	0	0	20,456
Percent	1.1%	2.6%	7.7%	22.7%	38.0%	21.6%	5.4%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Eastbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	222	528	1,578	4,645	7,769	4,427	1,108	150	25	3	1	0	0	0	0	0	0	20,456
Percent	1.1%	2.6%	7.7%	22.7%	38.0%	21.6%	5.4%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Westbound			**Westbound**		
50th Percentile (Median)	27.1	mph	Mean (Average) Speed	26.8	mph
85th Percentile	32.3	mph	10 mph Pace	22.5 - 32.5	mph
95th Percentile	35.6	mph	Percent in Pace	65.7	%
Eastbound			**Eastbound**		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Wednesday, May 8, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	6	1	1	10	30	50	23	3	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	3	0	0	1	14	22	11	2	0	0	0	0	0	0	0	0	0	**53**
2:00 AM	0	1	0	1	7	8	10	2	1	0	0	0	0	0	0	0	0	**30**
3:00 AM	2	0	1	1	10	15	13	2	1	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	0	2	3	21	23	16	4	0	0	0	0	0	0	0	0	0	**69**
5:00 AM	0	1	6	9	31	97	69	9	3	1	1	0	0	0	0	0	0	**227**
6:00 AM	3	2	6	25	129	219	139	28	5	0	0	0	0	0	0	0	0	**556**
7:00 AM	0	2	18	149	394	323	102	14	3	0	0	0	0	0	0	0	0	**1,005**
8:00 AM	3	6	29	245	506	324	60	9	3	0	0	0	0	0	0	0	0	**1,185**
9:00 AM	2	11	110	305	503	259	36	2	0	0	0	0	0	0	0	0	0	**1,228**
10:00 AM	4	31	127	349	528	218	42	4	0	0	0	0	0	0	0	0	0	**1,303**
11:00 AM	5	25	93	285	583	283	47	4	0	0	0	0	0	0	0	0	0	**1,325**
12:00 PM	12	19	76	280	641	298	42	7	0	0	0	0	0	0	0	0	0	**1,375**
1:00 PM	7	13	62	330	590	294	67	12	0	0	0	0	0	0	0	0	0	**1,375**
2:00 PM	64	145	248	420	409	143	18	2	0	0	0	0	0	0	0	0	0	**1,449**
3:00 PM	25	62	105	405	541	210	26	6	4	0	0	0	0	0	0	0	0	**1,384**
4:00 PM	8	26	91	389	600	200	27	4	0	1	0	0	0	0	0	0	0	**1,346**
5:00 PM	38	107	277	533	406	128	25	1	0	0	0	0	0	0	0	0	0	**1,515**
6:00 PM	16	56	249	507	430	151	22	1	0	0	0	0	0	0	0	0	0	**1,432**
7:00 PM	4	14	40	268	548	213	47	7	1	0	0	0	0	0	0	0	0	**1,142**
8:00 PM	10	2	27	55	367	298	59	4	0	0	0	0	0	0	0	0	0	**822**
9:00 PM	2	3	6	34	264	300	71	6	0	0	0	0	0	0	0	0	0	**686**
10:00 PM	3	0	1	23	155	225	73	5	1	1	0	0	0	0	0	0	0	**487**
11:00 PM	5	1	3	18	62	126	63	12	3	0	0	0	0	0	0	0	0	**293**
Total	**222**	**528**	**1,578**	**4,645**	**7,769**	**4,427**	**1,108**	**150**	**25**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**20,456**
Percent	**1.1%**	**2.6%**	**7.7%**	**22.7%**	**38.0%**	**21.6%**	**5.4%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.1	mph	Mean (Average) Speed	26.8	mph
85th Percentile	32.3	mph	10 mph Pace	22.5 - 32.5	mph
95th Percentile	35.6	mph	Percent in Pace	65.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	6	1	1	10	30	50	23	3	0	0	0	0	0	0	0	0	0	**124**
1:00 AM	3	0	0	1	14	22	11	2	0	0	0	0	0	0	0	0	0	**53**
2:00 AM	0	1	0	1	7	8	10	2	1	0	0	0	0	0	0	0	0	**30**
3:00 AM	2	0	1	1	10	15	13	2	1	0	0	0	0	0	0	0	0	**45**
4:00 AM	0	0	2	3	21	23	16	4	0	0	0	0	0	0	0	0	0	**69**
5:00 AM	0	1	6	9	31	97	69	9	3	1	1	0	0	0	0	0	0	**227**
6:00 AM	3	2	6	25	129	219	139	28	5	0	0	0	0	0	0	0	0	**556**
7:00 AM	0	2	18	149	394	323	102	14	3	0	0	0	0	0	0	0	0	**1,005**
8:00 AM	3	6	29	245	506	324	60	9	3	0	0	0	0	0	0	0	0	**1,185**
9:00 AM	2	11	110	305	503	259	36	2	0	0	0	0	0	0	0	0	0	**1,228**
10:00 AM	4	31	127	349	528	218	42	4	0	0	0	0	0	0	0	0	0	**1,303**
11:00 AM	5	25	93	285	583	283	47	4	0	0	0	0	0	0	0	0	0	**1,325**
12:00 PM	12	19	76	280	641	298	42	7	0	0	0	0	0	0	0	0	0	**1,375**
1:00 PM	7	13	62	330	590	294	67	12	0	0	0	0	0	0	0	0	0	**1,375**
2:00 PM	64	145	248	420	409	143	18	2	0	0	0	0	0	0	0	0	0	**1,449**
3:00 PM	25	62	105	405	541	210	26	6	4	0	0	0	0	0	0	0	0	**1,384**
4:00 PM	8	26	91	389	600	200	27	4	0	1	0	0	0	0	0	0	0	**1,346**
5:00 PM	38	107	277	533	406	128	25	1	0	0	0	0	0	0	0	0	0	**1,515**
6:00 PM	16	56	249	507	430	151	22	1	0	0	0	0	0	0	0	0	0	**1,432**
7:00 PM	4	14	40	268	548	213	47	7	1	0	0	0	0	0	0	0	0	**1,142**
8:00 PM	10	2	27	55	367	298	59	4	0	0	0	0	0	0	0	0	0	**822**
9:00 PM	2	3	6	34	264	300	71	6	0	0	0	0	0	0	0	0	0	**686**
10:00 PM	3	0	1	23	155	225	73	5	1	1	0	0	0	0	0	0	0	**487**
11:00 PM	5	1	3	18	62	126	63	12	3	0	0	0	0	0	0	0	0	**293**
Total	**222**	**528**	**1,578**	**4,645**	**7,769**	**4,427**	**1,108**	**150**	**25**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**20,456**
Percent	**1.1%**	**2.6%**	**7.7%**	**22.7%**	**38.0%**	**21.6%**	**5.4%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.1	mph	Mean (Average) Speed	26.8	mph
85th Percentile	32.3	mph	10 mph Pace	22.5 - 32.5	mph
95th Percentile	35.6	mph	Percent in Pace	65.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 03

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Shaver St & Union St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 03

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total	WB	EB	Total
12:00 AM	124	0	124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	124	0	124
1:00 AM	53	0	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	0	53
2:00 AM	30	0	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	0	30
3:00 AM	45	0	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	0	45
4:00 AM	69	0	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	0	69
5:00 AM	227	0	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	0	227
6:00 AM	556	0	556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	556	0	556
7:00 AM	1,005	0	1,005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,005	0	1,005
8:00 AM	1,185	0	1,185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,185	0	1,185
9:00 AM	1,228	0	1,228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,228	0	1,228
10:00 AM	1,303	0	1,303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,303	0	1,303
11:00 AM	**1,325**	0	**1,325**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,325**	0	**1,325**
12:00 PM	1,375	0	1,375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,375	0	1,375
1:00 PM	1,375	0	1,375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,375	0	1,375
2:00 PM	1,449	0	1,449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,449	0	1,449
3:00 PM	1,384	0	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,384	0	1,384
4:00 PM	1,346	0	1,346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,346	0	1,346
5:00 PM	**1,515**	0	**1,515**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,515**	0	**1,515**
6:00 PM	1,432	0	1,432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,432	0	1,432
7:00 PM	1,142	0	1,142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,142	0	1,142
8:00 PM	822	0	822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	822	0	822
9:00 PM	686	0	686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	686	0	686
10:00 PM	487	0	487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	487	0	487
11:00 PM	293	0	293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	293	0	293
Total	20,456	-	20,456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,456	-	20,456
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	11:00	-	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	-	11:00
Vol.	1,325	-	1,325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,325	-	1,325
PM Peak	17:00	-	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	-	17:00
Vol.	1,515	-	1,515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,515	-	1,515

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 3rd St, B/W Union & Mooring

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 04

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	43	7,290	2,038	41	471	50	0	10	28	9	10	0	7	9,997
Percent	0.4%	72.9%	20.4%	0.4%	4.7%	0.5%	0.0%	0.1%	0.3%	0.1%	0.1%	0.0%	0.1%	100%
Westbound	60	8,267	1,398	5	294	70	0	1	20	9	10	1	4	10,139
Percent	0.6%	81.5%	13.8%	0.0%	2.9%	0.7%	0.0%	0.0%	0.2%	0.1%	0.1%	0.0%	0.0%	100%
Total	103	15,557	3,436	46	765	120	0	11	48	18	20	1	11	20,136
Percent	0.5%	77.3%	17.1%	0.2%	3.8%	0.6%	0.0%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	23	7	0	3	0	0	0	0	0	0	0	0	**33**
1:00 AM	1	8	3	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	6	0	0	2	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	13	4	0	3	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	52	18	0	10	1	0	1	1	0	0	0	0	**83**
6:00 AM	3	135	52	4	34	3	0	0	2	0	1	0	0	**234**
7:00 AM	0	336	138	4	49	6	0	0	3	2	0	0	0	**538**
8:00 AM	0	428	172	2	38	7	0	1	4	2	1	0	1	**656**
9:00 AM	0	310	132	8	44	3	0	1	4	0	2	0	2	**506**
10:00 AM	2	338	134	10	37	9	0	1	2	1	2	0	0	**536**
11:00 AM	6	444	129	3	33	8	0	1	4	0	0	0	1	**629**
12:00 PM	4	478	145	3	35	3	0	1	3	1	2	0	0	**675**
1:00 PM	3	505	149	3	34	2	0	1	2	1	1	0	1	**702**
2:00 PM	2	547	135	2	30	0	0	0	0	0	0	0	1	**717**
3:00 PM	1	601	166	1	23	1	0	2	1	1	1	0	0	**798**
4:00 PM	5	588	145	0	29	1	0	1	0	0	0	0	0	**769**
5:00 PM	7	621	147	0	21	1	0	0	0	0	0	0	0	**797**
6:00 PM	3	557	113	0	11	1	0	0	0	0	0	0	1	**686**
7:00 PM	2	422	88	0	9	2	0	0	2	0	0	0	0	**525**
8:00 PM	1	349	69	0	12	2	0	0	0	1	0	0	0	**434**
9:00 PM	1	277	51	0	6	0	0	0	0	0	0	0	0	**335**
10:00 PM	0	162	29	0	3	0	0	0	0	0	0	0	0	**194**
11:00 PM	1	80	8	0	5	0	0	0	0	0	0	0	0	**94**
Total	**43**	**7,290**	**2,038**	**41**	**471**	**50**	**0**	**10**	**28**	**9**	**10**	**0**	**7**	**9,997**
Percent	**0.4%**	**72.9%**	**20.4%**	**0.4%**	**4.7%**	**0.5%**	**0.0%**	**0.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	**15**
1:00 AM	1	6	1	0	0	1	0	0	0	0	0	0	0	**9**
2:00 AM	2	6	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	34	4	0	4	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	101	15	0	2	0	0	0	0	0	0	0	0	**118**
6:00 AM	4	271	33	0	12	0	0	0	0	0	0	0	0	**320**
7:00 AM	4	695	97	0	25	6	0	0	1	3	1	0	0	**832**
8:00 AM	2	809	133	1	19	4	0	0	2	0	2	0	0	**972**
9:00 AM	3	641	101	0	21	6	0	0	4	1	0	0	0	**777**
10:00 AM	0	567	118	1	19	10	0	0	2	1	1	0	1	**720**
11:00 AM	8	573	111	2	25	17	0	0	0	0	1	0	1	**738**
12:00 PM	1	557	113	0	17	7	0	1	6	0	2	0	0	**704**
1:00 PM	11	531	103	0	31	5	0	0	4	1	1	1	0	**688**
2:00 PM	2	587	104	1	20	4	0	0	0	0	2	0	1	**721**
3:00 PM	7	563	123	0	34	6	0	0	0	1	0	0	0	**734**
4:00 PM	1	535	108	0	25	0	0	0	1	1	0	0	1	**672**
5:00 PM	4	504	81	0	7	2	0	0	0	1	0	0	0	**599**
6:00 PM	7	467	51	0	10	1	0	0	0	0	0	0	0	**536**
7:00 PM	1	330	37	0	5	0	0	0	0	0	0	0	0	**373**
8:00 PM	2	199	29	0	13	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	108	14	0	1	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	115	11	0	2	1	0	0	0	0	0	0	0	**129**
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	**55**
Total	**60**	**8,267**	**1,398**	**5**	**294**	**70**	**0**	**1**	**20**	**9**	**10**	**1**	**4**	**10,139**
Percent	**0.6%**	**81.5%**	**13.8%**	**0.0%**	**2.9%**	**0.7%**	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	23	7	0	3	0	0	0	0	0	0	0	0	**33**
1:00 AM	1	8	3	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	6	0	0	2	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	13	4	0	3	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	52	18	0	10	1	0	1	1	0	0	0	0	**83**
6:00 AM	3	135	52	4	34	3	0	0	2	0	1	0	0	**234**
7:00 AM	0	336	138	4	49	6	0	0	3	2	0	0	0	**538**
8:00 AM	0	428	172	2	38	7	0	1	4	2	1	0	1	**656**
9:00 AM	0	310	132	8	44	3	0	1	4	0	2	0	2	**506**
10:00 AM	2	338	134	10	37	9	0	1	2	1	2	0	0	**536**
11:00 AM	6	444	129	3	33	8	0	1	4	0	0	0	1	**629**
12:00 PM	4	478	145	3	35	3	0	1	3	1	2	0	0	**675**
1:00 PM	3	505	149	3	34	2	0	1	2	1	1	0	1	**702**
2:00 PM	2	547	135	2	30	0	0	0	0	0	0	0	1	**717**
3:00 PM	1	601	166	1	23	1	0	2	1	1	1	0	0	**798**
4:00 PM	5	588	145	0	29	1	0	1	0	0	0	0	0	**769**
5:00 PM	7	621	147	0	21	1	0	0	0	0	0	0	0	**797**
6:00 PM	3	557	113	0	11	1	0	0	0	0	0	0	1	**686**
7:00 PM	2	422	88	0	9	2	0	0	2	0	0	0	0	**525**
8:00 PM	1	349	69	0	12	2	0	0	0	1	0	0	0	**434**
9:00 PM	1	277	51	0	6	0	0	0	0	0	0	0	0	**335**
10:00 PM	0	162	29	0	3	0	0	0	0	0	0	0	0	**194**
11:00 PM	1	80	8	0	5	0	0	0	0	0	0	0	0	**94**
Total	**43**	**7,290**	**2,038**	**41**	**471**	**50**	**0**	**10**	**28**	**9**	**10**	**0**	**7**	**9,997**
Percent	**0.4%**	**72.9%**	**20.4%**	**0.4%**	**4.7%**	**0.5%**	**0.0%**	**0.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	**15**
1:00 AM	1	6	1	0	0	1	0	0	0	0	0	0	0	**9**
2:00 AM	2	6	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	34	4	0	4	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	101	15	0	2	0	0	0	0	0	0	0	0	**118**
6:00 AM	4	271	33	0	12	0	0	0	0	0	0	0	0	**320**
7:00 AM	4	695	97	0	25	6	0	0	1	3	1	0	0	**832**
8:00 AM	2	809	133	1	19	4	0	0	2	0	2	0	0	**972**
9:00 AM	3	641	101	0	21	6	0	0	4	1	0	0	0	**777**
10:00 AM	0	567	118	1	19	10	0	0	2	1	1	0	1	**720**
11:00 AM	8	573	111	2	25	17	0	0	0	0	1	0	1	**738**
12:00 PM	1	557	113	0	17	7	0	1	6	0	2	0	0	**704**
1:00 PM	11	531	103	0	31	5	0	0	4	1	1	1	0	**688**
2:00 PM	2	587	104	1	20	4	0	0	0	0	2	0	1	**721**
3:00 PM	7	563	123	0	34	6	0	0	0	1	0	0	0	**734**
4:00 PM	1	535	108	0	25	0	0	0	1	1	0	0	1	**672**
5:00 PM	4	504	81	0	7	2	0	0	0	1	0	0	0	**599**
6:00 PM	7	467	51	0	10	1	0	0	0	0	0	0	0	**536**
7:00 PM	1	330	37	0	5	0	0	0	0	0	0	0	0	**373**
8:00 PM	2	199	29	0	13	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	108	14	0	1	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	115	11	0	2	1	0	0	0	0	0	0	0	**129**
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	**55**
Total	**60**	**8,267**	**1,398**	**5**	**294**	**70**	**0**	**1**	**20**	**9**	**10**	**1**	**4**	**10,139**
Percent	**0.6%**	**81.5%**	**13.8%**	**0.0%**	**2.9%**	**0.7%**	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	23	7	0	3	0	0	0	0	0	0	0	0	**33**
1:00 AM	1	8	3	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	6	0	0	2	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	10	4	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	13	4	0	3	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	52	18	0	10	1	0	1	1	0	0	0	0	**83**
6:00 AM	3	135	52	4	34	3	0	0	2	0	1	0	0	**234**
7:00 AM	0	336	138	4	49	6	0	0	3	2	0	0	0	**538**
8:00 AM	0	428	172	2	38	7	0	1	4	2	1	0	1	**656**
9:00 AM	0	310	132	8	44	3	0	1	4	0	2	0	2	**506**
10:00 AM	2	338	134	10	37	9	0	1	2	1	2	0	0	**536**
11:00 AM	6	444	129	3	33	8	0	1	4	0	0	0	1	**629**
12:00 PM	4	478	145	3	35	3	0	1	3	1	2	0	0	**675**
1:00 PM	3	505	149	3	34	2	0	1	2	1	1	0	1	**702**
2:00 PM	2	547	135	2	30	0	0	0	0	0	0	0	1	**717**
3:00 PM	1	601	166	1	23	1	0	2	1	1	1	0	0	**798**
4:00 PM	5	588	145	0	29	1	0	1	0	0	0	0	0	**769**
5:00 PM	7	621	147	0	21	1	0	0	0	0	0	0	0	**797**
6:00 PM	3	557	113	0	11	1	0	0	0	0	0	0	1	**686**
7:00 PM	2	422	88	0	9	2	0	0	2	0	0	0	0	**525**
8:00 PM	1	349	69	0	12	2	0	0	0	1	0	0	0	**434**
9:00 PM	1	277	51	0	6	0	0	0	0	0	0	0	0	**335**
10:00 PM	0	162	29	0	3	0	0	0	0	0	0	0	0	**194**
11:00 PM	1	80	8	0	5	0	0	0	0	0	0	0	0	**94**
Total	**43**	**7,290**	**2,038**	**41**	**471**	**50**	**0**	**10**	**28**	**9**	**10**	**0**	**7**	**9,997**
Percent	**0.4%**	**72.9%**	**20.4%**	**0.4%**	**4.7%**	**0.5%**	**0.0%**	**0.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	4	0	0	0	0	0	0	0	0	0	0	**15**
1:00 AM	1	6	1	0	0	1	0	0	0	0	0	0	0	**9**
2:00 AM	2	6	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	34	4	0	4	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	101	15	0	2	0	0	0	0	0	0	0	0	**118**
6:00 AM	4	271	33	0	12	0	0	0	0	0	0	0	0	**320**
7:00 AM	4	695	97	0	25	6	0	0	1	3	1	0	0	**832**
8:00 AM	2	809	133	1	19	4	0	0	2	0	2	0	0	**972**
9:00 AM	3	641	101	0	21	6	0	0	4	1	0	0	0	**777**
10:00 AM	0	567	118	1	19	10	0	0	2	1	1	0	1	**720**
11:00 AM	8	573	111	2	25	17	0	0	0	0	1	0	1	**738**
12:00 PM	1	557	113	0	17	7	0	1	6	0	2	0	0	**704**
1:00 PM	11	531	103	0	31	5	0	0	4	1	1	1	0	**688**
2:00 PM	2	587	104	1	20	4	0	0	0	0	2	0	1	**721**
3:00 PM	7	563	123	0	34	6	0	0	0	1	0	0	0	**734**
4:00 PM	1	535	108	0	25	0	0	0	1	1	0	0	1	**672**
5:00 PM	4	504	81	0	7	2	0	0	0	1	0	0	0	**599**
6:00 PM	7	467	51	0	10	1	0	0	0	0	0	0	0	**536**
7:00 PM	1	330	37	0	5	0	0	0	0	0	0	0	0	**373**
8:00 PM	2	199	29	0	13	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	108	14	0	1	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	115	11	0	2	1	0	0	0	0	0	0	0	**129**
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	**55**
Total	**60**	**8,267**	**1,398**	**5**	**294**	**70**	**0**	**1**	**20**	**9**	**10**	**1**	**4**	**10,139**
Percent	**0.6%**	**81.5%**	**13.8%**	**0.0%**	**2.9%**	**0.7%**	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: 3rd St, B/W Union & Mooring

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 04

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	5	32	45	155	605	2,484	4,360	1,912	327	55	15	2	0	0	0	0	0	9,997
Percent	0.1%	0.3%	0.5%	1.6%	6.1%	24.8%	43.6%	19.1%	3.3%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	31	45	95	281	1,233	4,028	3,502	807	105	10	1	1	0	0	0	0	0	10,139
Percent	0.3%	0.4%	0.9%	2.8%	12.2%	39.7%	34.5%	8.0%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	36	77	140	436	1,838	6,512	7,862	2,719	432	65	16	3	0	0	0	0	0	20,136
Percent	0.2%	0.4%	0.7%	2.2%	9.1%	32.3%	39.0%	13.5%	2.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	36.8	mph	Mean (Average) Speed	36.6	mph
85th Percentile	41.4	mph	10 mph Pace	31.9 - 41.9	mph
95th Percentile	44.4	mph	Percent in Pace	73.6	%
Westbound			**Westbound**		
50th Percentile (Median)	34.2	mph	Mean (Average) Speed	34.0	mph
85th Percentile	38.7	mph	10 mph Pace	29.6 - 39.6	mph
95th Percentile	41.5	mph	Percent in Pace	74.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	3	10	13	3	2	0	0	0	0	0	0	0	**33**
1:00 AM	0	0	0	1	3	1	5	2	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	0	0	0	0	1	5	1	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	2	1	3	5	0	3	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	0	0	0	0	4	8	6	2	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	0	0	0	5	15	27	24	8	3	1	0	0	0	0	0	0	**83**
6:00 AM	0	3	1	6	9	32	84	75	21	3	0	0	0	0	0	0	0	**234**
7:00 AM	0	1	3	9	45	126	239	98	15	1	1	0	0	0	0	0	0	**538**
8:00 AM	0	0	0	10	38	163	294	129	16	4	2	0	0	0	0	0	0	**656**
9:00 AM	0	1	3	7	31	161	196	93	11	2	0	1	0	0	0	0	0	**506**
10:00 AM	1	2	3	10	37	158	242	68	13	2	0	0	0	0	0	0	0	**536**
11:00 AM	1	2	3	14	51	199	263	80	13	3	0	0	0	0	0	0	0	**629**
12:00 PM	0	2	2	11	55	213	268	110	11	2	1	0	0	0	0	0	0	**675**
1:00 PM	0	9	2	11	46	214	281	118	16	3	2	0	0	0	0	0	0	**702**
2:00 PM	0	1	3	3	38	197	365	94	13	3	0	0	0	0	0	0	0	**717**
3:00 PM	1	2	1	13	56	211	342	146	23	3	0	0	0	0	0	0	0	**798**
4:00 PM	0	0	11	20	33	136	366	164	34	4	1	0	0	0	0	0	0	**769**
5:00 PM	1	4	5	16	42	144	354	189	34	6	2	0	0	0	0	0	0	**797**
6:00 PM	0	0	2	3	24	126	306	191	29	2	3	0	0	0	0	0	0	**686**
7:00 PM	0	3	4	10	30	79	235	138	23	2	1	0	0	0	0	0	0	**525**
8:00 PM	0	1	1	5	29	138	194	53	10	3	0	0	0	0	0	0	0	**434**
9:00 PM	0	1	0	1	22	102	142	59	6	1	1	0	0	0	0	0	0	**335**
10:00 PM	0	0	1	1	2	33	92	45	16	4	0	0	0	0	0	0	0	**194**
11:00 PM	0	0	0	2	6	25	37	16	5	2	0	1	0	0	0	0	0	**94**
Total	**5**	**32**	**45**	**155**	**605**	**2,484**	**4,360**	**1,912**	**327**	**55**	**15**	**2**	**0**	**0**	**0**	**0**	**0**	**9,997**
Percent	**0.1%**	**0.3%**	**0.5%**	**1.6%**	**6.1%**	**24.8%**	**43.6%**	**19.1%**	**3.3%**	**0.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	36.8	mph	Mean (Average) Speed	36.6	mph
85th Percentile	41.4	mph	10 mph Pace	31.9 - 41.9	mph
95th Percentile	44.4	mph	Percent in Pace	73.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	0	9	3	1	0	1	0	0	0	0	0	0	0	**15**
1:00 AM	0	0	1	0	0	2	5	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	1	0	0	1	3	3	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	1	0	0	3	3	1	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	0	0	1	7	24	7	3	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	1	0	2	2	18	54	29	11	1	0	0	0	0	0	0	0	**118**
6:00 AM	0	0	4	7	11	70	143	76	8	1	0	0	0	0	0	0	0	**320**
7:00 AM	0	0	4	21	90	297	320	88	10	2	0	0	0	0	0	0	0	**832**
8:00 AM	0	1	1	17	97	446	337	68	5	0	0	0	0	0	0	0	0	**972**
9:00 AM	0	2	1	17	102	326	288	39	2	0	0	0	0	0	0	0	0	**777**
10:00 AM	0	1	2	11	115	314	232	40	5	0	0	0	0	0	0	0	0	**720**
11:00 AM	0	5	11	28	134	338	186	33	2	0	1	0	0	0	0	0	0	**738**
12:00 PM	1	0	4	21	106	306	222	40	3	1	0	0	0	0	0	0	0	**704**
1:00 PM	0	1	11	35	129	278	197	34	3	0	0	0	0	0	0	0	0	**688**
2:00 PM	0	3	6	18	73	313	261	42	5	0	0	0	0	0	0	0	0	**721**
3:00 PM	30	12	31	53	129	253	189	34	3	0	0	0	0	0	0	0	0	**734**
4:00 PM	0	0	1	17	46	294	237	67	9	0	0	1	0	0	0	0	0	**672**
5:00 PM	0	2	3	10	50	217	249	60	8	0	0	0	0	0	0	0	0	**599**
6:00 PM	0	3	2	8	39	181	226	64	12	1	0	0	0	0	0	0	0	**536**
7:00 PM	0	5	2	8	43	146	137	27	4	1	0	0	0	0	0	0	0	**373**
8:00 PM	0	6	6	4	37	97	71	19	3	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	1	2	2	14	46	41	15	2	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	1	1	1	12	43	57	13	1	0	0	0	0	0	0	0	0	**129**
11:00 PM	0	0	0	1	2	21	17	10	3	1	0	0	0	0	0	0	0	**55**
Total	**31**	**45**	**95**	**281**	**1,233**	**4,028**	**3,502**	**807**	**105**	**10**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**10,139**
Percent	**0.3%**	**0.4%**	**0.9%**	**2.8%**	**12.2%**	**39.7%**	**34.5%**	**8.0%**	**1.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	34.2	mph	Mean (Average) Speed	34	mph
85th Percentile	38.7	mph	10 mph Pace	29.6 - 39.6	mph
95th Percentile	41.5	mph	Percent in Pace	74.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	3	10	13	3	2	0	0	0	0	0	0	0	**33**
1:00 AM	0	0	0	1	3	1	5	2	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	1	0	0	0	0	1	5	1	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	2	1	3	5	0	3	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	0	0	0	0	4	8	6	2	0	0	0	0	0	0	0	0	**20**
5:00 AM	0	0	0	0	5	15	27	24	8	3	1	0	0	0	0	0	0	**83**
6:00 AM	0	3	1	6	9	32	84	75	21	3	0	0	0	0	0	0	0	**234**
7:00 AM	0	1	3	9	45	126	239	98	15	1	1	0	0	0	0	0	0	**538**
8:00 AM	0	0	0	10	38	163	294	129	16	4	2	0	0	0	0	0	0	**656**
9:00 AM	0	1	3	7	31	161	196	93	11	2	0	1	0	0	0	0	0	**506**
10:00 AM	1	2	3	10	37	158	242	68	13	2	0	0	0	0	0	0	0	**536**
11:00 AM	1	2	3	14	51	199	263	80	13	3	0	0	0	0	0	0	0	**629**
12:00 PM	0	2	2	11	55	213	268	110	11	2	1	0	0	0	0	0	0	**675**
1:00 PM	0	9	2	11	46	214	281	118	16	3	2	0	0	0	0	0	0	**702**
2:00 PM	0	1	3	3	38	197	365	94	13	3	0	0	0	0	0	0	0	**717**
3:00 PM	1	2	1	13	56	211	342	146	23	3	0	0	0	0	0	0	0	**798**
4:00 PM	0	0	11	20	33	136	366	164	34	4	1	0	0	0	0	0	0	**769**
5:00 PM	1	4	5	16	42	144	354	189	34	6	2	0	0	0	0	0	0	**797**
6:00 PM	0	0	2	3	24	126	306	191	29	2	3	0	0	0	0	0	0	**686**
7:00 PM	0	3	4	10	30	79	235	138	23	2	1	0	0	0	0	0	0	**525**
8:00 PM	0	1	1	5	29	138	194	53	10	3	0	0	0	0	0	0	0	**434**
9:00 PM	0	1	0	1	22	102	142	59	6	1	1	0	0	0	0	0	0	**335**
10:00 PM	0	0	1	1	2	33	92	45	16	4	0	0	0	0	0	0	0	**194**
11:00 PM	0	0	0	2	6	25	37	16	5	2	0	1	0	0	0	0	0	**94**
Total	**5**	**32**	**45**	**155**	**605**	**2,484**	**4,360**	**1,912**	**327**	**55**	**15**	**2**	**0**	**0**	**0**	**0**	**0**	**9,997**
Percent	**0.1%**	**0.3%**	**0.5%**	**1.6%**	**6.1%**	**24.8%**	**43.6%**	**19.1%**	**3.3%**	**0.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	36.8	mph	Mean (Average) Speed	36.6	mph
85th Percentile	41.4	mph	10 mph Pace	31.9 - 41.9	mph
95th Percentile	44.4	mph	Percent in Pace	73.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 to 4/25/2019
Site Code: 04

DATA SOLUTIONS

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	0	9	3	1	0	1	0	0	0	0	0	0	0	**15**
1:00 AM	0	0	1	0	0	2	5	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	1	0	0	1	3	3	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	1	0	0	3	3	1	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	0	0	1	7	24	7	3	0	0	0	0	0	0	0	0	**42**
5:00 AM	0	1	0	2	2	18	54	29	11	1	0	0	0	0	0	0	0	**118**
6:00 AM	0	0	4	7	11	70	143	76	8	1	0	0	0	0	0	0	0	**320**
7:00 AM	0	0	4	21	90	297	320	88	10	2	0	0	0	0	0	0	0	**832**
8:00 AM	0	1	1	17	97	446	337	68	5	0	0	0	0	0	0	0	0	**972**
9:00 AM	0	2	1	17	102	326	288	39	2	0	0	0	0	0	0	0	0	**777**
10:00 AM	0	1	2	11	115	314	232	40	5	0	0	0	0	0	0	0	0	**720**
11:00 AM	0	5	11	28	134	338	186	33	2	0	1	0	0	0	0	0	0	**738**
12:00 PM	1	0	4	21	106	306	222	40	3	1	0	0	0	0	0	0	0	**704**
1:00 PM	0	1	11	35	129	278	197	34	3	0	0	0	0	0	0	0	0	**688**
2:00 PM	0	3	6	18	73	313	261	42	5	0	0	0	0	0	0	0	0	**721**
3:00 PM	30	12	31	53	129	253	189	34	3	0	0	0	0	0	0	0	0	**734**
4:00 PM	0	0	1	17	46	294	237	67	9	0	0	1	0	0	0	0	0	**672**
5:00 PM	0	2	3	10	50	217	249	60	8	0	0	0	0	0	0	0	0	**599**
6:00 PM	0	3	2	8	39	181	226	64	12	1	0	0	0	0	0	0	0	**536**
7:00 PM	0	5	2	8	43	146	137	27	4	1	0	0	0	0	0	0	0	**373**
8:00 PM	0	6	6	4	37	97	71	19	3	0	0	0	0	0	0	0	0	**243**
9:00 PM	0	1	2	2	14	46	41	15	2	0	0	0	0	0	0	0	0	**123**
10:00 PM	0	1	1	1	12	43	57	13	1	0	0	0	0	0	0	0	0	**129**
11:00 PM	0	0	0	1	2	21	17	10	3	1	0	0	0	0	0	0	0	**55**
Total	**31**	**45**	**95**	**281**	**1,233**	**4,028**	**3,502**	**807**	**105**	**10**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**10,139**
Percent	**0.3%**	**0.4%**	**0.9%**	**2.8%**	**12.2%**	**39.7%**	**34.5%**	**8.0%**	**1.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	34.2	mph	Mean (Average) Speed	34.0	mph
85th Percentile	38.7	mph	10 mph Pace	29.6 - 39.6	mph
95th Percentile	41.5	mph	Percent in Pace	74.6	%

Location: 3rd St, B/W Union & Mooring
Date Range: 4/25/2019 - 5/1/2019
Site Code: 04

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	33	15	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	15	48
1:00 AM	13	9	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	9	22
2:00 AM	9	9	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9	18
3:00 AM	14	10	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	10	24
4:00 AM	20	42	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	42	62
5:00 AM	83	118	201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	118	201
6:00 AM	234	320	554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	234	320	554
7:00 AM	538	832	1,370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	538	832	1,370
8:00 AM	**656**	**972**	**1,628**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**656**	**972**	**1,628**
9:00 AM	506	777	1,283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	506	777	1,283
10:00 AM	536	720	1,256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	536	720	1,256
11:00 AM	629	738	1,367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	629	738	1,367
12:00 PM	675	704	1,379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	675	704	1,379
1:00 PM	702	688	1,390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	702	688	1,390
2:00 PM	717	721	1,438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	717	721	1,438
3:00 PM	**798**	**734**	**1,532**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**798**	**734**	**1,532**
4:00 PM	769	672	1,441	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	769	672	1,441
5:00 PM	797	599	1,396	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	797	599	1,396
6:00 PM	686	536	1,222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	686	536	1,222
7:00 PM	525	373	898	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	525	373	898
8:00 PM	434	243	677	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	434	243	677
9:00 PM	335	123	458	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	335	123	458
10:00 PM	194	129	323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	129	323
11:00 PM	94	55	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	55	149
Total	9,997	10,139	20,136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,997	10,139	20,136
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	656	972	1,628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	656	972	1,628
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	798	734	1,532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	798	734	1,532

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 05

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	84	13,805	4,082	12	959	92	0	38	113	235	3	10	108	19,541
Percent	0.4%	70.6%	20.9%	0.1%	4.9%	0.5%	0.0%	0.2%	0.6%	1.2%	0.0%	0.1%	0.6%	100%
Westbound	80	13,709	4,229	21	1,328	74	0	38	77	108	7	5	59	19,735
Percent	0.4%	69.5%	21.4%	0.1%	6.7%	0.4%	0.0%	0.2%	0.4%	0.5%	0.0%	0.0%	0.3%	100%
Total	164	27,514	8,311	33	2,287	166	0	76	190	343	10	15	167	39,276
Percent	0.4%	70.1%	21.2%	0.1%	5.8%	0.4%	0.0%	0.2%	0.5%	0.9%	0.0%	0.0%	0.4%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

idax DATA SOLUTIONS

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	41	5	0	3	0	0	0	0	0	0	0	0	**49**
1:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
2:00 AM	0	21	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	25	4	0	3	0	0	1	0	0	0	0	0	**33**
4:00 AM	0	75	16	0	8	0	0	2	0	0	0	0	0	**101**
5:00 AM	1	171	50	2	18	1	0	1	3	0	0	0	0	**247**
6:00 AM	3	504	170	0	46	0	0	1	4	7	0	0	2	**737**
7:00 AM	7	944	281	2	54	7	0	2	9	17	0	0	8	**1,331**
8:00 AM	3	1,038	269	2	56	7	0	1	7	20	0	0	9	**1,412**
9:00 AM	2	1,036	334	0	77	11	0	6	12	20	1	2	12	**1,513**
10:00 AM	7	918	273	0	71	5	0	2	8	14	0	3	12	**1,313**
11:00 AM	8	863	307	0	69	5	0	5	8	17	0	1	9	**1,292**
12:00 PM	6	884	250	0	69	7	0	2	8	14	0	1	8	**1,249**
1:00 PM	7	854	275	0	60	6	0	5	8	19	0	1	6	**1,241**
2:00 PM	8	920	329	0	62	11	0	3	12	11	0	0	5	**1,361**
3:00 PM	7	957	313	0	83	6	0	1	10	20	0	0	11	**1,408**
4:00 PM	3	903	326	0	65	7	0	3	7	12	2	0	10	**1,338**
5:00 PM	5	968	252	0	68	5	0	0	2	25	0	0	11	**1,336**
6:00 PM	7	840	223	4	61	4	0	1	8	19	0	0	4	**1,171**
7:00 PM	2	586	132	2	29	3	0	1	1	13	0	1	1	**771**
8:00 PM	6	460	106	0	22	3	0	1	4	2	0	0	0	**604**
9:00 PM	1	450	85	0	13	3	0	0	0	1	0	1	0	**554**
10:00 PM	1	231	54	0	11	0	0	0	2	2	0	0	0	**301**
11:00 PM	0	100	22	0	11	1	0	0	0	2	0	0	0	**136**
Total	**84**	**13,805**	**4,082**	**12**	**959**	**92**	**0**	**38**	**113**	**235**	**3**	**10**	**108**	**19,541**
Percent	**0.4%**	**70.6%**	**20.9%**	**0.1%**	**4.9%**	**0.5%**	**0.0%**	**0.2%**	**0.6%**	**1.2%**	**0.0%**	**0.1%**	**0.6%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

idax DATA SOLUTIONS

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	82	18	0	1	1	0	0	0	0	0	0	0	**103**
1:00 AM	0	33	4	0	2	0	0	0	0	0	0	0	0	**39**
2:00 AM	0	24	4	0	2	0	0	0	1	0	0	0	0	**31**
3:00 AM	0	26	3	0	3	1	0	1	1	0	0	0	0	**35**
4:00 AM	0	48	11	2	5	1	0	3	0	0	0	0	0	**70**
5:00 AM	1	140	42	2	33	2	0	2	4	0	0	0	1	**227**
6:00 AM	1	297	99	6	76	4	0	1	4	0	0	0	1	**489**
7:00 AM	3	542	241	7	146	4	0	5	4	4	0	0	0	**956**
8:00 AM	2	717	335	2	131	7	0	3	4	8	1	0	5	**1,215**
9:00 AM	3	671	265	0	108	4	0	2	3	5	0	0	3	**1,064**
10:00 AM	3	731	287	0	85	4	0	2	9	10	0	1	3	**1,135**
11:00 AM	5	814	324	0	100	4	0	5	2	2	0	0	1	**1,257**
12:00 PM	9	927	293	0	92	7	0	1	3	11	1	1	2	**1,347**
1:00 PM	4	836	274	0	92	2	0	4	5	5	0	0	4	**1,226**
2:00 PM	8	973	326	0	86	4	0	1	6	17	0	2	7	**1,430**
3:00 PM	3	1,005	323	0	75	3	0	2	5	7	0	0	10	**1,433**
4:00 PM	5	1,071	357	0	70	6	0	3	5	10	2	0	6	**1,535**
5:00 PM	12	1,173	224	0	71	12	0	1	9	10	1	0	6	**1,519**
6:00 PM	7	1,057	236	2	43	4	0	1	4	10	2	0	7	**1,373**
7:00 PM	5	747	195	0	31	0	0	1	1	6	0	0	2	**988**
8:00 PM	3	642	145	0	28	3	0	0	3	2	0	1	0	**827**
9:00 PM	4	609	124	0	29	0	0	0	4	1	0	0	1	**772**
10:00 PM	0	356	62	0	12	1	0	0	0	0	0	0	0	**431**
11:00 PM	1	188	37	0	7	0	0	0	0	0	0	0	0	**233**
Total	**80**	**13,709**	**4,229**	**21**	**1,328**	**74**	**0**	**38**	**77**	**108**	**7**	**5**	**59**	**19,735**
Percent	**0.4%**	**69.5%**	**21.4%**	**0.1%**	**6.7%**	**0.4%**	**0.0%**	**0.2%**	**0.4%**	**0.5%**	**0.0%**	**0.0%**	**0.3%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

DATA SOLUTIONS

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	41	5	0	3	0	0	0	0	0	0	0	0	**49**
1:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
2:00 AM	0	21	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	25	4	0	3	0	0	1	0	0	0	0	0	**33**
4:00 AM	0	75	16	0	8	0	0	2	0	0	0	0	0	**101**
5:00 AM	1	171	50	2	18	1	0	1	3	0	0	0	0	**247**
6:00 AM	3	504	170	0	46	0	0	1	4	7	0	0	2	**737**
7:00 AM	7	944	281	2	54	7	0	2	9	17	0	0	8	**1,331**
8:00 AM	3	1,038	269	2	56	7	0	1	7	20	0	0	9	**1,412**
9:00 AM	2	1,036	334	0	77	11	0	6	12	20	1	2	12	**1,513**
10:00 AM	7	918	273	0	71	5	0	2	8	14	0	3	12	**1,313**
11:00 AM	8	863	307	0	69	5	0	5	8	17	0	1	9	**1,292**
12:00 PM	6	884	250	0	69	7	0	2	8	14	0	1	8	**1,249**
1:00 PM	7	854	275	0	60	6	0	5	8	19	0	1	6	**1,241**
2:00 PM	8	920	329	0	62	11	0	3	12	11	0	0	5	**1,361**
3:00 PM	7	957	313	0	83	6	0	1	10	20	0	0	11	**1,408**
4:00 PM	3	903	326	0	65	7	0	3	7	12	2	0	10	**1,338**
5:00 PM	5	968	252	0	68	5	0	0	2	25	0	0	11	**1,336**
6:00 PM	7	840	223	4	61	4	0	1	8	19	0	0	4	**1,171**
7:00 PM	2	586	132	2	29	3	0	1	1	13	0	1	1	**771**
8:00 PM	6	460	106	0	22	3	0	1	4	2	0	0	0	**604**
9:00 PM	1	450	85	0	13	3	0	0	0	1	0	1	0	**554**
10:00 PM	1	231	54	0	11	0	0	0	2	2	0	0	0	**301**
11:00 PM	0	100	22	0	11	1	0	0	0	2	0	0	0	**136**
Total	**84**	**13,805**	**4,082**	**12**	**959**	**92**	**0**	**38**	**113**	**235**	**3**	**10**	**108**	**19,541**
Percent	**0.4%**	**70.6%**	**20.9%**	**0.1%**	**4.9%**	**0.5%**	**0.0%**	**0.2%**	**0.6%**	**1.2%**	**0.0%**	**0.1%**	**0.6%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	82	18	0	1	1	0	0	0	0	0	0	0	**103**
1:00 AM	0	33	4	0	2	0	0	0	0	0	0	0	0	**39**
2:00 AM	0	24	4	0	2	0	0	0	1	0	0	0	0	**31**
3:00 AM	0	26	3	0	3	1	0	1	1	0	0	0	0	**35**
4:00 AM	0	48	11	2	5	1	0	3	0	0	0	0	0	**70**
5:00 AM	1	140	42	2	33	2	0	2	4	0	0	0	1	**227**
6:00 AM	1	297	99	6	76	4	0	1	4	0	0	0	1	**489**
7:00 AM	3	542	241	7	146	4	0	5	4	4	0	0	0	**956**
8:00 AM	2	717	335	2	131	7	0	3	4	8	1	0	5	**1,215**
9:00 AM	3	671	265	0	108	4	0	2	3	5	0	0	3	**1,064**
10:00 AM	3	731	287	0	85	4	0	2	9	10	0	1	3	**1,135**
11:00 AM	5	814	324	0	100	4	0	5	2	2	0	0	1	**1,257**
12:00 PM	9	927	293	0	92	7	0	1	3	11	1	1	2	**1,347**
1:00 PM	4	836	274	0	92	2	0	4	5	5	0	0	4	**1,226**
2:00 PM	8	973	326	0	86	4	0	1	6	17	0	2	7	**1,430**
3:00 PM	3	1,005	323	0	75	3	0	2	5	7	0	0	10	**1,433**
4:00 PM	5	1,071	357	0	70	6	0	3	5	10	2	0	6	**1,535**
5:00 PM	12	1,173	224	0	71	12	0	1	9	10	1	0	6	**1,519**
6:00 PM	7	1,057	236	2	43	4	0	1	4	10	2	0	7	**1,373**
7:00 PM	5	747	195	0	31	0	0	1	1	6	0	0	2	**988**
8:00 PM	3	642	145	0	28	3	0	0	3	2	0	1	0	**827**
9:00 PM	4	609	124	0	29	0	0	0	4	1	0	0	1	**772**
10:00 PM	0	356	62	0	12	1	0	0	0	0	0	0	0	**431**
11:00 PM	1	188	37	0	7	0	0	0	0	0	0	0	0	**233**
Total	**80**	**13,709**	**4,229**	**21**	**1,328**	**74**	**0**	**38**	**77**	**108**	**7**	**5**	**59**	**19,735**
Percent	**0.4%**	**69.5%**	**21.4%**	**0.1%**	**6.7%**	**0.4%**	**0.0%**	**0.2%**	**0.4%**	**0.5%**	**0.0%**	**0.0%**	**0.3%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	41	5	0	3	0	0	0	0	0	0	0	0	**49**
1:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
2:00 AM	0	21	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	25	4	0	3	0	0	1	0	0	0	0	0	**33**
4:00 AM	0	75	16	0	8	0	0	2	0	0	0	0	0	**101**
5:00 AM	1	171	50	2	18	1	0	1	3	0	0	0	0	**247**
6:00 AM	3	504	170	0	46	0	0	1	4	7	0	0	2	**737**
7:00 AM	7	944	281	2	54	7	0	2	9	17	0	0	8	**1,331**
8:00 AM	3	1,038	269	2	56	7	0	1	7	20	0	0	9	**1,412**
9:00 AM	2	1,036	334	0	77	11	0	6	12	20	1	2	12	**1,513**
10:00 AM	7	918	273	0	71	5	0	2	8	14	0	3	12	**1,313**
11:00 AM	8	863	307	0	69	5	0	5	8	17	0	1	9	**1,292**
12:00 PM	6	884	250	0	69	7	0	2	8	14	0	1	8	**1,249**
1:00 PM	7	854	275	0	60	6	0	5	8	19	0	1	6	**1,241**
2:00 PM	8	920	329	0	62	11	0	3	12	11	0	0	5	**1,361**
3:00 PM	7	957	313	0	83	6	0	1	10	20	0	0	11	**1,408**
4:00 PM	3	903	326	0	65	7	0	3	7	12	2	0	10	**1,338**
5:00 PM	5	968	252	0	68	5	0	0	2	25	0	0	11	**1,336**
6:00 PM	7	840	223	4	61	4	0	1	8	19	0	0	4	**1,171**
7:00 PM	2	586	132	2	29	3	0	1	1	13	0	1	1	**771**
8:00 PM	6	460	106	0	22	3	0	1	4	2	0	0	0	**604**
9:00 PM	1	450	85	0	13	3	0	0	0	1	0	1	0	**554**
10:00 PM	1	231	54	0	11	0	0	0	2	2	0	0	0	**301**
11:00 PM	0	100	22	0	11	1	0	0	0	2	0	0	0	**136**
Total	**84**	**13,805**	**4,082**	**12**	**959**	**92**	**0**	**38**	**113**	**235**	**3**	**10**	**108**	**19,541**
Percent	**0.4%**	**70.6%**	**20.9%**	**0.1%**	**4.9%**	**0.5%**	**0.0%**	**0.2%**	**0.6%**	**1.2%**	**0.0%**	**0.1%**	**0.6%**	

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	82	18	0	1	1	0	0	0	0	0	0	0	**103**
1:00 AM	0	33	4	0	2	0	0	0	0	0	0	0	0	**39**
2:00 AM	0	24	4	0	2	0	0	0	1	0	0	0	0	**31**
3:00 AM	0	26	3	0	3	1	0	1	1	0	0	0	0	**35**
4:00 AM	0	48	11	2	5	1	0	3	0	0	0	0	0	**70**
5:00 AM	1	140	42	2	33	2	0	2	4	0	0	0	1	**227**
6:00 AM	1	297	99	6	76	4	0	1	4	0	0	0	1	**489**
7:00 AM	3	542	241	7	146	4	0	5	4	4	0	0	0	**956**
8:00 AM	2	717	335	2	131	7	0	3	4	8	1	0	5	**1,215**
9:00 AM	3	671	265	0	108	4	0	2	3	5	0	0	3	**1,064**
10:00 AM	3	731	287	0	85	4	0	2	9	10	0	1	3	**1,135**
11:00 AM	5	814	324	0	100	4	0	5	2	2	0	0	1	**1,257**
12:00 PM	9	927	293	0	92	7	0	1	3	11	1	1	2	**1,347**
1:00 PM	4	836	274	0	92	2	0	4	5	5	0	0	4	**1,226**
2:00 PM	8	973	326	0	86	4	0	1	6	17	0	2	7	**1,430**
3:00 PM	3	1,005	323	0	75	3	0	2	5	7	0	0	10	**1,433**
4:00 PM	5	1,071	357	0	70	6	0	3	5	10	2	0	6	**1,535**
5:00 PM	12	1,173	224	0	71	12	0	1	9	10	1	0	6	**1,519**
6:00 PM	7	1,057	236	2	43	4	0	1	4	10	2	0	7	**1,373**
7:00 PM	5	747	195	0	31	0	0	1	1	6	0	0	2	**988**
8:00 PM	3	642	145	0	28	3	0	0	3	2	0	1	0	**827**
9:00 PM	4	609	124	0	29	0	0	0	4	1	0	0	1	**772**
10:00 PM	0	356	62	0	12	1	0	0	0	0	0	0	0	**431**
11:00 PM	1	188	37	0	7	0	0	0	0	0	0	0	0	**233**
Total	**80**	**13,709**	**4,229**	**21**	**1,328**	**74**	**0**	**38**	**77**	**108**	**7**	**5**	**59**	**19,735**
Percent	**0.4%**	**69.5%**	**21.4%**	**0.1%**	**6.7%**	**0.4%**	**0.0%**	**0.2%**	**0.4%**	**0.5%**	**0.0%**	**0.0%**	**0.3%**	

Vehicle Speed Report Summary

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 05

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	5	46	125	303	935	3,825	7,923	4,914	1,220	194	40	7	3	1	0	0	0	19,541
Percent	0.0%	0.2%	0.6%	1.6%	4.8%	19.6%	40.5%	25.1%	6.2%	1.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	364	496	441	612	2,046	4,966	6,279	3,380	942	171	23	11	3	1	0	0	0	19,735
Percent	1.8%	2.5%	2.2%	3.1%	10.4%	25.2%	31.8%	17.1%	4.8%	0.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	369	542	566	915	2,981	8,791	14,202	8,294	2,162	365	63	18	6	2	0	0	0	39,276
Percent	0.9%	1.4%	1.4%	2.3%	7.6%	22.4%	36.2%	21.1%	5.5%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	37.9	mph	Mean (Average) Speed	37.7	mph
85th Percentile	42.8	mph	10 mph Pace	33.1 - 43.1	mph
95th Percentile	46.2	mph	Percent in Pace	69.3	%
Westbound			**Westbound**		
50th Percentile (Median)	35.7	mph	Mean (Average) Speed	34.6	mph
85th Percentile	41.8	mph	10 mph Pace	31.0 - 41.0	mph
95th Percentile	45.5	mph	Percent in Pace	57.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	2	24	16	5	1	0	0	0	0	0	0	0	**49**
1:00 AM	0	0	0	0	2	2	11	4	1	0	0	0	1	0	0	0	0	**21**
2:00 AM	0	0	0	0	0	4	8	5	2	1	1	1	0	0	0	0	0	**22**
3:00 AM	0	0	0	0	0	3	15	11	2	1	0	1	0	0	0	0	0	**33**
4:00 AM	0	0	0	0	1	6	25	39	20	7	2	1	0	0	0	0	0	**101**
5:00 AM	0	0	1	2	1	14	53	104	52	14	5	0	1	0	0	0	0	**247**
6:00 AM	0	0	0	1	4	68	272	270	99	19	4	0	0	0	0	0	0	**737**
7:00 AM	0	2	2	5	27	172	506	496	106	13	2	0	0	0	0	0	0	**1,331**
8:00 AM	0	2	6	9	15	174	649	441	103	10	2	0	1	0	0	0	0	**1,412**
9:00 AM	0	3	7	26	52	234	734	370	71	13	3	0	0	0	0	0	0	**1,513**
10:00 AM	0	0	2	6	49	298	585	286	80	6	1	0	0	0	0	0	0	**1,313**
11:00 AM	0	2	7	13	76	310	547	282	47	7	1	0	0	0	0	0	0	**1,292**
12:00 PM	0	7	16	45	89	308	500	230	49	3	2	0	0	0	0	0	0	**1,249**
1:00 PM	0	4	10	38	95	317	457	268	45	6	1	0	0	0	0	0	0	**1,241**
2:00 PM	1	4	16	16	66	286	595	301	68	8	0	0	0	0	0	0	0	**1,361**
3:00 PM	0	1	3	6	54	302	603	348	77	9	2	3	0	0	0	0	0	**1,408**
4:00 PM	0	2	14	50	134	328	482	253	62	12	1	0	0	0	0	0	0	**1,338**
5:00 PM	2	7	27	63	166	393	438	189	43	6	2	0	0	0	0	0	0	**1,336**
6:00 PM	2	4	9	20	56	234	502	269	63	11	1	0	0	0	0	0	0	**1,171**
7:00 PM	0	2	1	1	8	104	294	262	80	15	4	0	0	0	0	0	0	**771**
8:00 PM	0	1	2	1	24	99	269	159	42	4	1	1	0	1	0	0	0	**604**
9:00 PM	0	3	0	0	7	117	213	154	49	10	1	0	0	0	0	0	0	**554**
10:00 PM	0	1	2	1	7	37	97	110	35	7	4	0	0	0	0	0	0	**301**
11:00 PM	0	1	0	0	1	13	44	47	19	11	0	0	0	0	0	0	0	**136**
Total	**5**	**46**	**125**	**303**	**935**	**3,825**	**7,923**	**4,914**	**1,220**	**194**	**40**	**7**	**3**	**1**	**0**	**0**	**0**	**19,541**
Percent	**0.0%**	**0.2%**	**0.6%**	**1.6%**	**4.8%**	**19.6%**	**40.5%**	**25.1%**	**6.2%**	**1.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	37.9	mph	Mean (Average) Speed	37.7	mph
85th Percentile	42.8	mph	10 mph Pace	33.1 - 43.1	mph
95th Percentile	46.2	mph	Percent in Pace	69.3	%

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	3	11	29	33	19	3	3	0	0	0	0	0	0	**103**
1:00 AM	0	0	0	0	0	7	18	10	3	0	1	0	0	0	0	0	0	**39**
2:00 AM	0	0	0	0	2	3	13	10	3	0	0	0	0	0	0	0	0	**31**
3:00 AM	0	0	0	1	0	4	13	10	4	1	1	0	1	0	0	0	0	**35**
4:00 AM	0	1	0	0	0	8	26	19	14	2	0	0	0	0	0	0	0	**70**
5:00 AM	0	1	1	0	9	28	80	69	30	8	1	0	0	0	0	0	0	**227**
6:00 AM	0	3	4	2	18	84	169	130	59	16	1	3	0	0	0	0	0	**489**
7:00 AM	1	2	1	9	61	260	351	201	55	12	3	0	0	0	0	0	0	**956**
8:00 AM	0	1	5	18	145	358	373	240	62	12	0	1	0	0	0	0	0	**1,215**
9:00 AM	0	6	4	5	46	216	408	290	68	20	0	0	0	1	0	0	0	**1,064**
10:00 AM	0	6	9	17	102	297	409	220	66	7	1	1	0	0	0	0	0	**1,135**
11:00 AM	0	3	12	38	118	332	476	216	57	5	0	0	0	0	0	0	0	**1,257**
12:00 PM	0	11	18	47	194	389	399	215	60	11	3	0	0	0	0	0	0	**1,347**
1:00 PM	0	14	15	44	154	354	378	190	66	10	1	0	0	0	0	0	0	**1,226**
2:00 PM	0	8	16	47	204	477	453	179	39	7	0	0	0	0	0	0	0	**1,430**
3:00 PM	0	9	14	59	150	428	493	236	39	4	0	1	0	0	0	0	0	**1,433**
4:00 PM	0	6	18	61	248	475	498	184	35	8	1	0	1	0	0	0	0	**1,535**
5:00 PM	280	296	186	147	219	203	137	38	12	1	0	0	0	0	0	0	0	**1,519**
6:00 PM	81	117	114	84	155	298	336	146	34	6	1	0	1	0	0	0	0	**1,373**
7:00 PM	0	2	7	17	80	261	366	192	51	9	1	2	0	0	0	0	0	**988**
8:00 PM	0	3	12	10	87	225	295	149	38	8	0	0	0	0	0	0	0	**827**
9:00 PM	1	2	4	3	41	160	296	205	51	7	2	0	0	0	0	0	0	**772**
10:00 PM	0	3	0	1	7	56	171	123	55	9	3	3	0	0	0	0	0	**431**
11:00 PM	1	1	1	1	3	32	92	75	22	5	0	0	0	0	0	0	0	**233**
Total	**364**	**496**	**441**	**612**	**2,046**	**4,966**	**6,279**	**3,380**	**942**	**171**	**23**	**11**	**3**	**1**	**0**	**0**	**0**	**19,735**
Percent	**1.8%**	**2.5%**	**2.2%**	**3.1%**	**10.4%**	**25.2%**	**31.8%**	**17.1%**	**4.8%**	**0.9%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	35.7	mph	Mean (Average) Speed	34.6	mph
85th Percentile	41.8	mph	10 mph Pace	31.0 - 41.0	mph
95th Percentile	45.5	mph	Percent in Pace	57.84	%

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	2	24	16	5	1	0	0	0	0	0	0	0	**49**
1:00 AM	0	0	0	0	2	2	11	4	1	0	0	0	1	0	0	0	0	**21**
2:00 AM	0	0	0	0	0	4	8	5	2	1	1	1	0	0	0	0	0	**22**
3:00 AM	0	0	0	0	0	3	15	11	2	1	0	1	0	0	0	0	0	**33**
4:00 AM	0	0	0	0	1	6	25	39	20	7	2	1	0	0	0	0	0	**101**
5:00 AM	0	0	1	2	1	14	53	104	52	14	5	0	1	0	0	0	0	**247**
6:00 AM	0	0	0	1	4	68	272	270	99	19	4	0	0	0	0	0	0	**737**
7:00 AM	0	2	2	5	27	172	506	496	106	13	2	0	0	0	0	0	0	**1,331**
8:00 AM	0	2	6	9	15	174	649	441	103	10	2	0	1	0	0	0	0	**1,412**
9:00 AM	0	3	7	26	52	234	734	370	71	13	3	0	0	0	0	0	0	**1,513**
10:00 AM	0	0	2	6	49	298	585	286	80	6	1	0	0	0	0	0	0	**1,313**
11:00 AM	0	2	7	13	76	310	547	282	47	7	1	0	0	0	0	0	0	**1,292**
12:00 PM	0	7	16	45	89	308	500	230	49	3	2	0	0	0	0	0	0	**1,249**
1:00 PM	0	4	10	38	95	317	457	268	45	6	1	0	0	0	0	0	0	**1,241**
2:00 PM	1	4	16	16	66	286	595	301	68	8	0	0	0	0	0	0	0	**1,361**
3:00 PM	0	1	3	6	54	302	603	348	77	9	2	3	0	0	0	0	0	**1,408**
4:00 PM	0	2	14	50	134	328	482	253	62	12	1	0	0	0	0	0	0	**1,338**
5:00 PM	2	7	27	63	166	393	438	189	43	6	2	0	0	0	0	0	0	**1,336**
6:00 PM	2	4	9	20	56	234	502	269	63	11	1	0	0	0	0	0	0	**1,171**
7:00 PM	0	2	1	1	8	104	294	262	80	15	4	0	0	0	0	0	0	**771**
8:00 PM	0	1	2	1	24	99	269	159	42	4	1	1	0	1	0	0	0	**604**
9:00 PM	0	3	0	0	7	117	213	154	49	10	1	0	0	0	0	0	0	**554**
10:00 PM	0	1	2	1	7	37	97	110	35	7	4	0	0	0	0	0	0	**301**
11:00 PM	0	1	0	0	1	13	44	47	19	11	0	0	0	0	0	0	0	**136**
Total	**5**	**46**	**125**	**303**	**935**	**3,825**	**7,923**	**4,914**	**1,220**	**194**	**40**	**7**	**3**	**1**	**0**	**0**	**0**	**19,541**
Percent	**0.0%**	**0.2%**	**0.6%**	**1.6%**	**4.8%**	**19.6%**	**40.5%**	**25.1%**	**6.2%**	**1.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	37.9	mph	Mean (Average) Speed	37.7	mph
85th Percentile	42.8	mph	10 mph Pace	33.1 - 43.1	mph
95th Percentile	46.2	mph	Percent in Pace	69.3	%

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 to 4/25/2019
Site Code: 05

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	3	11	29	33	19	3	3	0	0	0	0	0	0	**103**
1:00 AM	0	0	0	0	0	7	18	10	3	0	1	0	0	0	0	0	0	**39**
2:00 AM	0	0	0	0	2	3	13	10	3	0	0	0	0	0	0	0	0	**31**
3:00 AM	0	0	0	1	0	4	13	10	4	1	1	0	1	0	0	0	0	**35**
4:00 AM	0	1	0	0	0	8	26	19	14	2	0	0	0	0	0	0	0	**70**
5:00 AM	0	1	1	0	9	28	80	69	30	8	1	0	0	0	0	0	0	**227**
6:00 AM	0	3	4	2	18	84	169	130	59	16	1	3	0	0	0	0	0	**489**
7:00 AM	1	2	1	9	61	260	351	201	55	12	3	0	0	0	0	0	0	**956**
8:00 AM	0	1	5	18	145	358	373	240	62	12	0	1	0	0	0	0	0	**1,215**
9:00 AM	0	6	4	5	46	216	408	290	68	20	0	0	0	1	0	0	0	**1,064**
10:00 AM	0	6	9	17	102	297	409	220	66	7	1	1	0	0	0	0	0	**1,135**
11:00 AM	0	3	12	38	118	332	476	216	57	5	0	0	0	0	0	0	0	**1,257**
12:00 PM	0	11	18	47	194	389	399	215	60	11	3	0	0	0	0	0	0	**1,347**
1:00 PM	0	14	15	44	154	354	378	190	66	10	1	0	0	0	0	0	0	**1,226**
2:00 PM	0	8	16	47	204	477	453	179	39	7	0	0	0	0	0	0	0	**1,430**
3:00 PM	0	9	14	59	150	428	493	236	39	4	0	1	0	0	0	0	0	**1,433**
4:00 PM	0	6	18	61	248	475	498	184	35	8	1	0	1	0	0	0	0	**1,535**
5:00 PM	280	296	186	147	219	203	137	38	12	1	0	0	0	0	0	0	0	**1,519**
6:00 PM	81	117	114	84	155	298	336	146	34	6	1	0	1	0	0	0	0	**1,373**
7:00 PM	0	2	7	17	80	261	366	192	51	9	1	2	0	0	0	0	0	**988**
8:00 PM	0	3	12	10	87	225	295	149	38	8	0	0	0	0	0	0	0	**827**
9:00 PM	1	2	4	3	41	160	296	205	51	7	2	0	0	0	0	0	0	**772**
10:00 PM	0	3	0	1	7	56	171	123	55	9	3	3	0	0	0	0	0	**431**
11:00 PM	1	1	1	1	3	32	92	75	22	5	0	0	0	0	0	0	0	**233**
Total	**364**	**496**	**441**	**612**	**2,046**	**4,966**	**6,279**	**3,380**	**942**	**171**	**23**	**11**	**3**	**1**	**0**	**0**	**0**	**19,735**
Percent	**1.8%**	**2.5%**	**2.2%**	**3.1%**	**10.4%**	**25.2%**	**31.8%**	**17.1%**	**4.8%**	**0.9%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	35.7	mph	Mean (Average) Speed	34.6	mph
85th Percentile	41.8	mph	10 mph Pace	31.0 - 41.0	mph
95th Percentile	45.5	mph	Percent in Pace	57.8	%

Location: 4th St, B/W Ross Valley & 2nd-4th-Marquard
Date Range: 4/25/2019 - 5/1/2019
Site Code: 05

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	49	103	152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	103	152
1:00 AM	21	39	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	39	60
2:00 AM	22	31	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	31	53
3:00 AM	33	35	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	35	68
4:00 AM	101	70	171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	70	171
5:00 AM	247	227	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	227	474
6:00 AM	737	489	1,226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	737	489	1,226
7:00 AM	1,331	956	2,287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,331	956	2,287
8:00 AM	1,412	1,215	**2,627**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,412	1,215	**2,627**
9:00 AM	**1,513**	1,064	2,577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,513**	1,064	2,577
10:00 AM	1,313	1,135	2,448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,313	1,135	2,448
11:00 AM	1,292	**1,257**	2,549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,292	**1,257**	2,549
12:00 PM	1,249	1,347	2,596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,249	1,347	2,596
1:00 PM	1,241	1,226	2,467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,241	1,226	2,467
2:00 PM	1,361	1,430	2,791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,361	1,430	2,791
3:00 PM	**1,408**	1,433	2,841	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,408**	1,433	2,841
4:00 PM	1,338	**1,535**	**2,873**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,338	**1,535**	**2,873**
5:00 PM	1,336	1,519	2,855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,336	1,519	2,855
6:00 PM	1,171	1,373	2,544	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,171	1,373	2,544
7:00 PM	771	988	1,759	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	771	988	1,759
8:00 PM	604	827	1,431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	604	827	1,431
9:00 PM	554	772	1,326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	554	772	1,326
10:00 PM	301	431	732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301	431	732
11:00 PM	136	233	369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	136	233	369
Total	19,541	19,735	39,276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,541	19,735	39,276
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	09:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	09:00	11:00	08:00
Vol.	1,513	1,257	2,627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,513	1,257	2,627
PM Peak	15:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:00	16:00
Vol.	1,408	1,535	2,873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,408	1,535	2,873

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 4th St, B/W 2nd-Marquard & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 06

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	85	3,661	565	6	232	9	0	0	0	0	0	0	0	4,558
Percent	1.9%	80.3%	12.4%	0.1%	5.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	123	3,633	588	3	258	12	0	2	1	2	0	0	0	4,622
Percent	2.7%	78.6%	12.7%	0.1%	5.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	208	7,294	1,153	9	490	21	0	2	1	2	0	0	0	9,180
Percent	2.3%	79.5%	12.6%	0.1%	5.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	32	4	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
2:00 AM	3	3	2	0	2	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	9	3	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	4	4	0	4	0	0	0	0	0	0	0	0	**13**
5:00 AM	3	32	6	1	5	1	0	0	0	0	0	0	0	**48**
6:00 AM	3	45	8	0	7	0	0	0	0	0	0	0	0	**63**
7:00 AM	3	164	42	3	13	0	0	0	0	0	0	0	0	**225**
8:00 AM	7	215	45	1	22	0	0	0	0	0	0	0	0	**290**
9:00 AM	3	201	36	0	21	1	0	0	0	0	0	0	0	**262**
10:00 AM	6	209	38	1	17	1	0	0	0	0	0	0	0	**272**
11:00 AM	6	253	36	0	24	0	0	0	0	0	0	0	0	**319**
12:00 PM	7	325	44	0	16	1	0	0	0	0	0	0	0	**393**
1:00 PM	3	283	44	0	18	0	0	0	0	0	0	0	0	**348**
2:00 PM	6	276	50	0	14	0	0	0	0	0	0	0	0	**346**
3:00 PM	3	276	49	0	21	1	0	0	0	0	0	0	0	**350**
4:00 PM	4	286	44	0	17	0	0	0	0	0	0	0	0	**351**
5:00 PM	4	285	38	0	11	1	0	0	0	0	0	0	0	**339**
6:00 PM	4	189	25	0	9	0	0	0	0	0	0	0	0	**227**
7:00 PM	5	183	13	0	1	2	0	0	0	0	0	0	0	**204**
8:00 PM	4	135	11	0	3	1	0	0	0	0	0	0	0	**154**
9:00 PM	5	135	6	0	2	0	0	0	0	0	0	0	0	**148**
10:00 PM	3	72	10	0	1	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	35	5	0	2	0	0	0	0	0	0	0	0	**42**
Total	**85**	**3,661**	**565**	**6**	**232**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**1.9%**	**80.3%**	**12.4%**	**0.1%**	**5.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	3	1	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	**10**
2:00 AM	1	4	3	0	1	1	0	0	0	0	0	0	0	**10**
3:00 AM	0	6	2	0	0	0	0	0	0	1	0	0	0	**9**
4:00 AM	0	22	4	0	4	0	0	1	0	0	0	0	0	**31**
5:00 AM	3	42	14	0	11	1	0	0	0	0	0	0	0	**71**
6:00 AM	2	75	19	1	14	1	0	0	0	0	0	0	0	**112**
7:00 AM	4	162	48	0	25	1	0	0	0	0	0	0	0	**240**
8:00 AM	8	212	41	0	19	1	0	0	0	0	0	0	0	**281**
9:00 AM	3	184	31	0	16	0	0	0	0	0	0	0	0	**234**
10:00 AM	10	223	41	0	25	0	0	0	0	1	0	0	0	**300**
11:00 AM	8	247	41	0	28	0	0	0	0	0	0	0	0	**324**
12:00 PM	7	273	39	0	11	1	0	0	0	0	0	0	0	**331**
1:00 PM	8	276	49	0	9	1	0	0	0	0	0	0	0	**343**
2:00 PM	7	276	29	0	22	0	0	0	0	0	0	0	0	**334**
3:00 PM	9	314	43	0	21	0	0	0	0	0	0	0	0	**387**
4:00 PM	9	272	41	0	8	2	0	0	0	0	0	0	0	**332**
5:00 PM	12	295	51	0	10	0	0	1	0	0	0	0	0	**369**
6:00 PM	8	276	28	0	13	2	0	0	1	0	0	0	0	**328**
7:00 PM	9	177	18	1	6	0	0	0	0	0	0	0	0	**211**
8:00 PM	5	137	18	0	7	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	82	12	0	2	0	0	0	0	0	0	0	0	**103**
10:00 PM	3	42	8	0	3	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	**25**
Total	**123**	**3,633**	**588**	**3**	**258**	**12**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**4,622**
Percent	**2.7%**	**78.6%**	**12.7%**	**0.1%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	32	4	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
2:00 AM	3	3	2	0	2	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	9	3	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	4	4	0	4	0	0	0	0	0	0	0	0	**13**
5:00 AM	3	32	6	1	5	1	0	0	0	0	0	0	0	**48**
6:00 AM	3	45	8	0	7	0	0	0	0	0	0	0	0	**63**
7:00 AM	3	164	42	3	13	0	0	0	0	0	0	0	0	**225**
8:00 AM	7	215	45	1	22	0	0	0	0	0	0	0	0	**290**
9:00 AM	3	201	36	0	21	1	0	0	0	0	0	0	0	**262**
10:00 AM	6	209	38	1	17	1	0	0	0	0	0	0	0	**272**
11:00 AM	6	253	36	0	24	0	0	0	0	0	0	0	0	**319**
12:00 PM	7	325	44	0	16	1	0	0	0	0	0	0	0	**393**
1:00 PM	3	283	44	0	18	0	0	0	0	0	0	0	0	**348**
2:00 PM	6	276	50	0	14	0	0	0	0	0	0	0	0	**346**
3:00 PM	3	276	49	0	21	1	0	0	0	0	0	0	0	**350**
4:00 PM	4	286	44	0	17	0	0	0	0	0	0	0	0	**351**
5:00 PM	4	285	38	0	11	1	0	0	0	0	0	0	0	**339**
6:00 PM	4	189	25	0	9	0	0	0	0	0	0	0	0	**227**
7:00 PM	5	183	13	0	1	2	0	0	0	0	0	0	0	**204**
8:00 PM	4	135	11	0	3	1	0	0	0	0	0	0	0	**154**
9:00 PM	5	135	6	0	2	0	0	0	0	0	0	0	0	**148**
10:00 PM	3	72	10	0	1	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	35	5	0	2	0	0	0	0	0	0	0	0	**42**
Total	**85**	**3,661**	**565**	**6**	**232**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**1.9%**	**80.3%**	**12.4%**	**0.1%**	**5.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	3	1	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	**10**
2:00 AM	1	4	3	0	1	1	0	0	0	0	0	0	0	**10**
3:00 AM	0	6	2	0	0	0	0	0	0	1	0	0	0	**9**
4:00 AM	0	22	4	0	4	0	0	1	0	0	0	0	0	**31**
5:00 AM	3	42	14	0	11	1	0	0	0	0	0	0	0	**71**
6:00 AM	2	75	19	1	14	1	0	0	0	0	0	0	0	**112**
7:00 AM	4	162	48	0	25	1	0	0	0	0	0	0	0	**240**
8:00 AM	8	212	41	0	19	1	0	0	0	0	0	0	0	**281**
9:00 AM	3	184	31	0	16	0	0	0	0	0	0	0	0	**234**
10:00 AM	10	223	41	0	25	0	0	0	0	1	0	0	0	**300**
11:00 AM	8	247	41	0	28	0	0	0	0	0	0	0	0	**324**
12:00 PM	7	273	39	0	11	1	0	0	0	0	0	0	0	**331**
1:00 PM	8	276	49	0	9	1	0	0	0	0	0	0	0	**343**
2:00 PM	7	276	29	0	22	0	0	0	0	0	0	0	0	**334**
3:00 PM	9	314	43	0	21	0	0	0	0	0	0	0	0	**387**
4:00 PM	9	272	41	0	8	2	0	0	0	0	0	0	0	**332**
5:00 PM	12	295	51	0	10	0	0	1	0	0	0	0	0	**369**
6:00 PM	8	276	28	0	13	2	0	0	1	0	0	0	0	**328**
7:00 PM	9	177	18	1	6	0	0	0	0	0	0	0	0	**211**
8:00 PM	5	137	18	0	7	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	82	12	0	2	0	0	0	0	0	0	0	0	**103**
10:00 PM	3	42	8	0	3	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	**25**
Total	**123**	**3,633**	**588**	**3**	**258**	**12**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**4,622**
Percent	**2.7%**	**78.6%**	**12.7%**	**0.1%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	32	4	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
2:00 AM	3	3	2	0	2	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	9	3	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	4	4	0	4	0	0	0	0	0	0	0	0	**13**
5:00 AM	3	32	6	1	5	1	0	0	0	0	0	0	0	**48**
6:00 AM	3	45	8	0	7	0	0	0	0	0	0	0	0	**63**
7:00 AM	3	164	42	3	13	0	0	0	0	0	0	0	0	**225**
8:00 AM	7	215	45	1	22	0	0	0	0	0	0	0	0	**290**
9:00 AM	3	201	36	0	21	1	0	0	0	0	0	0	0	**262**
10:00 AM	6	209	38	1	17	1	0	0	0	0	0	0	0	**272**
11:00 AM	6	253	36	0	24	0	0	0	0	0	0	0	0	**319**
12:00 PM	7	325	44	0	16	1	0	0	0	0	0	0	0	**393**
1:00 PM	3	283	44	0	18	0	0	0	0	0	0	0	0	**348**
2:00 PM	6	276	50	0	14	0	0	0	0	0	0	0	0	**346**
3:00 PM	3	276	49	0	21	1	0	0	0	0	0	0	0	**350**
4:00 PM	4	286	44	0	17	0	0	0	0	0	0	0	0	**351**
5:00 PM	4	285	38	0	11	1	0	0	0	0	0	0	0	**339**
6:00 PM	4	189	25	0	9	0	0	0	0	0	0	0	0	**227**
7:00 PM	5	183	13	0	1	2	0	0	0	0	0	0	0	**204**
8:00 PM	4	135	11	0	3	1	0	0	0	0	0	0	0	**154**
9:00 PM	5	135	6	0	2	0	0	0	0	0	0	0	0	**148**
10:00 PM	3	72	10	0	1	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	35	5	0	2	0	0	0	0	0	0	0	0	**42**
Total	**85**	**3,661**	**565**	**6**	**232**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**1.9%**	**80.3%**	**12.4%**	**0.1%**	**5.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	3	1	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	**10**
2:00 AM	1	4	3	0	1	1	0	0	0	0	0	0	0	**10**
3:00 AM	0	6	2	0	0	0	0	0	0	1	0	0	0	**9**
4:00 AM	0	22	4	0	4	0	0	1	0	0	0	0	0	**31**
5:00 AM	3	42	14	0	11	1	0	0	0	0	0	0	0	**71**
6:00 AM	2	75	19	1	14	1	0	0	0	0	0	0	0	**112**
7:00 AM	4	162	48	0	25	1	0	0	0	0	0	0	0	**240**
8:00 AM	8	212	41	0	19	1	0	0	0	0	0	0	0	**281**
9:00 AM	3	184	31	0	16	0	0	0	0	0	0	0	0	**234**
10:00 AM	10	223	41	0	25	0	0	0	0	1	0	0	0	**300**
11:00 AM	8	247	41	0	28	0	0	0	0	0	0	0	0	**324**
12:00 PM	7	273	39	0	11	1	0	0	0	0	0	0	0	**331**
1:00 PM	8	276	49	0	9	1	0	0	0	0	0	0	0	**343**
2:00 PM	7	276	29	0	22	0	0	0	0	0	0	0	0	**334**
3:00 PM	9	314	43	0	21	0	0	0	0	0	0	0	0	**387**
4:00 PM	9	272	41	0	8	2	0	0	0	0	0	0	0	**332**
5:00 PM	12	295	51	0	10	0	0	1	0	0	0	0	0	**369**
6:00 PM	8	276	28	0	13	2	0	0	1	0	0	0	0	**328**
7:00 PM	9	177	18	1	6	0	0	0	0	0	0	0	0	**211**
8:00 PM	5	137	18	0	7	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	82	12	0	2	0	0	0	0	0	0	0	0	**103**
10:00 PM	3	42	8	0	3	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	**25**
Total	**123**	**3,633**	**588**	**3**	**258**	**12**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**4,622**
Percent	**2.7%**	**78.6%**	**12.7%**	**0.1%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: 4th St, B/W 2nd-Marquard & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 06

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	195	821	1,468	1,519	471	74	7	3	0	0	0	0	0	0	0	0	0	4,558
Percent	4.3%	18.0%	32.2%	33.3%	10.3%	1.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	140	502	1,570	1,754	564	84	8	0	0	0	0	0	0	0	0	0	0	4,622
Percent	3.0%	10.9%	34.0%	37.9%	12.2%	1.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	335	1,323	3,038	3,273	1,035	158	15	3	0	0	0	0	0	0	0	0	0	9,180
Percent	3.6%	14.4%	33.1%	35.7%	11.3%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	19.5	mph	Mean (Average) Speed	19.1	mph
85th Percentile	24.4	mph	10 mph Pace	14.7 - 24.7	mph
95th Percentile	27.4	mph	Percent in Pace	65.6	%
Westbound			**Westbound**		
50th Percentile (Median)	20.2	mph	Mean (Average) Speed	20.1	mph
85th Percentile	24.8	mph	10 mph Pace	15.4 - 25.4	mph
95th Percentile	27.8	mph	Percent in Pace	72.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Wednesday, May 8, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	1	3	17	12	2	1	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	0	1	7	8	0	1	0	0	0	0	0	0	0	0	0	0	**17**
2:00 AM	0	2	3	2	1	2	0	0	0	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	0	3	3	0	6	1	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	1	2	5	0	3	1	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	2	13	15	14	1	1	1	0	0	0	0	0	0	0	0	0	**48**
6:00 AM	0	3	8	18	25	8	1	0	0	0	0	0	0	0	0	0	0	**63**
7:00 AM	4	12	40	104	56	9	0	0	0	0	0	0	0	0	0	0	0	**225**
8:00 AM	2	25	75	137	47	4	0	0	0	0	0	0	0	0	0	0	0	**290**
9:00 AM	8	27	77	109	38	3	0	0	0	0	0	0	0	0	0	0	0	**262**
10:00 AM	7	19	89	121	29	7	0	0	0	0	0	0	0	0	0	0	0	**272**
11:00 AM	14	43	128	94	38	2	0	0	0	0	0	0	0	0	0	0	0	**319**
12:00 PM	24	89	162	104	13	1	0	0	0	0	0	0	0	0	0	0	0	**393**
1:00 PM	17	58	103	149	19	2	0	0	0	0	0	0	0	0	0	0	0	**348**
2:00 PM	15	56	129	111	34	1	0	0	0	0	0	0	0	0	0	0	0	**346**
3:00 PM	6	47	132	135	28	2	0	0	0	0	0	0	0	0	0	0	0	**350**
4:00 PM	20	89	99	114	26	3	0	0	0	0	0	0	0	0	0	0	0	**351**
5:00 PM	11	53	119	125	27	4	0	0	0	0	0	0	0	0	0	0	0	**339**
6:00 PM	6	29	73	85	32	1	1	0	0	0	0	0	0	0	0	0	0	**227**
7:00 PM	37	96	42	21	6	2	0	0	0	0	0	0	0	0	0	0	0	**204**
8:00 PM	6	67	62	12	5	2	0	0	0	0	0	0	0	0	0	0	0	**154**
9:00 PM	9	67	58	9	4	1	0	0	0	0	0	0	0	0	0	0	0	**148**
10:00 PM	4	22	33	14	6	5	0	2	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	1	13	14	8	3	3	0	0	0	0	0	0	0	0	0	0	0	**42**
Total	**195**	**821**	**1,468**	**1,519**	**471**	**74**	**7**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**4.3%**	**18.0%**	**32.2%**	**33.3%**	**10.3%**	**1.6%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	19.5	mph	Mean (Average) Speed	19.1	mph
85th Percentile	24.4	mph	10 mph Pace	14.7 - 24.7	mph
95th Percentile	27.4	mph	Percent in Pace	65.6	%

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Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Wednesday, May 8, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	4	7	0	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	1	0	1	5	0	3	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	1	1	1	5	1	0	0	0	0	0	0	0	0	0	0	0	**10**
3:00 AM	0	2	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0	**9**
4:00 AM	2	2	6	9	9	3	0	0	0	0	0	0	0	0	0	0	0	**31**
5:00 AM	1	3	11	37	13	5	1	0	0	0	0	0	0	0	0	0	0	**71**
6:00 AM	1	0	15	37	40	17	2	0	0	0	0	0	0	0	0	0	0	**112**
7:00 AM	1	13	47	96	71	10	2	0	0	0	0	0	0	0	0	0	0	**240**
8:00 AM	3	13	53	148	56	8	0	0	0	0	0	0	0	0	0	0	0	**281**
9:00 AM	3	8	60	106	48	9	0	0	0	0	0	0	0	0	0	0	0	**234**
10:00 AM	22	32	105	116	24	1	0	0	0	0	0	0	0	0	0	0	0	**300**
11:00 AM	2	23	111	152	33	3	0	0	0	0	0	0	0	0	0	0	0	**324**
12:00 PM	20	52	131	100	24	4	0	0	0	0	0	0	0	0	0	0	0	**331**
1:00 PM	13	62	146	103	19	0	0	0	0	0	0	0	0	0	0	0	0	**343**
2:00 PM	4	23	131	131	43	2	0	0	0	0	0	0	0	0	0	0	0	**334**
3:00 PM	6	35	144	171	31	0	0	0	0	0	0	0	0	0	0	0	0	**387**
4:00 PM	13	53	136	99	29	2	0	0	0	0	0	0	0	0	0	0	0	**332**
5:00 PM	14	67	128	134	24	2	0	0	0	0	0	0	0	0	0	0	0	**369**
6:00 PM	16	55	113	113	30	1	0	0	0	0	0	0	0	0	0	0	0	**328**
7:00 PM	8	31	106	55	10	1	0	0	0	0	0	0	0	0	0	0	0	**211**
8:00 PM	2	13	79	60	12	1	0	0	0	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	9	27	38	19	3	0	0	0	0	0	0	0	0	0	0	0	**103**
10:00 PM	0	5	9	27	12	3	0	0	0	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	0	8	9	3	4	1	0	0	0	0	0	0	0	0	0	0	**25**
Total	**140**	**502**	**1,570**	**1,754**	**564**	**84**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,622**
Percent	**3.0%**	**10.9%**	**34.0%**	**37.9%**	**12.2%**	**1.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	20.2	mph	Mean (Average) Speed	20.1	mph
85th Percentile	24.8	mph	10 mph Pace	15.4 - 25.4	mph
95th Percentile	27.8	mph	Percent in Pace	72.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	1	3	17	12	2	1	0	0	0	0	0	0	0	0	0	0	**37**
1:00 AM	0	0	1	7	8	0	1	0	0	0	0	0	0	0	0	0	0	**17**
2:00 AM	0	2	3	2	1	2	0	0	0	0	0	0	0	0	0	0	0	**10**
3:00 AM	1	0	3	3	0	6	1	0	0	0	0	0	0	0	0	0	0	**14**
4:00 AM	1	1	2	5	0	3	1	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	2	13	15	14	1	1	1	0	0	0	0	0	0	0	0	0	**48**
6:00 AM	0	3	8	18	25	8	1	0	0	0	0	0	0	0	0	0	0	**63**
7:00 AM	4	12	40	104	56	9	0	0	0	0	0	0	0	0	0	0	0	**225**
8:00 AM	2	25	75	137	47	4	0	0	0	0	0	0	0	0	0	0	0	**290**
9:00 AM	8	27	77	109	38	3	0	0	0	0	0	0	0	0	0	0	0	**262**
10:00 AM	7	19	89	121	29	7	0	0	0	0	0	0	0	0	0	0	0	**272**
11:00 AM	14	43	128	94	38	2	0	0	0	0	0	0	0	0	0	0	0	**319**
12:00 PM	24	89	162	104	13	1	0	0	0	0	0	0	0	0	0	0	0	**393**
1:00 PM	17	58	103	149	19	2	0	0	0	0	0	0	0	0	0	0	0	**348**
2:00 PM	15	56	129	111	34	1	0	0	0	0	0	0	0	0	0	0	0	**346**
3:00 PM	6	47	132	135	28	2	0	0	0	0	0	0	0	0	0	0	0	**350**
4:00 PM	20	89	99	114	26	3	0	0	0	0	0	0	0	0	0	0	0	**351**
5:00 PM	11	53	119	125	27	4	0	0	0	0	0	0	0	0	0	0	0	**339**
6:00 PM	6	29	73	85	32	1	1	0	0	0	0	0	0	0	0	0	0	**227**
7:00 PM	37	96	42	21	6	2	0	0	0	0	0	0	0	0	0	0	0	**204**
8:00 PM	6	67	62	12	5	2	0	0	0	0	0	0	0	0	0	0	0	**154**
9:00 PM	9	67	58	9	4	1	0	0	0	0	0	0	0	0	0	0	0	**148**
10:00 PM	4	22	33	14	6	5	0	2	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	1	13	14	8	3	3	0	0	0	0	0	0	0	0	0	0	0	**42**
Total	**195**	**821**	**1,468**	**1,519**	**471**	**74**	**7**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,558**
Percent	**4.3%**	**18.0%**	**32.2%**	**33.3%**	**10.3%**	**1.6%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	19.5	mph	Mean (Average) Speed	19.1	mph
85th Percentile	24.4	mph	10 mph Pace	14.7 - 24.7	mph
95th Percentile	27.4	mph	Percent in Pace	65.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 06

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	4	7	0	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	1	0	1	5	0	3	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	1	1	1	5	1	0	0	0	0	0	0	0	0	0	0	0	**10**
3:00 AM	0	2	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0	**9**
4:00 AM	2	2	6	9	9	3	0	0	0	0	0	0	0	0	0	0	0	**31**
5:00 AM	1	3	11	37	13	5	1	0	0	0	0	0	0	0	0	0	0	**71**
6:00 AM	1	0	15	37	40	17	2	0	0	0	0	0	0	0	0	0	0	**112**
7:00 AM	1	13	47	96	71	10	2	0	0	0	0	0	0	0	0	0	0	**240**
8:00 AM	3	13	53	148	56	8	0	0	0	0	0	0	0	0	0	0	0	**281**
9:00 AM	3	8	60	106	48	9	0	0	0	0	0	0	0	0	0	0	0	**234**
10:00 AM	22	32	105	116	24	1	0	0	0	0	0	0	0	0	0	0	0	**300**
11:00 AM	2	23	111	152	33	3	0	0	0	0	0	0	0	0	0	0	0	**324**
12:00 PM	20	52	131	100	24	4	0	0	0	0	0	0	0	0	0	0	0	**331**
1:00 PM	13	62	146	103	19	0	0	0	0	0	0	0	0	0	0	0	0	**343**
2:00 PM	4	23	131	131	43	2	0	0	0	0	0	0	0	0	0	0	0	**334**
3:00 PM	6	35	144	171	31	0	0	0	0	0	0	0	0	0	0	0	0	**387**
4:00 PM	13	53	136	99	29	2	0	0	0	0	0	0	0	0	0	0	0	**332**
5:00 PM	14	67	128	134	24	2	0	0	0	0	0	0	0	0	0	0	0	**369**
6:00 PM	16	55	113	113	30	1	0	0	0	0	0	0	0	0	0	0	0	**328**
7:00 PM	8	31	106	55	10	1	0	0	0	0	0	0	0	0	0	0	0	**211**
8:00 PM	2	13	79	60	12	1	0	0	0	0	0	0	0	0	0	0	0	**167**
9:00 PM	7	9	27	38	19	3	0	0	0	0	0	0	0	0	0	0	0	**103**
10:00 PM	0	5	9	27	12	3	0	0	0	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	0	8	9	3	4	1	0	0	0	0	0	0	0	0	0	0	**25**
Total	**140**	**502**	**1,570**	**1,754**	**564**	**84**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,622**
Percent	**3.0%**	**10.9%**	**34.0%**	**37.9%**	**12.2%**	**1.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	20.2	mph	Mean (Average) Speed	20.1	mph
85th Percentile	24.8	mph	10 mph Pace	15.4 - 25.4	mph
95th Percentile	27.8	mph	Percent in Pace	72.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 4th St, B/W 2nd-Marquard & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 06

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	37	14	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	14	51
1:00 AM	17	10	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	10	27
2:00 AM	10	10	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	20
3:00 AM	14	9	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	9	23
4:00 AM	13	31	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	31	44
5:00 AM	48	71	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	71	119
6:00 AM	63	112	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	112	175
7:00 AM	225	240	465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	240	465
8:00 AM	290	281	571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	290	281	571
9:00 AM	262	234	496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262	234	496
10:00 AM	272	300	572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	272	300	572
11:00 AM	**319**	**324**	**643**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**319**	**324**	**643**
12:00 PM	**393**	331	724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**393**	331	724
1:00 PM	348	343	691	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	348	343	691
2:00 PM	346	334	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	346	334	680
3:00 PM	350	**387**	**737**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	**387**	**737**
4:00 PM	351	332	683	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	351	332	683
5:00 PM	339	369	708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	339	369	708
6:00 PM	227	328	555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	328	555
7:00 PM	204	211	415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	211	415
8:00 PM	154	167	321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	167	321
9:00 PM	148	103	251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	103	251
10:00 PM	86	56	142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	56	142
11:00 PM	42	25	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	25	67
Total	4,558	4,622	9,180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,558	4,622	9,180
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	11:00	11:00
Vol.	319	324	643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	319	324	643
PM Peak	12:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	15:00	15:00
Vol.	393	387	737	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	393	387	737

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: 5th Ave, B/W H St & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 07

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	15	1,086	141	0	22	33	0	1	0	0	0	0	2	1,300
Percent	1.2%	83.5%	10.8%	0.0%	1.7%	2.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	100%
Westbound	35	1,730	343	0	30	26	0	4	0	1	0	0	1	2,170
Percent	1.6%	79.7%	15.8%	0.0%	1.4%	1.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	50	2,816	484	0	52	59	0	5	0	1	0	0	3	3,470
Percent	1.4%	81.2%	13.9%	0.0%	1.5%	1.7%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	13	2	0	1	0	0	0	0	0	0	0	0	**17**
7:00 AM	1	58	11	0	2	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	46	8	0	0	1	0	0	0	0	0	0	1	**56**
9:00 AM	0	54	3	0	4	1	0	0	0	0	0	0	0	**62**
10:00 AM	0	54	6	0	2	0	0	0	0	0	0	0	0	**62**
11:00 AM	1	59	9	0	1	4	0	0	0	0	0	0	0	**74**
12:00 PM	1	93	15	0	0	6	0	0	0	0	0	0	0	**115**
1:00 PM	1	90	11	0	1	0	0	1	0	0	0	0	0	**104**
2:00 PM	0	98	11	0	1	6	0	0	0	0	0	0	0	**116**
3:00 PM	2	82	17	0	1	1	0	0	0	0	0	0	0	**103**
4:00 PM	1	109	15	0	1	6	0	0	0	0	0	0	1	**133**
5:00 PM	2	118	8	0	2	4	0	0	0	0	0	0	0	**134**
6:00 PM	1	79	6	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	1	48	9	0	2	1	0	0	0	0	0	0	0	**61**
8:00 PM	0	30	4	0	0	2	0	0	0	0	0	0	0	**36**
9:00 PM	1	27	2	0	1	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	8	4	0	0	1	0	0	0	0	0	0	0	**14**
11:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**15**	**1,086**	**141**	**0**	**22**	**33**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1,300**
Percent	**1.2%**	**83.5%**	**10.8%**	**0.0%**	**1.7%**	**2.5%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	40	5	0	0	1	0	0	0	0	0	0	0	**46**
7:00 AM	2	137	31	0	2	3	0	1	0	0	0	0	0	**176**
8:00 AM	3	138	26	0	0	4	0	1	0	0	0	0	0	**172**
9:00 AM	1	79	13	0	1	1	0	0	0	0	0	0	0	**95**
10:00 AM	3	90	19	0	5	0	0	0	0	0	0	0	0	**117**
11:00 AM	0	93	16	0	1	2	0	0	0	0	0	0	0	**112**
12:00 PM	2	100	29	0	3	1	0	0	0	0	0	0	0	**135**
1:00 PM	1	95	18	0	6	1	0	0	0	0	0	0	0	**121**
2:00 PM	1	138	29	0	0	2	0	0	0	1	0	0	0	**171**
3:00 PM	4	130	42	0	5	1	0	0	0	0	0	0	0	**182**
4:00 PM	9	194	24	0	3	4	0	0	0	0	0	0	1	**235**
5:00 PM	0	170	26	0	1	1	0	2	0	0	0	0	0	**200**
6:00 PM	2	125	32	0	0	3	0	0	0	0	0	0	0	**162**
7:00 PM	2	85	13	0	1	1	0	0	0	0	0	0	0	**102**
8:00 PM	0	31	9	0	0	1	0	0	0	0	0	0	0	**41**
9:00 PM	5	33	4	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
Total	**35**	**1,730**	**343**	**0**	**30**	**26**	**0**	**4**	**0**	**1**	**0**	**0**	**1**	**2,170**
Percent	**1.6%**	**79.7%**	**15.8%**	**0.0%**	**1.4%**	**1.2%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	13	2	0	1	0	0	0	0	0	0	0	0	**17**
7:00 AM	1	58	11	0	2	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	46	8	0	0	1	0	0	0	0	0	0	1	**56**
9:00 AM	0	54	3	0	4	1	0	0	0	0	0	0	0	**62**
10:00 AM	0	54	6	0	2	0	0	0	0	0	0	0	0	**62**
11:00 AM	1	59	9	0	1	4	0	0	0	0	0	0	0	**74**
12:00 PM	1	93	15	0	0	6	0	0	0	0	0	0	0	**115**
1:00 PM	1	90	11	0	1	0	0	1	0	0	0	0	0	**104**
2:00 PM	0	98	11	0	1	6	0	0	0	0	0	0	0	**116**
3:00 PM	2	82	17	0	1	1	0	0	0	0	0	0	0	**103**
4:00 PM	1	109	15	0	1	6	0	0	0	0	0	0	1	**133**
5:00 PM	2	118	8	0	2	4	0	0	0	0	0	0	0	**134**
6:00 PM	1	79	6	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	1	48	9	0	2	1	0	0	0	0	0	0	0	**61**
8:00 PM	0	30	4	0	0	2	0	0	0	0	0	0	0	**36**
9:00 PM	1	27	2	0	1	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	8	4	0	0	1	0	0	0	0	0	0	0	**14**
11:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**15**	**1,086**	**141**	**0**	**22**	**33**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1,300**
Percent	**1.2%**	**83.5%**	**10.8%**	**0.0%**	**1.7%**	**2.5%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	40	5	0	0	1	0	0	0	0	0	0	0	**46**
7:00 AM	2	137	31	0	2	3	0	1	0	0	0	0	0	**176**
8:00 AM	3	138	26	0	0	4	0	1	0	0	0	0	0	**172**
9:00 AM	1	79	13	0	1	1	0	0	0	0	0	0	0	**95**
10:00 AM	3	90	19	0	5	0	0	0	0	0	0	0	0	**117**
11:00 AM	0	93	16	0	1	2	0	0	0	0	0	0	0	**112**
12:00 PM	2	100	29	0	3	1	0	0	0	0	0	0	0	**135**
1:00 PM	1	95	18	0	6	1	0	0	0	0	0	0	0	**121**
2:00 PM	1	138	29	0	0	2	0	0	0	1	0	0	0	**171**
3:00 PM	4	130	42	0	5	1	0	0	0	0	0	0	0	**182**
4:00 PM	9	194	24	0	3	4	0	0	0	0	0	0	1	**235**
5:00 PM	0	170	26	0	1	1	0	2	0	0	0	0	0	**200**
6:00 PM	2	125	32	0	0	3	0	0	0	0	0	0	0	**162**
7:00 PM	2	85	13	0	1	1	0	0	0	0	0	0	0	**102**
8:00 PM	0	31	9	0	0	1	0	0	0	0	0	0	0	**41**
9:00 PM	5	33	4	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
Total	**35**	**1,730**	**343**	**0**	**30**	**26**	**0**	**4**	**0**	**1**	**0**	**0**	**1**	**2,170**
Percent	**1.6%**	**79.7%**	**15.8%**	**0.0%**	**1.4%**	**1.2%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	13	2	0	1	0	0	0	0	0	0	0	0	**17**
7:00 AM	1	58	11	0	2	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	46	8	0	0	1	0	0	0	0	0	0	1	**56**
9:00 AM	0	54	3	0	4	1	0	0	0	0	0	0	0	**62**
10:00 AM	0	54	6	0	2	0	0	0	0	0	0	0	0	**62**
11:00 AM	1	59	9	0	1	4	0	0	0	0	0	0	0	**74**
12:00 PM	1	93	15	0	0	6	0	0	0	0	0	0	0	**115**
1:00 PM	1	90	11	0	1	0	0	1	0	0	0	0	0	**104**
2:00 PM	0	98	11	0	1	6	0	0	0	0	0	0	0	**116**
3:00 PM	2	82	17	0	1	1	0	0	0	0	0	0	0	**103**
4:00 PM	1	109	15	0	1	6	0	0	0	0	0	0	1	**133**
5:00 PM	2	118	8	0	2	4	0	0	0	0	0	0	0	**134**
6:00 PM	1	79	6	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	1	48	9	0	2	1	0	0	0	0	0	0	0	**61**
8:00 PM	0	30	4	0	0	2	0	0	0	0	0	0	0	**36**
9:00 PM	1	27	2	0	1	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	8	4	0	0	1	0	0	0	0	0	0	0	**14**
11:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**15**	**1,086**	**141**	**0**	**22**	**33**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1,300**
Percent	**1.2%**	**83.5%**	**10.8%**	**0.0%**	**1.7%**	**2.5%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	40	5	0	0	1	0	0	0	0	0	0	0	**46**
7:00 AM	2	137	31	0	2	3	0	1	0	0	0	0	0	**176**
8:00 AM	3	138	26	0	0	4	0	1	0	0	0	0	0	**172**
9:00 AM	1	79	13	0	1	1	0	0	0	0	0	0	0	**95**
10:00 AM	3	90	19	0	5	0	0	0	0	0	0	0	0	**117**
11:00 AM	0	93	16	0	1	2	0	0	0	0	0	0	0	**112**
12:00 PM	2	100	29	0	3	1	0	0	0	0	0	0	0	**135**
1:00 PM	1	95	18	0	6	1	0	0	0	0	0	0	0	**121**
2:00 PM	1	138	29	0	0	2	0	0	0	1	0	0	0	**171**
3:00 PM	4	130	42	0	5	1	0	0	0	0	0	0	0	**182**
4:00 PM	9	194	24	0	3	4	0	0	0	0	0	0	1	**235**
5:00 PM	0	170	26	0	1	1	0	2	0	0	0	0	0	**200**
6:00 PM	2	125	32	0	0	3	0	0	0	0	0	0	0	**162**
7:00 PM	2	85	13	0	1	1	0	0	0	0	0	0	0	**102**
8:00 PM	0	31	9	0	0	1	0	0	0	0	0	0	0	**41**
9:00 PM	5	33	4	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
Total	**35**	**1,730**	**343**	**0**	**30**	**26**	**0**	**4**	**0**	**1**	**0**	**0**	**1**	**2,170**
Percent	**1.6%**	**79.7%**	**15.8%**	**0.0%**	**1.4%**	**1.2%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: 5th Ave, B/W H St & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 07

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	9	30	134	616	444	62	5	0	0	0	0	0	0	0	0	0	0	1,300
Percent	0.7%	2.3%	10.3%	47.4%	34.2%	4.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	20	28	189	922	849	143	17	2	0	0	0	0	0	0	0	0	0	2,170
Percent	0.9%	1.3%	8.7%	42.5%	39.1%	6.6%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	29	58	323	1,538	1,293	205	22	2	0	0	0	0	0	0	0	0	0	3,470
Percent	0.8%	1.7%	9.3%	44.3%	37.3%	5.9%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	24.2	mph	Mean (Average) Speed	23.9	mph
85th Percentile	27.7	mph	10 mph Pace	19.3 - 29.3	mph
95th Percentile	30.1	mph	Percent in Pace	81.6	%
Westbound			**Westbound**		
50th Percentile (Median)	24.7	mph	Mean (Average) Speed	24.6	mph
85th Percentile	28.3	mph	10 mph Pace	19.5 - 29.5	mph
95th Percentile	31.0	mph	Percent in Pace	81.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Wednesday, May 8, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	0	1	0	3	11	2	0	0	0	0	0	0	0	0	0	0	0	**17**
7:00 AM	0	1	7	34	23	7	0	0	0	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	0	4	26	19	7	0	0	0	0	0	0	0	0	0	0	0	**56**
9:00 AM	1	3	5	27	23	3	0	0	0	0	0	0	0	0	0	0	0	**62**
10:00 AM	0	4	4	30	17	6	1	0	0	0	0	0	0	0	0	0	0	**62**
11:00 AM	0	5	12	25	31	1	0	0	0	0	0	0	0	0	0	0	0	**74**
12:00 PM	1	1	10	49	48	6	0	0	0	0	0	0	0	0	0	0	0	**115**
1:00 PM	1	1	7	45	43	4	3	0	0	0	0	0	0	0	0	0	0	**104**
2:00 PM	0	1	12	49	50	4	0	0	0	0	0	0	0	0	0	0	0	**116**
3:00 PM	1	1	9	64	24	4	0	0	0	0	0	0	0	0	0	0	0	**103**
4:00 PM	0	3	24	71	30	5	0	0	0	0	0	0	0	0	0	0	0	**133**
5:00 PM	3	1	21	68	36	5	0	0	0	0	0	0	0	0	0	0	0	**134**
6:00 PM	0	1	4	46	32	3	0	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	0	2	2	31	24	2	0	0	0	0	0	0	0	0	0	0	0	**61**
8:00 PM	0	1	4	15	14	2	0	0	0	0	0	0	0	0	0	0	0	**36**
9:00 PM	1	0	2	22	6	0	0	0	0	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	1	4	6	1	1	0	0	0	0	0	0	0	0	0	0	0	**14**
11:00 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**9**	**30**	**134**	**616**	**444**	**62**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,300**
Percent	**0.7%**	**2.3%**	**10.3%**	**47.4%**	**34.2%**	**4.8%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	24.2	mph	Mean (Average) Speed	23.9	mph
85th Percentile	27.7	mph	10 mph Pace	19.3 - 29.3	mph
95th Percentile	30.1	mph	Percent in Pace	81.6	%

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Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Wednesday, May 8, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	3	6	2	0	0	0	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	0	3	17	20	5	1	0	0	0	0	0	0	0	0	0	0	**46**
7:00 AM	1	2	11	83	65	12	2	0	0	0	0	0	0	0	0	0	0	**176**
8:00 AM	3	2	14	59	78	12	4	0	0	0	0	0	0	0	0	0	0	**172**
9:00 AM	1	3	9	29	44	9	0	0	0	0	0	0	0	0	0	0	0	**95**
10:00 AM	2	4	13	47	43	8	0	0	0	0	0	0	0	0	0	0	0	**117**
11:00 AM	1	0	12	40	48	10	0	1	0	0	0	0	0	0	0	0	0	**112**
12:00 PM	2	2	6	52	63	10	0	0	0	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	0	9	50	55	5	2	0	0	0	0	0	0	0	0	0	0	**121**
2:00 PM	1	4	15	76	64	10	1	0	0	0	0	0	0	0	0	0	0	**171**
3:00 PM	4	1	20	62	81	12	2	0	0	0	0	0	0	0	0	0	0	**182**
4:00 PM	2	3	24	124	67	14	0	1	0	0	0	0	0	0	0	0	0	**235**
5:00 PM	0	2	15	102	69	10	2	0	0	0	0	0	0	0	0	0	0	**200**
6:00 PM	2	0	20	71	57	12	0	0	0	0	0	0	0	0	0	0	0	**162**
7:00 PM	0	1	11	53	31	5	1	0	0	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	1	4	14	20	0	2	0	0	0	0	0	0	0	0	0	0	**41**
9:00 PM	1	2	2	20	15	2	0	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	0	0	8	11	0	0	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	0	1	8	8	1	0	0	0	0	0	0	0	0	0	0	0	**18**
Total	**20**	**28**	**189**	**922**	**849**	**143**	**17**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,170**
Percent	**0.9%**	**1.3%**	**8.7%**	**42.5%**	**39.1%**	**6.6%**	**0.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	24.7	mph	Mean (Average) Speed	24.6	mph
85th Percentile	28.3	mph	10 mph Pace	19.5 - 29.5	mph
95th Percentile	31.0	mph	Percent in Pace	81.84	%

Project Manager: (415) 310-6469
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Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	0	1	0	3	11	2	0	0	0	0	0	0	0	0	0	0	0	**17**
7:00 AM	0	1	7	34	23	7	0	0	0	0	0	0	0	0	0	0	0	**72**
8:00 AM	0	0	4	26	19	7	0	0	0	0	0	0	0	0	0	0	0	**56**
9:00 AM	1	3	5	27	23	3	0	0	0	0	0	0	0	0	0	0	0	**62**
10:00 AM	0	4	4	30	17	6	1	0	0	0	0	0	0	0	0	0	0	**62**
11:00 AM	0	5	12	25	31	1	0	0	0	0	0	0	0	0	0	0	0	**74**
12:00 PM	1	1	10	49	48	6	0	0	0	0	0	0	0	0	0	0	0	**115**
1:00 PM	1	1	7	45	43	4	3	0	0	0	0	0	0	0	0	0	0	**104**
2:00 PM	0	1	12	49	50	4	0	0	0	0	0	0	0	0	0	0	0	**116**
3:00 PM	1	1	9	64	24	4	0	0	0	0	0	0	0	0	0	0	0	**103**
4:00 PM	0	3	24	71	30	5	0	0	0	0	0	0	0	0	0	0	0	**133**
5:00 PM	3	1	21	68	36	5	0	0	0	0	0	0	0	0	0	0	0	**134**
6:00 PM	0	1	4	46	32	3	0	0	0	0	0	0	0	0	0	0	0	**86**
7:00 PM	0	2	2	31	24	2	0	0	0	0	0	0	0	0	0	0	0	**61**
8:00 PM	0	1	4	15	14	2	0	0	0	0	0	0	0	0	0	0	0	**36**
9:00 PM	1	0	2	22	6	0	0	0	0	0	0	0	0	0	0	0	0	**31**
10:00 PM	1	1	4	6	1	1	0	0	0	0	0	0	0	0	0	0	0	**14**
11:00 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Total	**9**	**30**	**134**	**616**	**444**	**62**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,300**
Percent	**0.7%**	**2.3%**	**10.3%**	**47.4%**	**34.2%**	**4.8%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	24.2	mph	Mean (Average) Speed	23.9	mph
85th Percentile	27.7	mph	10 mph Pace	19.3 - 29.3	mph
95th Percentile	30.1	mph	Percent in Pace	81.6	%

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 07

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	3	6	2	0	0	0	0	0	0	0	0	0	0	0	**11**
6:00 AM	0	0	3	17	20	5	1	0	0	0	0	0	0	0	0	0	0	**46**
7:00 AM	1	2	11	83	65	12	2	0	0	0	0	0	0	0	0	0	0	**176**
8:00 AM	3	2	14	59	78	12	4	0	0	0	0	0	0	0	0	0	0	**172**
9:00 AM	1	3	9	29	44	9	0	0	0	0	0	0	0	0	0	0	0	**95**
10:00 AM	2	4	13	47	43	8	0	0	0	0	0	0	0	0	0	0	0	**117**
11:00 AM	1	0	12	40	48	10	0	1	0	0	0	0	0	0	0	0	0	**112**
12:00 PM	2	2	6	52	63	10	0	0	0	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	0	9	50	55	5	2	0	0	0	0	0	0	0	0	0	0	**121**
2:00 PM	1	4	15	76	64	10	1	0	0	0	0	0	0	0	0	0	0	**171**
3:00 PM	4	1	20	62	81	12	2	0	0	0	0	0	0	0	0	0	0	**182**
4:00 PM	2	3	24	124	67	14	0	1	0	0	0	0	0	0	0	0	0	**235**
5:00 PM	0	2	15	102	69	10	2	0	0	0	0	0	0	0	0	0	0	**200**
6:00 PM	2	0	20	71	57	12	0	0	0	0	0	0	0	0	0	0	0	**162**
7:00 PM	0	1	11	53	31	5	1	0	0	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	1	4	14	20	0	2	0	0	0	0	0	0	0	0	0	0	**41**
9:00 PM	1	2	2	20	15	2	0	0	0	0	0	0	0	0	0	0	0	**42**
10:00 PM	0	0	0	8	11	0	0	0	0	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	0	1	8	8	1	0	0	0	0	0	0	0	0	0	0	0	**18**
Total	**20**	**28**	**189**	**922**	**849**	**143**	**17**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,170**
Percent	**0.9%**	**1.3%**	**8.7%**	**42.5%**	**39.1%**	**6.6%**	**0.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	24.7	mph	Mean (Average) Speed	24.6	mph
85th Percentile	28.3	mph	10 mph Pace	19.5 - 29.5	mph
95th Percentile	31.0	mph	Percent in Pace	81.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: 5th Ave, B/W H St & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 07

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	5	6	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	11
1:00 AM	3	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4
2:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
5:00 AM	8	11	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	11	19
6:00 AM	17	46	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	46	63
7:00 AM	72	**176**	**248**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	**176**	**248**
8:00 AM	56	172	228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	172	228
9:00 AM	62	95	157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	95	157
10:00 AM	62	117	179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	117	179
11:00 AM	**74**	112	186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**74**	112	186
12:00 PM	115	135	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	135	250
1:00 PM	104	121	225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	121	225
2:00 PM	116	171	287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	171	287
3:00 PM	103	182	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	182	285
4:00 PM	133	**235**	**368**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	**235**	**368**
5:00 PM	**134**	200	334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**134**	200	334
6:00 PM	86	162	248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	162	248
7:00 PM	61	102	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	102	163
8:00 PM	36	41	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	41	77
9:00 PM	31	42	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	42	73
10:00 PM	14	19	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	19	33
11:00 PM	3	18	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	18	21
Total	1,300	2,170	3,470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,300	2,170	3,470
Percent	37%	63%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37%	63%	-
AM Peak	11:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	07:00
Vol.	74	176	248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	176	248
PM Peak	17:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	16:00
Vol.	134	235	368	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	235	368

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: A St, B/W 2nd St & 5th St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 08

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	31	2,130	274	0	69	8	0	1	0	1	0	0	0	2,514
Percent	1.2%	84.7%	10.9%	0.0%	2.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	50	1,362	273	0	49	23	0	0	0	1	0	0	0	1,758
Percent	2.8%	77.5%	15.5%	0.0%	2.8%	1.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	81	3,492	547	0	118	31	0	1	0	2	0	0	0	4,272
Percent	1.9%	81.7%	12.8%	0.0%	2.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	10	1	0	1	1	0	0	0	0	0	0	0	**13**
6:00 AM	0	37	7	0	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	85	16	0	5	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	149	17	0	4	2	0	0	0	0	0	0	0	**172**
9:00 AM	1	119	18	0	8	0	0	0	0	0	0	0	0	**146**
10:00 AM	2	143	20	0	0	2	0	0	0	0	0	0	0	**167**
11:00 AM	3	164	22	0	5	2	0	0	0	0	0	0	0	**196**
12:00 PM	3	196	25	0	8	0	0	0	0	0	0	0	0	**232**
1:00 PM	3	165	19	0	3	0	0	0	0	0	0	0	0	**190**
2:00 PM	2	183	21	0	7	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	190	22	0	5	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	156	21	0	7	0	0	1	0	0	0	0	0	**189**
5:00 PM	3	183	20	0	7	1	0	0	0	0	0	0	0	**214**
6:00 PM	4	123	18	0	2	0	0	0	0	1	0	0	0	**148**
7:00 PM	2	84	12	0	3	0	0	0	0	0	0	0	0	**101**
8:00 PM	1	57	2	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	1	33	2	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	17	6	0	2	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
Total	**31**	**2,130**	**274**	**0**	**69**	**8**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2,514**
Percent	**1.2%**	**84.7%**	**10.9%**	**0.0%**	**2.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	3	4	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	2	15	19	0	1	3	0	0	0	0	0	0	0	**40**
7:00 AM	5	78	22	0	5	0	0	0	0	0	0	0	0	**110**
8:00 AM	4	67	14	0	5	2	0	0	0	0	0	0	0	**92**
9:00 AM	2	73	16	0	2	1	0	0	0	0	0	0	0	**94**
10:00 AM	5	67	15	0	5	4	0	0	0	1	0	0	0	**97**
11:00 AM	2	83	16	0	4	3	0	0	0	0	0	0	0	**108**
12:00 PM	3	102	25	0	3	2	0	0	0	0	0	0	0	**135**
1:00 PM	4	98	19	0	5	2	0	0	0	0	0	0	0	**128**
2:00 PM	7	111	16	0	2	2	0	0	0	0	0	0	0	**138**
3:00 PM	2	114	24	0	2	0	0	0	0	0	0	0	0	**142**
4:00 PM	5	121	20	0	5	2	0	0	0	0	0	0	0	**153**
5:00 PM	2	148	21	0	4	1	0	0	0	0	0	0	0	**176**
6:00 PM	1	98	9	0	3	0	0	0	0	0	0	0	0	**111**
7:00 PM	3	63	10	0	1	0	0	0	0	0	0	0	0	**77**
8:00 PM	1	51	9	0	0	1	0	0	0	0	0	0	0	**62**
9:00 PM	1	35	5	0	2	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
Total	**50**	**1,362**	**273**	**0**	**49**	**23**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1,758**
Percent	**2.8%**	**77.5%**	**15.5%**	**0.0%**	**2.8%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	10	1	0	1	1	0	0	0	0	0	0	0	**13**
6:00 AM	0	37	7	0	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	85	16	0	5	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	149	17	0	4	2	0	0	0	0	0	0	0	**172**
9:00 AM	1	119	18	0	8	0	0	0	0	0	0	0	0	**146**
10:00 AM	2	143	20	0	0	2	0	0	0	0	0	0	0	**167**
11:00 AM	3	164	22	0	5	2	0	0	0	0	0	0	0	**196**
12:00 PM	3	196	25	0	8	0	0	0	0	0	0	0	0	**232**
1:00 PM	3	165	19	0	3	0	0	0	0	0	0	0	0	**190**
2:00 PM	2	183	21	0	7	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	190	22	0	5	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	156	21	0	7	0	0	1	0	0	0	0	0	**189**
5:00 PM	3	183	20	0	7	1	0	0	0	0	0	0	0	**214**
6:00 PM	4	123	18	0	2	0	0	0	0	1	0	0	0	**148**
7:00 PM	2	84	12	0	3	0	0	0	0	0	0	0	0	**101**
8:00 PM	1	57	2	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	1	33	2	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	17	6	0	2	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
Total	**31**	**2,130**	**274**	**0**	**69**	**8**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2,514**
Percent	**1.2%**	**84.7%**	**10.9%**	**0.0%**	**2.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	3	4	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	2	15	19	0	1	3	0	0	0	0	0	0	0	**40**
7:00 AM	5	78	22	0	5	0	0	0	0	0	0	0	0	**110**
8:00 AM	4	67	14	0	5	2	0	0	0	0	0	0	0	**92**
9:00 AM	2	73	16	0	2	1	0	0	0	0	0	0	0	**94**
10:00 AM	5	67	15	0	5	4	0	0	0	1	0	0	0	**97**
11:00 AM	2	83	16	0	4	3	0	0	0	0	0	0	0	**108**
12:00 PM	3	102	25	0	3	2	0	0	0	0	0	0	0	**135**
1:00 PM	4	98	19	0	5	2	0	0	0	0	0	0	0	**128**
2:00 PM	7	111	16	0	2	2	0	0	0	0	0	0	0	**138**
3:00 PM	2	114	24	0	2	0	0	0	0	0	0	0	0	**142**
4:00 PM	5	121	20	0	5	2	0	0	0	0	0	0	0	**153**
5:00 PM	2	148	21	0	4	1	0	0	0	0	0	0	0	**176**
6:00 PM	1	98	9	0	3	0	0	0	0	0	0	0	0	**111**
7:00 PM	3	63	10	0	1	0	0	0	0	0	0	0	0	**77**
8:00 PM	1	51	9	0	0	1	0	0	0	0	0	0	0	**62**
9:00 PM	1	35	5	0	2	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
Total	**50**	**1,362**	**273**	**0**	**49**	**23**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1,758**
Percent	**2.8%**	**77.5%**	**15.5%**	**0.0%**	**2.8%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	10	1	0	1	1	0	0	0	0	0	0	0	**13**
6:00 AM	0	37	7	0	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	85	16	0	5	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	149	17	0	4	2	0	0	0	0	0	0	0	**172**
9:00 AM	1	119	18	0	8	0	0	0	0	0	0	0	0	**146**
10:00 AM	2	143	20	0	0	2	0	0	0	0	0	0	0	**167**
11:00 AM	3	164	22	0	5	2	0	0	0	0	0	0	0	**196**
12:00 PM	3	196	25	0	8	0	0	0	0	0	0	0	0	**232**
1:00 PM	3	165	19	0	3	0	0	0	0	0	0	0	0	**190**
2:00 PM	2	183	21	0	7	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	190	22	0	5	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	156	21	0	7	0	0	1	0	0	0	0	0	**189**
5:00 PM	3	183	20	0	7	1	0	0	0	0	0	0	0	**214**
6:00 PM	4	123	18	0	2	0	0	0	0	1	0	0	0	**148**
7:00 PM	2	84	12	0	3	0	0	0	0	0	0	0	0	**101**
8:00 PM	1	57	2	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	1	33	2	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	17	6	0	2	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	**18**
Total	**31**	**2,130**	**274**	**0**	**69**	**8**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2,514**
Percent	**1.2%**	**84.7%**	**10.9%**	**0.0%**	**2.7%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	3	4	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	2	15	19	0	1	3	0	0	0	0	0	0	0	**40**
7:00 AM	5	78	22	0	5	0	0	0	0	0	0	0	0	**110**
8:00 AM	4	67	14	0	5	2	0	0	0	0	0	0	0	**92**
9:00 AM	2	73	16	0	2	1	0	0	0	0	0	0	0	**94**
10:00 AM	5	67	15	0	5	4	0	0	0	1	0	0	0	**97**
11:00 AM	2	83	16	0	4	3	0	0	0	0	0	0	0	**108**
12:00 PM	3	102	25	0	3	2	0	0	0	0	0	0	0	**135**
1:00 PM	4	98	19	0	5	2	0	0	0	0	0	0	0	**128**
2:00 PM	7	111	16	0	2	2	0	0	0	0	0	0	0	**138**
3:00 PM	2	114	24	0	2	0	0	0	0	0	0	0	0	**142**
4:00 PM	5	121	20	0	5	2	0	0	0	0	0	0	0	**153**
5:00 PM	2	148	21	0	4	1	0	0	0	0	0	0	0	**176**
6:00 PM	1	98	9	0	3	0	0	0	0	0	0	0	0	**111**
7:00 PM	3	63	10	0	1	0	0	0	0	0	0	0	0	**77**
8:00 PM	1	51	9	0	0	1	0	0	0	0	0	0	0	**62**
9:00 PM	1	35	5	0	2	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
Total	**50**	**1,362**	**273**	**0**	**49**	**23**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1,758**
Percent	**2.8%**	**77.5%**	**15.5%**	**0.0%**	**2.8%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: A St, B/W 2nd St & 5th St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 08

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	165	630	1,002	588	110	14	3	0	0	0	2	0	0	0	0	0	0	2,514
Percent	6.6%	25.1%	39.9%	23.4%	4.4%	0.6%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	190	684	634	203	38	8	1	0	0	0	0	0	0	0	0	0	0	1,758
Percent	10.8%	38.9%	36.1%	11.5%	2.2%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	355	1,314	1,636	791	148	22	4	0	0	0	2	0	0	0	0	0	0	4,272
Percent	8.3%	30.8%	38.3%	18.5%	3.5%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	17.3	mph	Mean (Average) Speed	17.4	mph
85th Percentile	22.5	mph	10 mph Pace	12.6 - 22.6	mph
95th Percentile	25.1	mph	Percent in Pace	70.3	%
Southbound			**Southbound**		
50th Percentile (Median)	15.0	mph	Mean (Average) Speed	15.3	mph
85th Percentile	19.8	mph	10 mph Pace	9.6 - 19.6	mph
95th Percentile	23.3	mph	Percent in Pace	75.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	5	7	1	0	0	0	0	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	1	23	17	3	1	0	0	0	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	10	39	45	11	1	0	0	0	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	29	79	48	11	2	2	0	0	0	0	0	0	0	0	0	0	**172**
9:00 AM	3	24	64	43	11	1	0	0	0	0	0	0	0	0	0	0	0	**146**
10:00 AM	6	39	78	29	8	5	0	0	0	0	2	0	0	0	0	0	0	**167**
11:00 AM	20	71	75	25	4	1	0	0	0	0	0	0	0	0	0	0	0	**196**
12:00 PM	32	91	79	25	5	0	0	0	0	0	0	0	0	0	0	0	0	**232**
1:00 PM	13	57	78	40	2	0	0	0	0	0	0	0	0	0	0	0	0	**190**
2:00 PM	31	81	69	31	1	0	0	0	0	0	0	0	0	0	0	0	0	**213**
3:00 PM	16	49	99	49	6	0	0	0	0	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	38	80	54	12	0	1	0	0	0	0	0	0	0	0	0	0	**189**
5:00 PM	26	69	74	38	7	0	0	0	0	0	0	0	0	0	0	0	0	**214**
6:00 PM	5	33	52	47	10	1	0	0	0	0	0	0	0	0	0	0	0	**148**
7:00 PM	7	19	37	30	8	0	0	0	0	0	0	0	0	0	0	0	0	**101**
8:00 PM	0	6	30	19	3	2	0	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	0	4	13	16	3	0	0	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	4	9	9	3	0	0	0	0	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	3	8	6	1	0	0	0	0	0	0	0	0	0	0	0	0	**18**
Total	**165**	**630**	**1,002**	**588**	**110**	**14**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2,514**
Percent	**6.6%**	**25.1%**	**39.9%**	**23.4%**	**4.4%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	17.3	mph	Mean (Average) Speed	17.4	mph
85th Percentile	22.5	mph	10 mph Pace	12.6 - 22.6	mph
95th Percentile	25.1	mph	Percent in Pace	70.3	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	1	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	4	17	14	2	2	0	0	0	0	0	0	0	0	0	0	0	**40**
7:00 AM	5	25	45	26	9	0	0	0	0	0	0	0	0	0	0	0	0	**110**
8:00 AM	5	19	47	18	2	0	1	0	0	0	0	0	0	0	0	0	0	**92**
9:00 AM	8	31	40	14	0	1	0	0	0	0	0	0	0	0	0	0	0	**94**
10:00 AM	15	31	39	9	3	0	0	0	0	0	0	0	0	0	0	0	0	**97**
11:00 AM	19	49	28	8	4	0	0	0	0	0	0	0	0	0	0	0	0	**108**
12:00 PM	26	61	41	7	0	0	0	0	0	0	0	0	0	0	0	0	0	**135**
1:00 PM	28	60	34	5	0	1	0	0	0	0	0	0	0	0	0	0	0	**128**
2:00 PM	19	53	55	9	2	0	0	0	0	0	0	0	0	0	0	0	0	**138**
3:00 PM	10	60	53	17	2	0	0	0	0	0	0	0	0	0	0	0	0	**142**
4:00 PM	18	69	50	10	4	2	0	0	0	0	0	0	0	0	0	0	0	**153**
5:00 PM	13	92	50	19	2	0	0	0	0	0	0	0	0	0	0	0	0	**176**
6:00 PM	10	59	30	11	1	0	0	0	0	0	0	0	0	0	0	0	0	**111**
7:00 PM	6	23	35	12	1	0	0	0	0	0	0	0	0	0	0	0	0	**77**
8:00 PM	3	22	29	6	2	0	0	0	0	0	0	0	0	0	0	0	0	**62**
9:00 PM	2	14	17	8	1	1	0	0	0	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	9	13	4	2	0	0	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
Total	**190**	**684**	**634**	**203**	**38**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,758**
Percent	**10.8%**	**38.9%**	**36.1%**	**11.5%**	**2.2%**	**0.5%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	15.0	mph	Mean (Average) Speed	15.3	mph
85th Percentile	19.8	mph	10 mph Pace	9.6 - 19.6	mph
95th Percentile	23.3	mph	Percent in Pace	75.14	%

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	5	7	1	0	0	0	0	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	1	23	17	3	1	0	0	0	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	10	39	45	11	1	0	0	0	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	29	79	48	11	2	2	0	0	0	0	0	0	0	0	0	0	**172**
9:00 AM	3	24	64	43	11	1	0	0	0	0	0	0	0	0	0	0	0	**146**
10:00 AM	6	39	78	29	8	5	0	0	0	0	2	0	0	0	0	0	0	**167**
11:00 AM	20	71	75	25	4	1	0	0	0	0	0	0	0	0	0	0	0	**196**
12:00 PM	32	91	79	25	5	0	0	0	0	0	0	0	0	0	0	0	0	**232**
1:00 PM	13	57	78	40	2	0	0	0	0	0	0	0	0	0	0	0	0	**190**
2:00 PM	31	81	69	31	1	0	0	0	0	0	0	0	0	0	0	0	0	**213**
3:00 PM	16	49	99	49	6	0	0	0	0	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	38	80	54	12	0	1	0	0	0	0	0	0	0	0	0	0	**189**
5:00 PM	26	69	74	38	7	0	0	0	0	0	0	0	0	0	0	0	0	**214**
6:00 PM	5	33	52	47	10	1	0	0	0	0	0	0	0	0	0	0	0	**148**
7:00 PM	7	19	37	30	8	0	0	0	0	0	0	0	0	0	0	0	0	**101**
8:00 PM	0	6	30	19	3	2	0	0	0	0	0	0	0	0	0	0	0	**60**
9:00 PM	0	4	13	16	3	0	0	0	0	0	0	0	0	0	0	0	0	**36**
10:00 PM	0	4	9	9	3	0	0	0	0	0	0	0	0	0	0	0	0	**25**
11:00 PM	0	3	8	6	1	0	0	0	0	0	0	0	0	0	0	0	0	**18**
Total	**165**	**630**	**1,002**	**588**	**110**	**14**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2,514**
Percent	**6.6%**	**25.1%**	**39.9%**	**23.4%**	**4.4%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	17.3	mph	Mean (Average) Speed	17.4	mph
85th Percentile	22.5	mph	10 mph Pace	12.6 - 22.6	mph
95th Percentile	25.1	mph	Percent in Pace	70.3	%

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 08

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	1	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**8**
6:00 AM	1	4	17	14	2	2	0	0	0	0	0	0	0	0	0	0	0	**40**
7:00 AM	5	25	45	26	9	0	0	0	0	0	0	0	0	0	0	0	0	**110**
8:00 AM	5	19	47	18	2	0	1	0	0	0	0	0	0	0	0	0	0	**92**
9:00 AM	8	31	40	14	0	1	0	0	0	0	0	0	0	0	0	0	0	**94**
10:00 AM	15	31	39	9	3	0	0	0	0	0	0	0	0	0	0	0	0	**97**
11:00 AM	19	49	28	8	4	0	0	0	0	0	0	0	0	0	0	0	0	**108**
12:00 PM	26	61	41	7	0	0	0	0	0	0	0	0	0	0	0	0	0	**135**
1:00 PM	28	60	34	5	0	1	0	0	0	0	0	0	0	0	0	0	0	**128**
2:00 PM	19	53	55	9	2	0	0	0	0	0	0	0	0	0	0	0	0	**138**
3:00 PM	10	60	53	17	2	0	0	0	0	0	0	0	0	0	0	0	0	**142**
4:00 PM	18	69	50	10	4	2	0	0	0	0	0	0	0	0	0	0	0	**153**
5:00 PM	13	92	50	19	2	0	0	0	0	0	0	0	0	0	0	0	0	**176**
6:00 PM	10	59	30	11	1	0	0	0	0	0	0	0	0	0	0	0	0	**111**
7:00 PM	6	23	35	12	1	0	0	0	0	0	0	0	0	0	0	0	0	**77**
8:00 PM	3	22	29	6	2	0	0	0	0	0	0	0	0	0	0	0	0	**62**
9:00 PM	2	14	17	8	1	1	0	0	0	0	0	0	0	0	0	0	0	**43**
10:00 PM	0	9	13	4	2	0	0	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
Total	**190**	**684**	**634**	**203**	**38**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,758**
Percent	**10.8%**	**38.9%**	**36.1%**	**11.5%**	**2.2%**	**0.5%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	15.0	mph	Mean (Average) Speed	15.3	mph
85th Percentile	19.8	mph	10 mph Pace	9.6 - 19.6	mph
95th Percentile	23.3	mph	Percent in Pace	75.1	%

Location: A St, B/W 2nd St & 5th St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 08

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	11	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	3	14
1:00 AM	3	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	8
2:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
3:00 AM	3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	3
4:00 AM	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	6
5:00 AM	13	8	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	8	21
6:00 AM	45	40	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	40	85
7:00 AM	106	**110**	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	**110**	216
8:00 AM	172	92	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	92	264
9:00 AM	146	94	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	94	240
10:00 AM	167	97	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	167	97	264
11:00 AM	**196**	108	**304**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**196**	108	**304**
12:00 PM	**232**	135	367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**232**	135	367
1:00 PM	190	128	318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	128	318
2:00 PM	213	138	351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	213	138	351
3:00 PM	219	142	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	219	142	361
4:00 PM	189	153	342	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189	153	342
5:00 PM	214	**176**	**390**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	**176**	**390**
6:00 PM	148	111	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	111	259
7:00 PM	101	77	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	77	178
8:00 PM	60	62	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	62	122
9:00 PM	36	43	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	43	79
10:00 PM	25	28	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	28	53
11:00 PM	18	4	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	4	22
Total	2,514	1,758	4,272	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,514	1,758	4,272
Percent	59%	41%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59%	41%	-
AM Peak	11:00	07:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	11:00
Vol.	196	110	304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	110	304
PM Peak	12:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	17:00	17:00
Vol.	232	176	390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	176	390

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Andersen Dr, B/W 2nd St & Bellam Blvd

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 09

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	93	3,581	1,002	10	500	15	0	2	0	0	2	0	0	5,205
Percent	1.8%	68.8%	19.3%	0.2%	9.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	113	2,878	882	2	323	20	0	2	0	1	0	0	2	4,223
Percent	2.7%	68.2%	20.9%	0.0%	7.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	206	6,459	1,884	12	823	35	0	4	0	1	2	0	2	9,428
Percent	2.2%	68.5%	20.0%	0.1%	8.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	2	5	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	1	7	0	0	2	1	0	0	0	0	0	0	0	**11**
4:00 AM	0	9	1	1	1	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	26	5	1	11	3	0	0	0	0	0	0	0	**46**
6:00 AM	3	64	26	4	29	0	0	0	0	0	0	0	0	**126**
7:00 AM	1	182	80	4	44	2	0	0	0	0	0	0	0	**313**
8:00 AM	2	206	103	0	61	0	0	0	0	0	0	0	0	**372**
9:00 AM	2	205	78	0	41	1	0	0	0	0	0	0	0	**327**
10:00 AM	0	218	89	0	38	2	0	0	0	0	0	0	0	**347**
11:00 AM	3	289	72	0	46	2	0	1	0	0	0	0	0	**413**
12:00 PM	6	277	88	0	32	1	0	0	0	0	0	0	0	**404**
1:00 PM	5	304	76	0	30	1	0	0	0	0	1	0	0	**417**
2:00 PM	5	319	86	0	34	1	0	1	0	0	1	0	0	**447**
3:00 PM	10	307	54	0	44	1	0	0	0	0	0	0	0	**416**
4:00 PM	8	296	84	0	30	0	0	0	0	0	0	0	0	**418**
5:00 PM	15	309	63	0	23	0	0	0	0	0	0	0	0	**410**
6:00 PM	16	225	33	0	18	0	0	0	0	0	0	0	0	**292**
7:00 PM	6	156	35	0	8	0	0	0	0	0	0	0	0	**205**
8:00 PM	3	105	13	0	5	0	0	0	0	0	0	0	0	**126**
9:00 PM	4	52	13	0	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	1	4	1	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
Total	**93**	**3,581**	**1,002**	**10**	**500**	**15**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**5,205**
Percent	**1.8%**	**68.8%**	**19.3%**	**0.2%**	**9.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	0	0	3	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
5:00 AM	1	21	9	0	2	2	0	1	0	0	0	0	0	**36**
6:00 AM	12	65	38	0	19	0	0	0	0	0	0	0	0	**134**
7:00 AM	20	189	107	0	29	3	0	0	0	0	0	0	0	**348**
8:00 AM	21	262	97	0	38	0	0	0	0	0	0	0	1	**419**
9:00 AM	12	157	78	0	31	0	0	0	0	0	0	0	0	**278**
10:00 AM	3	200	62	0	28	2	0	0	0	1	0	0	1	**297**
11:00 AM	2	216	67	0	31	1	0	0	0	0	0	0	0	**317**
12:00 PM	7	210	60	0	14	2	0	0	0	0	0	0	0	**293**
1:00 PM	1	204	67	0	22	5	0	0	0	0	0	0	0	**299**
2:00 PM	9	232	47	0	20	2	0	0	0	0	0	0	0	**310**
3:00 PM	4	249	77	0	25	1	0	0	0	0	0	0	0	**356**
4:00 PM	7	237	61	0	24	1	0	1	0	0	0	0	0	**331**
5:00 PM	3	257	44	1	19	0	0	0	0	0	0	0	0	**324**
6:00 PM	6	125	25	1	2	0	0	0	0	0	0	0	0	**159**
7:00 PM	1	78	25	0	5	1	0	0	0	0	0	0	0	**110**
8:00 PM	0	63	4	0	3	0	0	0	0	0	0	0	0	**70**
9:00 PM	1	41	8	0	3	0	0	0	0	0	0	0	0	**53**
10:00 PM	3	19	3	0	2	0	0	0	0	0	0	0	0	**27**
11:00 PM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
Total	**113**	**2,878**	**882**	**2**	**323**	**20**	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**4,223**
Percent	**2.7%**	**68.2%**	**20.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	2	5	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	1	7	0	0	2	1	0	0	0	0	0	0	0	**11**
4:00 AM	0	9	1	1	1	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	26	5	1	11	3	0	0	0	0	0	0	0	**46**
6:00 AM	3	64	26	4	29	0	0	0	0	0	0	0	0	**126**
7:00 AM	1	182	80	4	44	2	0	0	0	0	0	0	0	**313**
8:00 AM	2	206	103	0	61	0	0	0	0	0	0	0	0	**372**
9:00 AM	2	205	78	0	41	1	0	0	0	0	0	0	0	**327**
10:00 AM	0	218	89	0	38	2	0	0	0	0	0	0	0	**347**
11:00 AM	3	289	72	0	46	2	0	1	0	0	0	0	0	**413**
12:00 PM	6	277	88	0	32	1	0	0	0	0	0	0	0	**404**
1:00 PM	5	304	76	0	30	1	0	0	0	0	1	0	0	**417**
2:00 PM	5	319	86	0	34	1	0	1	0	0	1	0	0	**447**
3:00 PM	10	307	54	0	44	1	0	0	0	0	0	0	0	**416**
4:00 PM	8	296	84	0	30	0	0	0	0	0	0	0	0	**418**
5:00 PM	15	309	63	0	23	0	0	0	0	0	0	0	0	**410**
6:00 PM	16	225	33	0	18	0	0	0	0	0	0	0	0	**292**
7:00 PM	6	156	35	0	8	0	0	0	0	0	0	0	0	**205**
8:00 PM	3	105	13	0	5	0	0	0	0	0	0	0	0	**126**
9:00 PM	4	52	13	0	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	1	4	1	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
Total	**93**	**3,581**	**1,002**	**10**	**500**	**15**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**5,205**
Percent	**1.8%**	**68.8%**	**19.3%**	**0.2%**	**9.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	0	0	3	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
5:00 AM	1	21	9	0	2	2	0	1	0	0	0	0	0	**36**
6:00 AM	12	65	38	0	19	0	0	0	0	0	0	0	0	**134**
7:00 AM	20	189	107	0	29	3	0	0	0	0	0	0	0	**348**
8:00 AM	21	262	97	0	38	0	0	0	0	0	0	0	1	**419**
9:00 AM	12	157	78	0	31	0	0	0	0	0	0	0	0	**278**
10:00 AM	3	200	62	0	28	2	0	0	0	1	0	0	1	**297**
11:00 AM	2	216	67	0	31	1	0	0	0	0	0	0	0	**317**
12:00 PM	7	210	60	0	14	2	0	0	0	0	0	0	0	**293**
1:00 PM	1	204	67	0	22	5	0	0	0	0	0	0	0	**299**
2:00 PM	9	232	47	0	20	2	0	0	0	0	0	0	0	**310**
3:00 PM	4	249	77	0	25	1	0	0	0	0	0	0	0	**356**
4:00 PM	7	237	61	0	24	1	0	1	0	0	0	0	0	**331**
5:00 PM	3	257	44	1	19	0	0	0	0	0	0	0	0	**324**
6:00 PM	6	125	25	1	2	0	0	0	0	0	0	0	0	**159**
7:00 PM	1	78	25	0	5	1	0	0	0	0	0	0	0	**110**
8:00 PM	0	63	4	0	3	0	0	0	0	0	0	0	0	**70**
9:00 PM	1	41	8	0	3	0	0	0	0	0	0	0	0	**53**
10:00 PM	3	19	3	0	2	0	0	0	0	0	0	0	0	**27**
11:00 PM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
Total	**113**	**2,878**	**882**	**2**	**323**	**20**	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**4,223**
Percent	**2.7%**	**68.2%**	**20.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	2	5	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	1	7	0	0	2	1	0	0	0	0	0	0	0	**11**
4:00 AM	0	9	1	1	1	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	26	5	1	11	3	0	0	0	0	0	0	0	**46**
6:00 AM	3	64	26	4	29	0	0	0	0	0	0	0	0	**126**
7:00 AM	1	182	80	4	44	2	0	0	0	0	0	0	0	**313**
8:00 AM	2	206	103	0	61	0	0	0	0	0	0	0	0	**372**
9:00 AM	2	205	78	0	41	1	0	0	0	0	0	0	0	**327**
10:00 AM	0	218	89	0	38	2	0	0	0	0	0	0	0	**347**
11:00 AM	3	289	72	0	46	2	0	1	0	0	0	0	0	**413**
12:00 PM	6	277	88	0	32	1	0	0	0	0	0	0	0	**404**
1:00 PM	5	304	76	0	30	1	0	0	0	0	1	0	0	**417**
2:00 PM	5	319	86	0	34	1	0	1	0	0	1	0	0	**447**
3:00 PM	10	307	54	0	44	1	0	0	0	0	0	0	0	**416**
4:00 PM	8	296	84	0	30	0	0	0	0	0	0	0	0	**418**
5:00 PM	15	309	63	0	23	0	0	0	0	0	0	0	0	**410**
6:00 PM	16	225	33	0	18	0	0	0	0	0	0	0	0	**292**
7:00 PM	6	156	35	0	8	0	0	0	0	0	0	0	0	**205**
8:00 PM	3	105	13	0	5	0	0	0	0	0	0	0	0	**126**
9:00 PM	4	52	13	0	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	1	4	1	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
Total	**93**	**3,581**	**1,002**	**10**	**500**	**15**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**5,205**
Percent	**1.8%**	**68.8%**	**19.3%**	**0.2%**	**9.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	0	0	3	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	7	0	0	1	0	0	0	0	0	0	0	0	**8**
5:00 AM	1	21	9	0	2	2	0	1	0	0	0	0	0	**36**
6:00 AM	12	65	38	0	19	0	0	0	0	0	0	0	0	**134**
7:00 AM	20	189	107	0	29	3	0	0	0	0	0	0	0	**348**
8:00 AM	21	262	97	0	38	0	0	0	0	0	0	0	1	**419**
9:00 AM	12	157	78	0	31	0	0	0	0	0	0	0	0	**278**
10:00 AM	3	200	62	0	28	2	0	0	0	1	0	0	1	**297**
11:00 AM	2	216	67	0	31	1	0	0	0	0	0	0	0	**317**
12:00 PM	7	210	60	0	14	2	0	0	0	0	0	0	0	**293**
1:00 PM	1	204	67	0	22	5	0	0	0	0	0	0	0	**299**
2:00 PM	9	232	47	0	20	2	0	0	0	0	0	0	0	**310**
3:00 PM	4	249	77	0	25	1	0	0	0	0	0	0	0	**356**
4:00 PM	7	237	61	0	24	1	0	1	0	0	0	0	0	**331**
5:00 PM	3	257	44	1	19	0	0	0	0	0	0	0	0	**324**
6:00 PM	6	125	25	1	2	0	0	0	0	0	0	0	0	**159**
7:00 PM	1	78	25	0	5	1	0	0	0	0	0	0	0	**110**
8:00 PM	0	63	4	0	3	0	0	0	0	0	0	0	0	**70**
9:00 PM	1	41	8	0	3	0	0	0	0	0	0	0	0	**53**
10:00 PM	3	19	3	0	2	0	0	0	0	0	0	0	0	**27**
11:00 PM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
Total	**113**	**2,878**	**882**	**2**	**323**	**20**	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**4,223**
Percent	**2.7%**	**68.2%**	**20.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Andersen Dr, B/W 2nd St & Bellam Blvd

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 09

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	4	33	43	50	422	1,980	1,935	599	115	14	9	0	0	0	1	0	0	5,205
Percent	0.1%	0.6%	0.8%	1.0%	8.1%	38.0%	37.2%	11.5%	2.2%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	3	38	57	78	677	1,817	1,214	272	49	11	6	0	1	0	0	0	0	4,223
Percent	0.1%	0.9%	1.3%	1.8%	16.0%	43.0%	28.7%	6.4%	1.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	7	71	100	128	1,099	3,797	3,149	871	164	25	15	0	1	0	1	0	0	9,428
Percent	0.1%	0.8%	1.1%	1.4%	11.7%	40.3%	33.4%	9.2%	1.7%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	35.1	mph	Mean (Average) Speed	35.1	mph
85th Percentile	39.8	mph	10 mph Pace	30.1 - 40.1	mph
95th Percentile	43.1	mph	Percent in Pace	75.0	%
Southbound			**Southbound**		
50th Percentile (Median)	33.6	mph	Mean (Average) Speed	33.5	mph
85th Percentile	38.1	mph	10 mph Pace	28.4 - 38.4	mph
95th Percentile	41.4	mph	Percent in Pace	74.4	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	5	0	2	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	0	1	0	0	1	2	0	1	0	1	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	1	2	2	3	2	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	0	0	1	2	0	4	3	2	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	0	0	0	2	8	19	15	2	0	0	0	0	0	0	0	0	**46**
6:00 AM	0	0	2	2	8	45	31	32	5	0	1	0	0	0	0	0	0	**126**
7:00 AM	0	0	0	2	38	131	111	22	6	3	0	0	0	0	0	0	0	**313**
8:00 AM	0	0	4	3	31	145	140	40	9	0	0	0	0	0	0	0	0	**372**
9:00 AM	0	1	2	1	36	128	120	35	4	0	0	0	0	0	0	0	0	**327**
10:00 AM	0	0	1	5	36	139	123	38	3	1	1	0	0	0	0	0	0	**347**
11:00 AM	0	2	0	0	33	176	152	44	5	0	1	0	0	0	0	0	0	**413**
12:00 PM	0	1	3	1	48	143	157	39	9	2	1	0	0	0	0	0	0	**404**
1:00 PM	0	1	1	5	31	177	161	36	4	1	0	0	0	0	0	0	0	**417**
2:00 PM	0	1	3	2	47	210	139	38	6	1	0	0	0	0	0	0	0	**447**
3:00 PM	0	8	2	4	32	155	163	48	3	1	0	0	0	0	0	0	0	**416**
4:00 PM	0	5	4	8	29	143	167	51	8	2	1	0	0	0	0	0	0	**418**
5:00 PM	1	8	4	2	15	160	165	45	9	0	0	0	0	0	1	0	0	**410**
6:00 PM	0	3	9	3	9	73	122	57	16	0	0	0	0	0	0	0	0	**292**
7:00 PM	0	2	3	7	12	71	67	27	12	2	2	0	0	0	0	0	0	**205**
8:00 PM	0	1	2	1	3	37	57	17	6	1	1	0	0	0	0	0	0	**126**
9:00 PM	2	0	1	2	5	23	29	7	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	0	0	1	0	0	5	0	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	**5**
Total	**4**	**33**	**43**	**50**	**422**	**1,980**	**1,935**	**599**	**115**	**14**	**9**	**0**	**0**	**0**	**1**	**0**	**0**	**5,205**
Percent	**0.1%**	**0.6%**	**0.8%**	**1.0%**	**8.1%**	**38.0%**	**37.2%**	**11.5%**	**2.2%**	**0.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	35.1	mph	Mean (Average) Speed	35.1	mph
85th Percentile	39.8	mph	10 mph Pace	30.1 - 40.1	mph
95th Percentile	43.1	mph	Percent in Pace	75.0	%

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	5	2	3	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	0	0	1	1	3	2	1	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	2	4	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	0	4	5	2	0	0	1	0	0	0	0	0	0	**12**
4:00 AM	0	0	0	0	0	0	5	0	2	0	1	0	0	0	0	0	0	**8**
5:00 AM	0	1	3	0	0	15	12	4	1	0	0	0	0	0	0	0	0	**36**
6:00 AM	1	4	5	5	11	51	40	12	4	0	1	0	0	0	0	0	0	**134**
7:00 AM	0	5	15	20	61	134	99	14	0	0	0	0	0	0	0	0	0	**348**
8:00 AM	0	5	13	10	96	165	106	18	4	2	0	0	0	0	0	0	0	**419**
9:00 AM	0	1	6	3	36	134	77	16	5	0	0	0	0	0	0	0	0	**278**
10:00 AM	0	4	1	9	66	130	68	17	2	0	0	0	0	0	0	0	0	**297**
11:00 AM	0	0	1	4	42	138	111	18	3	0	0	0	0	0	0	0	0	**317**
12:00 PM	1	3	1	5	61	127	79	12	2	2	0	0	0	0	0	0	0	**293**
1:00 PM	0	1	0	5	59	130	89	10	2	2	1	0	0	0	0	0	0	**299**
2:00 PM	0	11	2	2	53	140	77	21	3	1	0	0	0	0	0	0	0	**310**
3:00 PM	0	0	4	5	36	177	105	25	3	1	0	0	0	0	0	0	0	**356**
4:00 PM	1	1	2	5	87	137	71	19	6	0	2	0	0	0	0	0	0	**331**
5:00 PM	0	0	1	1	33	149	104	36	0	0	0	0	0	0	0	0	0	**324**
6:00 PM	0	0	2	4	9	59	69	12	3	0	0	0	1	0	0	0	0	**159**
7:00 PM	0	0	0	0	6	42	47	13	2	0	0	0	0	0	0	0	0	**110**
8:00 PM	0	0	0	0	6	33	18	10	2	1	0	0	0	0	0	0	0	**70**
9:00 PM	0	1	0	0	8	24	14	6	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	1	1	0	3	10	6	2	2	2	0	0	0	0	0	0	0	**27**
11:00 PM	0	0	0	0	1	8	6	0	2	0	0	0	0	0	0	0	0	**17**
Total	**3**	**38**	**57**	**78**	**677**	**1,817**	**1,214**	**272**	**49**	**11**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**4,223**
Percent	**0.1%**	**0.9%**	**1.3%**	**1.8%**	**16.0%**	**43.0%**	**28.7%**	**6.4%**	**1.2%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	33.6	mph	Mean (Average) Speed	33.5	mph
85th Percentile	38.1	mph	10 mph Pace	28.4 - 38.4	mph
95th Percentile	41.4	mph	Percent in Pace	74.4	%

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Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	5	0	2	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	0	1	0	0	1	2	0	1	0	1	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	1	2	2	3	2	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	0	0	1	2	0	4	3	2	0	0	0	0	0	0	0	0	**12**
5:00 AM	0	0	0	0	2	8	19	15	2	0	0	0	0	0	0	0	0	**46**
6:00 AM	0	0	2	2	8	45	31	32	5	0	1	0	0	0	0	0	0	**126**
7:00 AM	0	0	0	2	38	131	111	22	6	3	0	0	0	0	0	0	0	**313**
8:00 AM	0	0	4	3	31	145	140	40	9	0	0	0	0	0	0	0	0	**372**
9:00 AM	0	1	2	1	36	128	120	35	4	0	0	0	0	0	0	0	0	**327**
10:00 AM	0	0	1	5	36	139	123	38	3	1	1	0	0	0	0	0	0	**347**
11:00 AM	0	2	0	0	33	176	152	44	5	0	1	0	0	0	0	0	0	**413**
12:00 PM	0	1	3	1	48	143	157	39	9	2	1	0	0	0	0	0	0	**404**
1:00 PM	0	1	1	5	31	177	161	36	4	1	0	0	0	0	0	0	0	**417**
2:00 PM	0	1	3	2	47	210	139	38	6	1	0	0	0	0	0	0	0	**447**
3:00 PM	0	8	2	4	32	155	163	48	3	1	0	0	0	0	0	0	0	**416**
4:00 PM	0	5	4	8	29	143	167	51	8	2	1	0	0	0	0	0	0	**418**
5:00 PM	1	8	4	2	15	160	165	45	9	0	0	0	0	0	1	0	0	**410**
6:00 PM	0	3	9	3	9	73	122	57	16	0	0	0	0	0	0	0	0	**292**
7:00 PM	0	2	3	7	12	71	67	27	12	2	2	0	0	0	0	0	0	**205**
8:00 PM	0	1	2	1	3	37	57	17	6	1	1	0	0	0	0	0	0	**126**
9:00 PM	2	0	1	2	5	23	29	7	1	0	0	0	0	0	0	0	0	**70**
10:00 PM	0	0	1	0	0	5	0	0	2	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	**5**
Total	**4**	**33**	**43**	**50**	**422**	**1,980**	**1,935**	**599**	**115**	**14**	**9**	**0**	**0**	**0**	**1**	**0**	**0**	**5,205**
Percent	**0.1%**	**0.6%**	**0.8%**	**1.0%**	**8.1%**	**38.0%**	**37.2%**	**11.5%**	**2.2%**	**0.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	35.1	mph	Mean (Average) Speed	35.1	mph
85th Percentile	39.8	mph	10 mph Pace	30.1 - 40.1	mph
95th Percentile	43.1	mph	Percent in Pace	75.0	%

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Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 to 5/8/2019
Site Code: 09

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	5	2	3	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	0	0	1	1	3	2	1	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	2	4	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	0	4	5	2	0	0	1	0	0	0	0	0	0	**12**
4:00 AM	0	0	0	0	0	0	5	0	2	0	1	0	0	0	0	0	0	**8**
5:00 AM	0	1	3	0	0	15	12	4	1	0	0	0	0	0	0	0	0	**36**
6:00 AM	1	4	5	5	11	51	40	12	4	0	1	0	0	0	0	0	0	**134**
7:00 AM	0	5	15	20	61	134	99	14	0	0	0	0	0	0	0	0	0	**348**
8:00 AM	0	5	13	10	96	165	106	18	4	2	0	0	0	0	0	0	0	**419**
9:00 AM	0	1	6	3	36	134	77	16	5	0	0	0	0	0	0	0	0	**278**
10:00 AM	0	4	1	9	66	130	68	17	2	0	0	0	0	0	0	0	0	**297**
11:00 AM	0	0	1	4	42	138	111	18	3	0	0	0	0	0	0	0	0	**317**
12:00 PM	1	3	1	5	61	127	79	12	2	2	0	0	0	0	0	0	0	**293**
1:00 PM	0	1	0	5	59	130	89	10	2	2	1	0	0	0	0	0	0	**299**
2:00 PM	0	11	2	2	53	140	77	21	3	1	0	0	0	0	0	0	0	**310**
3:00 PM	0	0	4	5	36	177	105	25	3	1	0	0	0	0	0	0	0	**356**
4:00 PM	1	1	2	5	87	137	71	19	6	0	2	0	0	0	0	0	0	**331**
5:00 PM	0	0	1	1	33	149	104	36	0	0	0	0	0	0	0	0	0	**324**
6:00 PM	0	0	2	4	9	59	69	12	3	0	0	0	1	0	0	0	0	**159**
7:00 PM	0	0	0	0	6	42	47	13	2	0	0	0	0	0	0	0	0	**110**
8:00 PM	0	0	0	0	6	33	18	10	2	1	0	0	0	0	0	0	0	**70**
9:00 PM	0	1	0	0	8	24	14	6	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	1	1	0	3	10	6	2	2	2	0	0	0	0	0	0	0	**27**
11:00 PM	0	0	0	0	1	8	6	0	2	0	0	0	0	0	0	0	0	**17**
Total	**3**	**38**	**57**	**78**	**677**	**1,817**	**1,214**	**272**	**49**	**11**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**4,223**
Percent	**0.1%**	**0.9%**	**1.3%**	**1.8%**	**16.0%**	**43.0%**	**28.7%**	**6.4%**	**1.2%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	33.6	mph	Mean (Average) Speed	33.5	mph
85th Percentile	38.1	mph	10 mph Pace	28.4 - 38.4	mph
95th Percentile	41.4	mph	Percent in Pace	74.4	%

Location: Andersen Dr, B/W 2nd St & Bellam Blvd
Date Range: 5/8/2019 - 5/14/2019
Site Code: 09

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	8	10	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	18
1:00 AM	7	8	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	15
2:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
3:00 AM	11	12	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	12	23
4:00 AM	12	8	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	8	20
5:00 AM	46	36	82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	36	82
6:00 AM	126	134	260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	126	134	260
7:00 AM	313	348	661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	313	348	661
8:00 AM	372	**419**	**791**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	372	**419**	**791**
9:00 AM	327	278	605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	278	605
10:00 AM	347	297	644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	347	297	644
11:00 AM	**413**	317	730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**413**	317	730
12:00 PM	404	293	697	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	293	697
1:00 PM	417	299	716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	417	299	716
2:00 PM	**447**	310	757	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**447**	310	757
3:00 PM	416	**356**	**772**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	416	**356**	**772**
4:00 PM	418	331	749	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	418	331	749
5:00 PM	410	324	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	410	324	734
6:00 PM	292	159	451	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292	159	451
7:00 PM	205	110	315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	205	110	315
8:00 PM	126	70	196	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	126	70	196
9:00 PM	70	53	123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	53	123
10:00 PM	8	27	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	27	35
11:00 PM	5	17	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	17	22
Total	5,205	4,223	9,428	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,205	4,223	9,428
Percent	55%	45%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55%	45%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	413	419	791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413	419	791
PM Peak	14:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:00	15:00	15:00
Vol.	447	356	772	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	447	356	772

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Andersen Dr, B/W Bellam & Sir Francis Drake

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 10

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	13	2,722	1,154	75	523	75	0	3	74	2	2	0	4	4,647
Percent	0.3%	58.6%	24.8%	1.6%	11.3%	1.6%	0.0%	0.1%	1.6%	0.0%	0.0%	0.0%	0.1%	100%
Southbound	30	1,955	850	88	590	37	0	2	23	1	1	0	2	3,579
Percent	0.8%	54.6%	23.7%	2.5%	16.5%	1.0%	0.0%	0.1%	0.6%	0.0%	0.0%	0.0%	0.1%	100%
Total	43	4,677	2,004	163	1,113	112	0	5	97	3	3	0	6	8,226
Percent	0.5%	56.9%	24.4%	2.0%	13.5%	1.4%	0.0%	0.1%	1.2%	0.0%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	5	1	0	0	0	0	3	0	0	0	0	**22**
1:00 AM	0	8	2	0	1	0	0	0	2	0	0	0	0	**13**
2:00 AM	0	8	1	1	0	0	0	0	2	0	0	0	0	**12**
3:00 AM	0	6	1	0	9	3	0	0	3	0	0	0	0	**22**
4:00 AM	0	10	6	3	6	8	0	0	3	0	1	0	0	**37**
5:00 AM	0	48	11	5	32	9	0	0	9	0	1	0	1	**116**
6:00 AM	2	122	83	13	64	11	0	1	6	0	0	0	2	**304**
7:00 AM	0	149	159	12	64	8	0	0	4	1	0	0	0	**397**
8:00 AM	3	141	134	1	41	5	0	0	9	1	0	0	0	**335**
9:00 AM	0	164	95	2	37	7	0	0	6	0	0	0	0	**311**
10:00 AM	1	201	89	1	42	4	0	0	6	0	0	0	0	**344**
11:00 AM	0	208	81	2	48	9	0	0	4	0	0	0	0	**352**
12:00 PM	0	216	88	4	32	5	0	0	9	0	0	0	1	**355**
1:00 PM	0	175	91	6	38	2	0	0	1	0	0	0	0	**313**
2:00 PM	1	218	77	3	35	2	0	0	2	0	0	0	0	**338**
3:00 PM	2	266	89	5	32	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	224	67	2	11	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	187	34	0	10	0	0	0	1	0	0	0	0	**232**
6:00 PM	1	123	11	2	9	0	0	0	2	0	0	0	0	**148**
7:00 PM	3	79	7	3	3	0	0	1	0	0	0	0	0	**96**
8:00 PM	0	49	7	2	2	0	0	0	1	0	0	0	0	**61**
9:00 PM	0	52	6	2	4	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	31	6	2	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	24	4	3	1	0	0	1	1	0	0	0	0	**34**
Total	**13**	**2,722**	**1,154**	**75**	**523**	**75**	**0**	**3**	**74**	**2**	**2**	**0**	**4**	**4,647**
Percent	**0.3%**	**58.6%**	**24.8%**	**1.6%**	**11.3%**	**1.6%**	**0.0%**	**0.1%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	12	5	2	7	0	0	0	1	0	0	0	0	**28**
1:00 AM	0	9	1	1	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	5	1	0	5	1	0	0	1	0	1	0	0	**14**
3:00 AM	1	37	6	1	3	0	0	0	0	0	0	0	0	**48**
4:00 AM	0	50	16	1	3	2	0	0	1	0	0	0	0	**73**
5:00 AM	7	108	30	3	33	2	0	0	1	0	0	0	0	**184**
6:00 AM	3	153	96	2	62	4	0	0	2	0	0	0	0	**322**
7:00 AM	1	142	97	0	74	3	0	0	2	0	0	0	1	**320**
8:00 AM	1	119	71	3	43	5	0	1	3	0	0	0	0	**246**
9:00 AM	1	122	62	5	45	1	0	0	2	0	0	0	0	**238**
10:00 AM	0	148	72	2	51	3	0	0	2	0	0	0	0	**278**
11:00 AM	0	132	57	3	49	3	0	0	1	1	0	0	0	**246**
12:00 PM	6	156	71	6	42	5	0	0	2	0	0	0	0	**288**
1:00 PM	2	132	52	3	28	3	0	0	1	0	0	0	1	**222**
2:00 PM	1	144	43	1	42	0	0	0	0	0	0	0	0	**231**
3:00 PM	1	111	57	2	34	5	0	0	0	0	0	0	0	**210**
4:00 PM	0	93	41	4	14	0	0	0	2	0	0	0	0	**154**
5:00 PM	1	95	16	5	11	0	0	0	1	0	0	0	0	**129**
6:00 PM	0	50	26	16	16	0	0	0	0	0	0	0	0	**108**
7:00 PM	0	34	14	16	10	0	0	0	0	0	0	0	0	**74**
8:00 PM	3	32	6	3	8	0	0	0	1	0	0	0	0	**53**
9:00 PM	0	38	5	4	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	1	23	3	3	2	0	0	1	0	0	0	0	0	**33**
11:00 PM	0	10	2	2	4	0	0	0	0	0	0	0	0	**18**
Total	**30**	**1,955**	**850**	**88**	**590**	**37**	**0**	**2**	**23**	**1**	**1**	**0**	**2**	**3,579**
Percent	**0.8%**	**54.6%**	**23.7%**	**2.5%**	**16.5%**	**1.0%**	**0.0%**	**0.1%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	5	1	0	0	0	0	3	0	0	0	0	**22**
1:00 AM	0	8	2	0	1	0	0	0	2	0	0	0	0	**13**
2:00 AM	0	8	1	1	0	0	0	0	2	0	0	0	0	**12**
3:00 AM	0	6	1	0	9	3	0	0	3	0	0	0	0	**22**
4:00 AM	0	10	6	3	6	8	0	0	3	0	1	0	0	**37**
5:00 AM	0	48	11	5	32	9	0	0	9	0	1	0	1	**116**
6:00 AM	2	122	83	13	64	11	0	1	6	0	0	0	2	**304**
7:00 AM	0	149	159	12	64	8	0	0	4	1	0	0	0	**397**
8:00 AM	3	141	134	1	41	5	0	0	9	1	0	0	0	**335**
9:00 AM	0	164	95	2	37	7	0	0	6	0	0	0	0	**311**
10:00 AM	1	201	89	1	42	4	0	0	6	0	0	0	0	**344**
11:00 AM	0	208	81	2	48	9	0	0	4	0	0	0	0	**352**
12:00 PM	0	216	88	4	32	5	0	0	9	0	0	0	1	**355**
1:00 PM	0	175	91	6	38	2	0	0	1	0	0	0	0	**313**
2:00 PM	1	218	77	3	35	2	0	0	2	0	0	0	0	**338**
3:00 PM	2	266	89	5	32	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	224	67	2	11	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	187	34	0	10	0	0	0	1	0	0	0	0	**232**
6:00 PM	1	123	11	2	9	0	0	0	2	0	0	0	0	**148**
7:00 PM	3	79	7	3	3	0	0	1	0	0	0	0	0	**96**
8:00 PM	0	49	7	2	2	0	0	0	1	0	0	0	0	**61**
9:00 PM	0	52	6	2	4	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	31	6	2	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	24	4	3	1	0	0	1	1	0	0	0	0	**34**
Total	**13**	**2,722**	**1,154**	**75**	**523**	**75**	**0**	**3**	**74**	**2**	**2**	**0**	**4**	**4,647**
Percent	**0.3%**	**58.6%**	**24.8%**	**1.6%**	**11.3%**	**1.6%**	**0.0%**	**0.1%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	12	5	2	7	0	0	0	1	0	0	0	0	**28**
1:00 AM	0	9	1	1	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	5	1	0	5	1	0	0	1	0	1	0	0	**14**
3:00 AM	1	37	6	1	3	0	0	0	0	0	0	0	0	**48**
4:00 AM	0	50	16	1	3	2	0	0	1	0	0	0	0	**73**
5:00 AM	7	108	30	3	33	2	0	0	1	0	0	0	0	**184**
6:00 AM	3	153	96	2	62	4	0	0	2	0	0	0	0	**322**
7:00 AM	1	142	97	0	74	3	0	0	2	0	0	0	1	**320**
8:00 AM	1	119	71	3	43	5	0	1	3	0	0	0	0	**246**
9:00 AM	1	122	62	5	45	1	0	0	2	0	0	0	0	**238**
10:00 AM	0	148	72	2	51	3	0	0	2	0	0	0	0	**278**
11:00 AM	0	132	57	3	49	3	0	0	1	1	0	0	0	**246**
12:00 PM	6	156	71	6	42	5	0	0	2	0	0	0	0	**288**
1:00 PM	2	132	52	3	28	3	0	0	1	0	0	0	1	**222**
2:00 PM	1	144	43	1	42	0	0	0	0	0	0	0	0	**231**
3:00 PM	1	111	57	2	34	5	0	0	0	0	0	0	0	**210**
4:00 PM	0	93	41	4	14	0	0	0	2	0	0	0	0	**154**
5:00 PM	1	95	16	5	11	0	0	0	1	0	0	0	0	**129**
6:00 PM	0	50	26	16	16	0	0	0	0	0	0	0	0	**108**
7:00 PM	0	34	14	16	10	0	0	0	0	0	0	0	0	**74**
8:00 PM	3	32	6	3	8	0	0	0	1	0	0	0	0	**53**
9:00 PM	0	38	5	4	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	1	23	3	3	2	0	0	1	0	0	0	0	0	**33**
11:00 PM	0	10	2	2	4	0	0	0	0	0	0	0	0	**18**
Total	**30**	**1,955**	**850**	**88**	**590**	**37**	**0**	**2**	**23**	**1**	**1**	**0**	**2**	**3,579**
Percent	**0.8%**	**54.6%**	**23.7%**	**2.5%**	**16.5%**	**1.0%**	**0.0%**	**0.1%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	5	1	0	0	0	0	3	0	0	0	0	**22**
1:00 AM	0	8	2	0	1	0	0	0	2	0	0	0	0	**13**
2:00 AM	0	8	1	1	0	0	0	0	2	0	0	0	0	**12**
3:00 AM	0	6	1	0	9	3	0	0	3	0	0	0	0	**22**
4:00 AM	0	10	6	3	6	8	0	0	3	0	1	0	0	**37**
5:00 AM	0	48	11	5	32	9	0	0	9	0	1	0	1	**116**
6:00 AM	2	122	83	13	64	11	0	1	6	0	0	0	2	**304**
7:00 AM	0	149	159	12	64	8	0	0	4	1	0	0	0	**397**
8:00 AM	3	141	134	1	41	5	0	0	9	1	0	0	0	**335**
9:00 AM	0	164	95	2	37	7	0	0	6	0	0	0	0	**311**
10:00 AM	1	201	89	1	42	4	0	0	6	0	0	0	0	**344**
11:00 AM	0	208	81	2	48	9	0	0	4	0	0	0	0	**352**
12:00 PM	0	216	88	4	32	5	0	0	9	0	0	0	1	**355**
1:00 PM	0	175	91	6	38	2	0	0	1	0	0	0	0	**313**
2:00 PM	1	218	77	3	35	2	0	0	2	0	0	0	0	**338**
3:00 PM	2	266	89	5	32	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	224	67	2	11	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	187	34	0	10	0	0	0	1	0	0	0	0	**232**
6:00 PM	1	123	11	2	9	0	0	0	2	0	0	0	0	**148**
7:00 PM	3	79	7	3	3	0	0	1	0	0	0	0	0	**96**
8:00 PM	0	49	7	2	2	0	0	0	1	0	0	0	0	**61**
9:00 PM	0	52	6	2	4	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	31	6	2	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	24	4	3	1	0	0	1	1	0	0	0	0	**34**
Total	**13**	**2,722**	**1,154**	**75**	**523**	**75**	**0**	**3**	**74**	**2**	**2**	**0**	**4**	**4,647**
Percent	**0.3%**	**58.6%**	**24.8%**	**1.6%**	**11.3%**	**1.6%**	**0.0%**	**0.1%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	12	5	2	7	0	0	0	1	0	0	0	0	**28**
1:00 AM	0	9	1	1	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	5	1	0	5	1	0	0	1	0	1	0	0	**14**
3:00 AM	1	37	6	1	3	0	0	0	0	0	0	0	0	**48**
4:00 AM	0	50	16	1	3	2	0	0	1	0	0	0	0	**73**
5:00 AM	7	108	30	3	33	2	0	0	1	0	0	0	0	**184**
6:00 AM	3	153	96	2	62	4	0	0	2	0	0	0	0	**322**
7:00 AM	1	142	97	0	74	3	0	0	2	0	0	0	1	**320**
8:00 AM	1	119	71	3	43	5	0	1	3	0	0	0	0	**246**
9:00 AM	1	122	62	5	45	1	0	0	2	0	0	0	0	**238**
10:00 AM	0	148	72	2	51	3	0	0	2	0	0	0	0	**278**
11:00 AM	0	132	57	3	49	3	0	0	1	1	0	0	0	**246**
12:00 PM	6	156	71	6	42	5	0	0	2	0	0	0	0	**288**
1:00 PM	2	132	52	3	28	3	0	0	1	0	0	0	1	**222**
2:00 PM	1	144	43	1	42	0	0	0	0	0	0	0	0	**231**
3:00 PM	1	111	57	2	34	5	0	0	0	0	0	0	0	**210**
4:00 PM	0	93	41	4	14	0	0	0	2	0	0	0	0	**154**
5:00 PM	1	95	16	5	11	0	0	0	1	0	0	0	0	**129**
6:00 PM	0	50	26	16	16	0	0	0	0	0	0	0	0	**108**
7:00 PM	0	34	14	16	10	0	0	0	0	0	0	0	0	**74**
8:00 PM	3	32	6	3	8	0	0	0	1	0	0	0	0	**53**
9:00 PM	0	38	5	4	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	1	23	3	3	2	0	0	1	0	0	0	0	0	**33**
11:00 PM	0	10	2	2	4	0	0	0	0	0	0	0	0	**18**
Total	**30**	**1,955**	**850**	**88**	**590**	**37**	**0**	**2**	**23**	**1**	**1**	**0**	**2**	**3,579**
Percent	**0.8%**	**54.6%**	**23.7%**	**2.5%**	**16.5%**	**1.0%**	**0.0%**	**0.1%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Vehicle Speed Report Summary

Location: Andersen Dr, B/W Bellam & Sir Francis Drake

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 10

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	4	9	47	314	1,274	1,971	856	153	16	3	0	0	0	0	0	0	0	4,647
Percent	0.1%	0.2%	1.0%	6.8%	27.4%	42.4%	18.4%	3.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	4	10	71	119	409	1,309	1,186	376	76	14	5	0	0	0	0	0	0	3,579
Percent	0.1%	0.3%	2.0%	3.3%	11.4%	36.6%	33.1%	10.5%	2.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	8	19	118	433	1,683	3,280	2,042	529	92	17	5	0	0	0	0	0	0	8,226
Percent	0.1%	0.2%	1.4%	5.3%	20.5%	39.9%	24.8%	6.4%	1.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	31.7	mph	Mean (Average) Speed	31.6	mph
85th Percentile	36.4	mph	10 mph Pace	26.6 - 36.6	mph
95th Percentile	39.3	mph	Percent in Pace	72.7	%
Southbound			**Southbound**		
50th Percentile (Median)	34.6	mph	Mean (Average) Speed	34.4	mph
85th Percentile	39.6	mph	10 mph Pace	30.4 - 40.4	mph
95th Percentile	42.9	mph	Percent in Pace	69.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	1	9	6	5	0	0	0	0	0	0	0	0	0	0	**22**
1:00 AM	0	0	0	1	4	0	4	2	1	1	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	1	1	1	6	1	2	0	0	0	0	0	0	0	0	0	**12**
3:00 AM	0	0	2	4	10	5	1	0	0	0	0	0	0	0	0	0	0	**22**
4:00 AM	0	0	0	7	17	10	3	0	0	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	1	5	22	36	33	17	2	0	0	0	0	0	0	0	0	0	**116**
6:00 AM	1	1	2	21	105	107	56	10	1	0	0	0	0	0	0	0	0	**304**
7:00 AM	0	0	2	26	133	159	63	13	1	0	0	0	0	0	0	0	0	**397**
8:00 AM	2	5	11	35	76	147	48	11	0	0	0	0	0	0	0	0	0	**335**
9:00 AM	0	0	5	34	71	141	56	4	0	0	0	0	0	0	0	0	0	**311**
10:00 AM	0	0	5	15	139	143	36	6	0	0	0	0	0	0	0	0	0	**344**
11:00 AM	1	1	1	36	124	147	38	3	1	0	0	0	0	0	0	0	0	**352**
12:00 PM	0	0	3	29	120	147	49	7	0	0	0	0	0	0	0	0	0	**355**
1:00 PM	0	1	4	17	82	157	46	5	1	0	0	0	0	0	0	0	0	**313**
2:00 PM	0	0	2	27	79	158	65	7	0	0	0	0	0	0	0	0	0	**338**
3:00 PM	0	0	2	16	102	193	75	5	1	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	0	0	3	53	137	77	32	2	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	0	0	6	24	87	89	24	2	0	0	0	0	0	0	0	0	**232**
6:00 PM	0	0	0	2	24	62	49	8	3	0	0	0	0	0	0	0	0	**148**
7:00 PM	0	0	0	3	14	43	30	6	0	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	0	1	3	12	26	15	2	2	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	0	0	0	17	25	19	2	1	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	0	0	3	14	18	6	0	0	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	0	0	2	8	14	8	2	0	0	0	0	0	0	0	0	0	**34**
Total	**4**	**9**	**47**	**314**	**1,274**	**1,971**	**856**	**153**	**16**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,647**
Percent	**0.1%**	**0.2%**	**1.0%**	**6.8%**	**27.4%**	**42.4%**	**18.4%**	**3.3%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	31.7	mph	Mean (Average) Speed	31.6	mph
85th Percentile	36.4	mph	10 mph Pace	26.6 - 36.6	mph
95th Percentile	39.3	mph	Percent in Pace	72.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	2	8	11	5	0	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	0	0	0	1	2	6	2	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	2	5	6	1	0	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	2	1	2	8	11	15	3	2	3	1	0	0	0	0	0	0	**48**
4:00 AM	0	0	1	3	8	22	22	12	5	0	0	0	0	0	0	0	0	**73**
5:00 AM	0	1	5	4	24	69	57	19	4	1	0	0	0	0	0	0	0	**184**
6:00 AM	0	2	8	12	28	122	95	48	7	0	0	0	0	0	0	0	0	**322**
7:00 AM	0	2	3	16	29	122	110	33	5	0	0	0	0	0	0	0	0	**320**
8:00 AM	0	0	1	4	30	98	87	20	6	0	0	0	0	0	0	0	0	**246**
9:00 AM	3	1	5	4	26	115	63	18	3	0	0	0	0	0	0	0	0	**238**
10:00 AM	0	0	5	10	42	116	84	20	1	0	0	0	0	0	0	0	0	**278**
11:00 AM	0	1	5	13	35	102	68	18	3	1	0	0	0	0	0	0	0	**246**
12:00 PM	0	0	3	15	52	108	85	24	0	1	0	0	0	0	0	0	0	**288**
1:00 PM	0	0	10	5	26	90	68	15	7	0	1	0	0	0	0	0	0	**222**
2:00 PM	0	0	2	11	18	78	89	25	6	2	0	0	0	0	0	0	0	**231**
3:00 PM	0	0	6	8	32	73	63	24	4	0	0	0	0	0	0	0	0	**210**
4:00 PM	0	0	1	2	7	32	79	26	3	2	2	0	0	0	0	0	0	**154**
5:00 PM	0	0	2	0	8	38	47	25	5	3	1	0	0	0	0	0	0	**129**
6:00 PM	0	0	11	0	7	27	47	7	8	1	0	0	0	0	0	0	0	**108**
7:00 PM	0	0	1	2	5	27	29	10	0	0	0	0	0	0	0	0	0	**74**
8:00 PM	1	0	0	2	4	20	20	5	1	0	0	0	0	0	0	0	0	**53**
9:00 PM	0	0	1	4	9	10	15	8	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	0	0	0	0	2	9	14	6	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	0	0	1	4	5	6	2	0	0	0	0	0	0	0	0	0	**18**
Total	**4**	**10**	**71**	**119**	**409**	**1,309**	**1,186**	**376**	**76**	**14**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**3,579**
Percent	**0.1%**	**0.3%**	**2.0%**	**3.3%**	**11.4%**	**36.6%**	**33.1%**	**10.5%**	**2.1%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	34.6	mph	Mean (Average) Speed	34.4	mph
85th Percentile	39.6	mph	10 mph Pace	30.4 - 40.4	mph
95th Percentile	42.9	mph	Percent in Pace	69.82	%

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	1	9	6	5	0	0	0	0	0	0	0	0	0	0	**22**
1:00 AM	0	0	0	1	4	0	4	2	1	1	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	1	1	1	6	1	2	0	0	0	0	0	0	0	0	0	**12**
3:00 AM	0	0	2	4	10	5	1	0	0	0	0	0	0	0	0	0	0	**22**
4:00 AM	0	0	0	7	17	10	3	0	0	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	1	5	22	36	33	17	2	0	0	0	0	0	0	0	0	0	**116**
6:00 AM	1	1	2	21	105	107	56	10	1	0	0	0	0	0	0	0	0	**304**
7:00 AM	0	0	2	26	133	159	63	13	1	0	0	0	0	0	0	0	0	**397**
8:00 AM	2	5	11	35	76	147	48	11	0	0	0	0	0	0	0	0	0	**335**
9:00 AM	0	0	5	34	71	141	56	4	0	0	0	0	0	0	0	0	0	**311**
10:00 AM	0	0	5	15	139	143	36	6	0	0	0	0	0	0	0	0	0	**344**
11:00 AM	1	1	1	36	124	147	38	3	1	0	0	0	0	0	0	0	0	**352**
12:00 PM	0	0	3	29	120	147	49	7	0	0	0	0	0	0	0	0	0	**355**
1:00 PM	0	1	4	17	82	157	46	5	1	0	0	0	0	0	0	0	0	**313**
2:00 PM	0	0	2	27	79	158	65	7	0	0	0	0	0	0	0	0	0	**338**
3:00 PM	0	0	2	16	102	193	75	5	1	1	0	0	0	0	0	0	0	**395**
4:00 PM	0	0	0	3	53	137	77	32	2	1	0	0	0	0	0	0	0	**305**
5:00 PM	0	0	0	6	24	87	89	24	2	0	0	0	0	0	0	0	0	**232**
6:00 PM	0	0	0	2	24	62	49	8	3	0	0	0	0	0	0	0	0	**148**
7:00 PM	0	0	0	3	14	43	30	6	0	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	0	1	3	12	26	15	2	2	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	0	0	0	17	25	19	2	1	0	0	0	0	0	0	0	0	**64**
10:00 PM	0	0	0	3	14	18	6	0	0	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	0	0	2	8	14	8	2	0	0	0	0	0	0	0	0	0	**34**
Total	**4**	**9**	**47**	**314**	**1,274**	**1,971**	**856**	**153**	**16**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,647**
Percent	**0.1%**	**0.2%**	**1.0%**	**6.8%**	**27.4%**	**42.4%**	**18.4%**	**3.3%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	31.7	mph	Mean (Average) Speed	31.6	mph
85th Percentile	36.4	mph	10 mph Pace	26.6 - 36.6	mph
95th Percentile	39.3	mph	Percent in Pace	72.7	%

Project Manager: (415) 310-6469
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Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 to 4/25/2019
Site Code: 10

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	2	8	11	5	0	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	0	0	0	1	2	6	2	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	2	5	6	1	0	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	2	1	2	8	11	15	3	2	3	1	0	0	0	0	0	0	**48**
4:00 AM	0	0	1	3	8	22	22	12	5	0	0	0	0	0	0	0	0	**73**
5:00 AM	0	1	5	4	24	69	57	19	4	1	0	0	0	0	0	0	0	**184**
6:00 AM	0	2	8	12	28	122	95	48	7	0	0	0	0	0	0	0	0	**322**
7:00 AM	0	2	3	16	29	122	110	33	5	0	0	0	0	0	0	0	0	**320**
8:00 AM	0	0	1	4	30	98	87	20	6	0	0	0	0	0	0	0	0	**246**
9:00 AM	3	1	5	4	26	115	63	18	3	0	0	0	0	0	0	0	0	**238**
10:00 AM	0	0	5	10	42	116	84	20	1	0	0	0	0	0	0	0	0	**278**
11:00 AM	0	1	5	13	35	102	68	18	3	1	0	0	0	0	0	0	0	**246**
12:00 PM	0	0	3	15	52	108	85	24	0	1	0	0	0	0	0	0	0	**288**
1:00 PM	0	0	10	5	26	90	68	15	7	0	1	0	0	0	0	0	0	**222**
2:00 PM	0	0	2	11	18	78	89	25	6	2	0	0	0	0	0	0	0	**231**
3:00 PM	0	0	6	8	32	73	63	24	4	0	0	0	0	0	0	0	0	**210**
4:00 PM	0	0	1	2	7	32	79	26	3	2	2	0	0	0	0	0	0	**154**
5:00 PM	0	0	2	0	8	38	47	25	5	3	1	0	0	0	0	0	0	**129**
6:00 PM	0	0	11	0	7	27	47	7	8	1	0	0	0	0	0	0	0	**108**
7:00 PM	0	0	1	2	5	27	29	10	0	0	0	0	0	0	0	0	0	**74**
8:00 PM	1	0	0	2	4	20	20	5	1	0	0	0	0	0	0	0	0	**53**
9:00 PM	0	0	1	4	9	10	15	8	4	0	0	0	0	0	0	0	0	**51**
10:00 PM	0	0	0	0	2	9	14	6	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	0	0	1	4	5	6	2	0	0	0	0	0	0	0	0	0	**18**
Total	**4**	**10**	**71**	**119**	**409**	**1,309**	**1,186**	**376**	**76**	**14**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**3,579**
Percent	**0.1%**	**0.3%**	**2.0%**	**3.3%**	**11.4%**	**36.6%**	**33.1%**	**10.5%**	**2.1%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	34.6	mph	Mean (Average) Speed	34.4	mph
85th Percentile	39.6	mph	10 mph Pace	30.4 - 40.4	mph
95th Percentile	42.9	mph	Percent in Pace	69.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Andersen Dr, B/W Bellam & Sir Francis Drake
Date Range: 4/25/2019 - 5/1/2019
Site Code: 10

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	22	28	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	28	50
1:00 AM	13	11	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	11	24
2:00 AM	12	14	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	14	26
3:00 AM	22	48	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	48	70
4:00 AM	37	73	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	73	110
5:00 AM	116	184	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	184	300
6:00 AM	304	**322**	626	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	304	**322**	626
7:00 AM	**397**	320	**717**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**397**	320	**717**
8:00 AM	335	246	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	335	246	581
9:00 AM	311	238	549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	311	238	549
10:00 AM	344	278	622	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344	278	622
11:00 AM	352	246	598	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	352	246	598
12:00 PM	355	**288**	**643**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	**288**	**643**
1:00 PM	313	222	535	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	313	222	535
2:00 PM	338	231	569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	338	231	569
3:00 PM	**395**	210	605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**395**	210	605
4:00 PM	305	154	459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305	154	459
5:00 PM	232	129	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	129	361
6:00 PM	148	108	256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	108	256
7:00 PM	96	74	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	74	170
8:00 PM	61	53	114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	53	114
9:00 PM	64	51	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	51	115
10:00 PM	41	33	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	33	74
11:00 PM	34	18	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	18	52
Total	4,647	3,579	8,226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,647	3,579	8,226
Percent	56%	44%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56%	44%	-
AM Peak	07:00	06:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	06:00	07:00
Vol.	397	322	717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	397	322	717
PM Peak	15:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	12:00	12:00
Vol.	395	288	643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	395	288	643

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Bellam Blvd, B/W Andersen & Kerner

Count Direction: Eastbound / Westbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 11

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	95	7,949	2,388	59	747	97	0	14	83	10	7	0	10	11,459
Percent	0.8%	69.4%	20.8%	0.5%	6.5%	0.8%	0.0%	0.1%	0.7%	0.1%	0.1%	0.0%	0.1%	100%
Westbound	111	12,674	3,502	64	854	128	0	19	108	104	16	4	96	17,680
Percent	0.6%	71.7%	19.8%	0.4%	4.8%	0.7%	0.0%	0.1%	0.6%	0.6%	0.1%	0.0%	0.5%	100%
Total	206	20,623	5,890	123	1,601	225	0	33	191	114	23	4	106	29,139
Percent	0.7%	70.8%	20.2%	0.4%	5.5%	0.8%	0.0%	0.1%	0.7%	0.4%	0.1%	0.0%	0.4%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Wednesday, April 24, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	100	14	1	3	1	0	0	2	0	0	0	0	**122**
1:00 AM	1	43	6	0	1	1	0	0	5	0	0	0	0	**57**
2:00 AM	0	35	7	0	3	0	0	1	3	0	0	0	0	**49**
3:00 AM	1	30	5	0	10	4	0	0	5	0	0	0	0	**55**
4:00 AM	2	25	9	3	8	3	0	1	6	0	0	0	0	**57**
5:00 AM	3	51	28	1	20	10	0	1	7	0	0	0	0	**121**
6:00 AM	6	126	84	6	55	10	0	0	10	0	0	0	0	**297**
7:00 AM	3	340	167	3	54	7	0	0	8	1	0	0	2	**585**
8:00 AM	5	379	180	4	58	8	0	1	4	0	1	0	0	**640**
9:00 AM	4	370	154	2	47	4	0	0	4	0	0	0	4	**589**
10:00 AM	7	442	138	1	44	5	0	1	7	2	2	0	0	**649**
11:00 AM	6	489	182	1	76	10	0	2	4	2	3	0	1	**776**
12:00 PM	3	550	158	5	60	11	0	1	6	0	0	0	0	**794**
1:00 PM	6	568	147	4	52	6	0	0	3	0	1	0	0	**787**
2:00 PM	12	631	187	4	56	4	0	0	2	0	0	0	1	**897**
3:00 PM	4	692	214	8	63	5	0	1	1	1	0	0	0	**989**
4:00 PM	7	726	241	1	58	4	0	1	0	3	0	0	0	**1,041**
5:00 PM	8	721	179	2	36	2	0	0	1	1	0	0	2	**952**
6:00 PM	9	496	105	2	14	1	0	0	2	0	0	0	0	**629**
7:00 PM	4	321	69	1	12	0	0	3	1	0	0	0	0	**411**
8:00 PM	0	298	46	2	8	1	0	0	1	0	0	0	0	**356**
9:00 PM	3	279	42	3	3	0	0	0	0	0	0	0	0	**330**
10:00 PM	0	176	17	2	4	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	61	9	3	2	0	0	1	1	0	0	0	0	**77**
Total	**95**	**7,949**	**2,388**	**59**	**747**	**97**	**0**	**14**	**83**	**10**	**7**	**0**	**10**	**11,459**
Percent	**0.8%**	**69.4%**	**20.8%**	**0.5%**	**6.5%**	**0.8%**	**0.0%**	**0.1%**	**0.7%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

DATA SOLUTIONS

Wednesday, April 24, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	30	7	2	4	0	0	0	4	0	0	0	0	**47**
1:00 AM	2	20	5	0	3	1	0	1	1	0	0	0	0	**33**
2:00 AM	0	25	2	2	2	0	0	0	3	0	0	0	0	**34**
3:00 AM	2	65	12	2	5	0	0	0	3	0	0	0	0	**89**
4:00 AM	5	76	25	2	9	6	0	0	6	0	0	0	1	**130**
5:00 AM	4	268	98	3	33	9	0	3	6	1	0	0	1	**426**
6:00 AM	6	614	303	2	53	8	0	0	10	4	1	0	5	**1,006**
7:00 AM	15	940	333	2	57	12	0	2	7	18	0	1	16	**1,403**
8:00 AM	16	913	253	4	80	16	0	3	12	9	2	0	10	**1,318**
9:00 AM	4	763	260	6	67	6	0	2	10	9	3	0	3	**1,133**
10:00 AM	8	856	272	4	83	9	0	0	9	7	1	1	7	**1,257**
11:00 AM	7	957	215	7	78	13	0	2	2	0	4	0	5	**1,290**
12:00 PM	7	917	258	1	64	11	0	2	2	7	2	1	3	**1,275**
1:00 PM	6	886	237	2	69	11	0	0	2	7	0	0	7	**1,227**
2:00 PM	6	811	217	2	68	9	0	1	8	5	0	0	6	**1,133**
3:00 PM	4	725	207	2	48	6	0	0	5	7	0	0	5	**1,009**
4:00 PM	4	653	177	1	32	3	0	1	3	11	2	1	6	**894**
5:00 PM	5	666	157	0	15	4	0	0	5	4	1	0	15	**872**
6:00 PM	5	591	123	11	24	3	0	1	4	9	0	0	3	**774**
7:00 PM	1	549	121	7	17	0	0	1	0	2	0	0	3	**701**
8:00 PM	3	487	85	1	17	0	0	0	2	2	0	0	0	**597**
9:00 PM	1	292	63	1	6	0	0	0	0	1	0	0	0	**364**
10:00 PM	0	326	40	0	11	0	0	0	0	1	0	0	0	**378**
11:00 PM	0	244	32	0	9	1	0	0	4	0	0	0	0	**290**
Total	**111**	**12,674**	**3,502**	**64**	**854**	**128**	**0**	**19**	**108**	**104**	**16**	**4**	**96**	**17,680**
Percent	**0.6%**	**71.7%**	**19.8%**	**0.4%**	**4.8%**	**0.7%**	**0.0%**	**0.1%**	**0.6%**	**0.6%**	**0.1%**	**0.0%**	**0.5%**	

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	1	100	14	1	3	1	0	0	2	0	0	0	0	**122**
1:00 AM	1	43	6	0	1	1	0	0	5	0	0	0	0	**57**
2:00 AM	0	35	7	0	3	0	0	1	3	0	0	0	0	**49**
3:00 AM	1	30	5	0	10	4	0	0	5	0	0	0	0	**55**
4:00 AM	2	25	9	3	8	3	0	1	6	0	0	0	0	**57**
5:00 AM	3	51	28	1	20	10	0	1	7	0	0	0	0	**121**
6:00 AM	6	126	84	6	55	10	0	0	10	0	0	0	0	**297**
7:00 AM	3	340	167	3	54	7	0	0	8	1	0	0	2	**585**
8:00 AM	5	379	180	4	58	8	0	1	4	0	1	0	0	**640**
9:00 AM	4	370	154	2	47	4	0	0	4	0	0	0	4	**589**
10:00 AM	7	442	138	1	44	5	0	1	7	2	2	0	0	**649**
11:00 AM	6	489	182	1	76	10	0	2	4	2	3	0	1	**776**
12:00 PM	3	550	158	5	60	11	0	1	6	0	0	0	0	**794**
1:00 PM	6	568	147	4	52	6	0	0	3	0	1	0	0	**787**
2:00 PM	12	631	187	4	56	4	0	0	2	0	0	0	1	**897**
3:00 PM	4	692	214	8	63	5	0	1	1	1	0	0	0	**989**
4:00 PM	7	726	241	1	58	4	0	1	0	3	0	0	0	**1,041**
5:00 PM	8	721	179	2	36	2	0	0	1	1	0	0	2	**952**
6:00 PM	9	496	105	2	14	1	0	0	2	0	0	0	0	**629**
7:00 PM	4	321	69	1	12	0	0	3	1	0	0	0	0	**411**
8:00 PM	0	298	46	2	8	1	0	0	1	0	0	0	0	**356**
9:00 PM	3	279	42	3	3	0	0	0	0	0	0	0	0	**330**
10:00 PM	0	176	17	2	4	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	61	9	3	2	0	0	1	1	0	0	0	0	**77**
Total	**95**	**7,949**	**2,388**	**59**	**747**	**97**	**0**	**14**	**83**	**10**	**7**	**0**	**10**	**11,459**
Percent	**0.8%**	**69.4%**	**20.8%**	**0.5%**	**6.5%**	**0.8%**	**0.0%**	**0.1%**	**0.7%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	30	7	2	4	0	0	0	4	0	0	0	0	**47**
1:00 AM	2	20	5	0	3	1	0	1	1	0	0	0	0	**33**
2:00 AM	0	25	2	2	2	0	0	0	3	0	0	0	0	**34**
3:00 AM	2	65	12	2	5	0	0	0	3	0	0	0	0	**89**
4:00 AM	5	76	25	2	9	6	0	0	6	0	0	0	1	**130**
5:00 AM	4	268	98	3	33	9	0	3	6	1	0	0	1	**426**
6:00 AM	6	614	303	2	53	8	0	0	10	4	1	0	5	**1,006**
7:00 AM	15	940	333	2	57	12	0	2	7	18	0	1	16	**1,403**
8:00 AM	16	913	253	4	80	16	0	3	12	9	2	0	10	**1,318**
9:00 AM	4	763	260	6	67	6	0	2	10	9	3	0	3	**1,133**
10:00 AM	8	856	272	4	83	9	0	0	9	7	1	1	7	**1,257**
11:00 AM	7	957	215	7	78	13	0	2	2	0	4	0	5	**1,290**
12:00 PM	7	917	258	1	64	11	0	2	2	7	2	1	3	**1,275**
1:00 PM	6	886	237	2	69	11	0	0	2	7	0	0	7	**1,227**
2:00 PM	6	811	217	2	68	9	0	1	8	5	0	0	6	**1,133**
3:00 PM	4	725	207	2	48	6	0	0	5	7	0	0	5	**1,009**
4:00 PM	4	653	177	1	32	3	0	1	3	11	2	1	6	**894**
5:00 PM	5	666	157	0	15	4	0	0	5	4	1	0	15	**872**
6:00 PM	5	591	123	11	24	3	0	1	4	9	0	0	3	**774**
7:00 PM	1	549	121	7	17	0	0	1	0	2	0	0	3	**701**
8:00 PM	3	487	85	1	17	0	0	0	2	2	0	0	0	**597**
9:00 PM	1	292	63	1	6	0	0	0	0	1	0	0	0	**364**
10:00 PM	0	326	40	0	11	0	0	0	0	1	0	0	0	**378**
11:00 PM	0	244	32	0	9	1	0	0	4	0	0	0	0	**290**
Total	**111**	**12,674**	**3,502**	**64**	**854**	**128**	**0**	**19**	**108**	**104**	**16**	**4**	**96**	**17,680**
Percent	**0.6%**	**71.7%**	**19.8%**	**0.4%**	**4.8%**	**0.7%**	**0.0%**	**0.1%**	**0.6%**	**0.6%**	**0.1%**	**0.0%**	**0.5%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	100	14	1	3	1	0	0	2	0	0	0	0	**122**
1:00 AM	1	43	6	0	1	1	0	0	5	0	0	0	0	**57**
2:00 AM	0	35	7	0	3	0	0	1	3	0	0	0	0	**49**
3:00 AM	1	30	5	0	10	4	0	0	5	0	0	0	0	**55**
4:00 AM	2	25	9	3	8	3	0	1	6	0	0	0	0	**57**
5:00 AM	3	51	28	1	20	10	0	1	7	0	0	0	0	**121**
6:00 AM	6	126	84	6	55	10	0	0	10	0	0	0	0	**297**
7:00 AM	3	340	167	3	54	7	0	0	8	1	0	0	2	**585**
8:00 AM	5	379	180	4	58	8	0	1	4	0	1	0	0	**640**
9:00 AM	4	370	154	2	47	4	0	0	4	0	0	0	4	**589**
10:00 AM	7	442	138	1	44	5	0	1	7	2	2	0	0	**649**
11:00 AM	6	489	182	1	76	10	0	2	4	2	3	0	1	**776**
12:00 PM	3	550	158	5	60	11	0	1	6	0	0	0	0	**794**
1:00 PM	6	568	147	4	52	6	0	0	3	0	1	0	0	**787**
2:00 PM	12	631	187	4	56	4	0	0	2	0	0	0	1	**897**
3:00 PM	4	692	214	8	63	5	0	1	1	1	0	0	0	**989**
4:00 PM	7	726	241	1	58	4	0	1	0	3	0	0	0	**1,041**
5:00 PM	8	721	179	2	36	2	0	0	1	1	0	0	2	**952**
6:00 PM	9	496	105	2	14	1	0	0	2	0	0	0	0	**629**
7:00 PM	4	321	69	1	12	0	0	3	1	0	0	0	0	**411**
8:00 PM	0	298	46	2	8	1	0	0	1	0	0	0	0	**356**
9:00 PM	3	279	42	3	3	0	0	0	0	0	0	0	0	**330**
10:00 PM	0	176	17	2	4	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	61	9	3	2	0	0	1	1	0	0	0	0	**77**
Total	**95**	**7,949**	**2,388**	**59**	**747**	**97**	**0**	**14**	**83**	**10**	**7**	**0**	**10**	**11,459**
Percent	**0.8%**	**69.4%**	**20.8%**	**0.5%**	**6.5%**	**0.8%**	**0.0%**	**0.1%**	**0.7%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	30	7	2	4	0	0	0	4	0	0	0	0	**47**
1:00 AM	2	20	5	0	3	1	0	1	1	0	0	0	0	**33**
2:00 AM	0	25	2	2	2	0	0	0	3	0	0	0	0	**34**
3:00 AM	2	65	12	2	5	0	0	0	3	0	0	0	0	**89**
4:00 AM	5	76	25	2	9	6	0	0	6	0	0	0	1	**130**
5:00 AM	4	268	98	3	33	9	0	3	6	1	0	0	1	**426**
6:00 AM	6	614	303	2	53	8	0	0	10	4	1	0	5	**1,006**
7:00 AM	15	940	333	2	57	12	0	2	7	18	0	1	16	**1,403**
8:00 AM	16	913	253	4	80	16	0	3	12	9	2	0	10	**1,318**
9:00 AM	4	763	260	6	67	6	0	2	10	9	3	0	3	**1,133**
10:00 AM	8	856	272	4	83	9	0	0	9	7	1	1	7	**1,257**
11:00 AM	7	957	215	7	78	13	0	2	2	0	4	0	5	**1,290**
12:00 PM	7	917	258	1	64	11	0	2	2	7	2	1	3	**1,275**
1:00 PM	6	886	237	2	69	11	0	0	2	7	0	0	7	**1,227**
2:00 PM	6	811	217	2	68	9	0	1	8	5	0	0	6	**1,133**
3:00 PM	4	725	207	2	48	6	0	0	5	7	0	0	5	**1,009**
4:00 PM	4	653	177	1	32	3	0	1	3	11	2	1	6	**894**
5:00 PM	5	666	157	0	15	4	0	0	5	4	1	0	15	**872**
6:00 PM	5	591	123	11	24	3	0	1	4	9	0	0	3	**774**
7:00 PM	1	549	121	7	17	0	0	1	0	2	0	0	3	**701**
8:00 PM	3	487	85	1	17	0	0	0	2	2	0	0	0	**597**
9:00 PM	1	292	63	1	6	0	0	0	0	1	0	0	0	**364**
10:00 PM	0	326	40	0	11	0	0	0	0	1	0	0	0	**378**
11:00 PM	0	244	32	0	9	1	0	0	4	0	0	0	0	**290**
Total	**111**	**12,674**	**3,502**	**64**	**854**	**128**	**0**	**19**	**108**	**104**	**16**	**4**	**96**	**17,680**
Percent	**0.6%**	**71.7%**	**19.8%**	**0.4%**	**4.8%**	**0.7%**	**0.0%**	**0.1%**	**0.6%**	**0.6%**	**0.1%**	**0.0%**	**0.5%**	

Vehicle Speed Report Summary

Location: Bellam Blvd, B/W Andersen & Kerner

Count Direction: Eastbound / Westbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 11

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	165	583	846	2,180	4,190	2,751	648	77	17	2	0	0	0	0	0	0	0	11,459
Percent	1.4%	5.1%	7.4%	19.0%	36.6%	24.0%	5.7%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	108	481	1,539	3,242	5,833	4,691	1,435	287	53	9	2	0	0	0	0	0	0	17,680
Percent	0.6%	2.7%	8.7%	18.3%	33.0%	26.5%	8.1%	1.6%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	273	1,064	2,385	5,422	10,023	7,442	2,083	364	70	11	2	0	0	0	0	0	0	29,139
Percent	0.9%	3.7%	8.2%	18.6%	34.4%	25.5%	7.1%	1.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Eastbound		
50th Percentile (Median)	27.5	mph
85th Percentile	32.5	mph
95th Percentile	35.7	mph
Westbound		
50th Percentile (Median)	28.2	mph
85th Percentile	33.7	mph
95th Percentile	37.4	mph

Total Study Speed Statistics		
Eastbound		
Mean (Average) Speed	26.7	mph
10 mph Pace	23.0 - 33.0	mph
Percent in Pace	63.6	%
Westbound		
Mean (Average) Speed	27.7	mph
10 mph Pace	23.8 - 33.8	mph
Percent in Pace	61.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Wednesday, April 24, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	24	56	28	8	3	0	0	0	0	0	0	0	0	**122**
1:00 AM	0	0	2	3	19	17	12	4	0	0	0	0	0	0	0	0	0	**57**
2:00 AM	0	0	0	1	19	15	12	2	0	0	0	0	0	0	0	0	0	**49**
3:00 AM	0	1	1	5	16	19	12	1	0	0	0	0	0	0	0	0	0	**55**
4:00 AM	0	2	0	10	18	20	5	1	1	0	0	0	0	0	0	0	0	**57**
5:00 AM	0	4	1	14	44	43	14	1	0	0	0	0	0	0	0	0	0	**121**
6:00 AM	0	5	5	29	98	118	38	3	1	0	0	0	0	0	0	0	0	**297**
7:00 AM	0	10	10	87	244	189	37	7	1	0	0	0	0	0	0	0	0	**585**
8:00 AM	1	16	20	95	270	195	41	1	0	1	0	0	0	0	0	0	0	**640**
9:00 AM	1	9	15	101	251	160	46	6	0	0	0	0	0	0	0	0	0	**589**
10:00 AM	5	6	20	115	287	184	25	5	2	0	0	0	0	0	0	0	0	**649**
11:00 AM	1	18	56	215	308	153	23	2	0	0	0	0	0	0	0	0	0	**776**
12:00 PM	41	87	124	215	210	106	10	1	0	0	0	0	0	0	0	0	0	**794**
1:00 PM	9	36	71	193	296	147	33	2	0	0	0	0	0	0	0	0	0	**787**
2:00 PM	41	95	86	186	272	173	39	4	1	0	0	0	0	0	0	0	0	**897**
3:00 PM	4	33	91	215	390	208	43	5	0	0	0	0	0	0	0	0	0	**989**
4:00 PM	33	109	140	256	315	158	27	2	0	1	0	0	0	0	0	0	0	**1,041**
5:00 PM	26	132	167	211	276	118	20	1	1	0	0	0	0	0	0	0	0	**952**
6:00 PM	1	13	16	95	266	198	32	6	2	0	0	0	0	0	0	0	0	**629**
7:00 PM	0	3	7	39	173	133	49	6	1	0	0	0	0	0	0	0	0	**411**
8:00 PM	0	2	7	27	164	113	39	3	1	0	0	0	0	0	0	0	0	**356**
9:00 PM	1	1	3	45	132	115	32	0	1	0	0	0	0	0	0	0	0	**330**
10:00 PM	1	1	4	19	71	81	18	4	0	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	0	0	1	27	32	13	2	2	0	0	0	0	0	0	0	0	**77**
Total	**165**	**583**	**846**	**2,180**	**4,190**	**2,751**	**648**	**77**	**17**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11,459**
Percent	**1.4%**	**5.1%**	**7.4%**	**19.0%**	**36.6%**	**24.0%**	**5.7%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.5	mph	Mean (Average) Speed	26.7	mph
85th Percentile	32.5	mph	10 mph Pace	23.0 - 33.0	mph
95th Percentile	35.7	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Wednesday, April 24, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	3	14	8	21	0	0	0	0	0	0	0	0	0	0	**47**
1:00 AM	1	1	0	2	9	12	5	3	0	0	0	0	0	0	0	0	0	**33**
2:00 AM	0	0	0	1	15	12	5	1	0	0	0	0	0	0	0	0	0	**34**
3:00 AM	0	1	3	4	19	38	20	4	0	0	0	0	0	0	0	0	0	**89**
4:00 AM	0	2	5	6	29	57	24	5	2	0	0	0	0	0	0	0	0	**130**
5:00 AM	0	1	8	18	104	181	87	21	4	0	2	0	0	0	0	0	0	**426**
6:00 AM	0	10	58	150	309	312	134	29	2	2	0	0	0	0	0	0	0	**1,006**
7:00 AM	29	102	183	354	394	273	54	14	0	0	0	0	0	0	0	0	0	**1,403**
8:00 AM	19	51	144	319	473	234	58	16	4	0	0	0	0	0	0	0	0	**1,318**
9:00 AM	1	15	54	161	445	330	105	19	2	1	0	0	0	0	0	0	0	**1,133**
10:00 AM	2	22	101	212	460	324	112	19	5	0	0	0	0	0	0	0	0	**1,257**
11:00 AM	21	86	202	337	373	210	48	11	2	0	0	0	0	0	0	0	0	**1,290**
12:00 PM	5	24	161	299	438	270	63	12	2	1	0	0	0	0	0	0	0	**1,275**
1:00 PM	8	21	102	231	440	329	82	12	2	0	0	0	0	0	0	0	0	**1,227**
2:00 PM	10	34	122	300	390	222	42	9	3	1	0	0	0	0	0	0	0	**1,133**
3:00 PM	2	17	67	205	390	253	61	13	0	1	0	0	0	0	0	0	0	**1,009**
4:00 PM	3	25	73	172	315	236	54	11	4	1	0	0	0	0	0	0	0	**894**
5:00 PM	1	17	86	161	308	230	55	10	4	0	0	0	0	0	0	0	0	**872**
6:00 PM	1	15	39	120	228	270	76	21	3	1	0	0	0	0	0	0	0	**774**
7:00 PM	3	22	57	75	209	245	75	14	1	0	0	0	0	0	0	0	0	**701**
8:00 PM	0	7	44	75	192	202	64	11	2	0	0	0	0	0	0	0	0	**597**
9:00 PM	2	4	21	16	105	161	49	4	2	0	0	0	0	0	0	0	0	**364**
10:00 PM	0	0	8	15	109	152	80	11	3	0	0	0	0	0	0	0	0	**378**
11:00 PM	0	3	1	6	65	130	61	17	6	1	0	0	0	0	0	0	0	**290**
Total	**108**	**481**	**1,539**	**3,242**	**5,833**	**4,691**	**1,435**	**287**	**53**	**9**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**17,680**
Percent	**0.6%**	**2.7%**	**8.7%**	**18.3%**	**33.0%**	**26.5%**	**8.1%**	**1.6%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	28.2	mph	Mean (Average) Speed	27.7	mph
85th Percentile	33.7	mph	10 mph Pace	23.8 - 33.8	mph
95th Percentile	37.4	mph	Percent in Pace	61.24	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	24	56	28	8	3	0	0	0	0	0	0	0	0	**122**
1:00 AM	0	0	2	3	19	17	12	4	0	0	0	0	0	0	0	0	0	**57**
2:00 AM	0	0	0	1	19	15	12	2	0	0	0	0	0	0	0	0	0	**49**
3:00 AM	0	1	1	5	16	19	12	1	0	0	0	0	0	0	0	0	0	**55**
4:00 AM	0	2	0	10	18	20	5	1	1	0	0	0	0	0	0	0	0	**57**
5:00 AM	0	4	1	14	44	43	14	1	0	0	0	0	0	0	0	0	0	**121**
6:00 AM	0	5	5	29	98	118	38	3	1	0	0	0	0	0	0	0	0	**297**
7:00 AM	0	10	10	87	244	189	37	7	1	0	0	0	0	0	0	0	0	**585**
8:00 AM	1	16	20	95	270	195	41	1	0	1	0	0	0	0	0	0	0	**640**
9:00 AM	1	9	15	101	251	160	46	6	0	0	0	0	0	0	0	0	0	**589**
10:00 AM	5	6	20	115	287	184	25	5	2	0	0	0	0	0	0	0	0	**649**
11:00 AM	1	18	56	215	308	153	23	2	0	0	0	0	0	0	0	0	0	**776**
12:00 PM	41	87	124	215	210	106	10	1	0	0	0	0	0	0	0	0	0	**794**
1:00 PM	9	36	71	193	296	147	33	2	0	0	0	0	0	0	0	0	0	**787**
2:00 PM	41	95	86	186	272	173	39	4	1	0	0	0	0	0	0	0	0	**897**
3:00 PM	4	33	91	215	390	208	43	5	0	0	0	0	0	0	0	0	0	**989**
4:00 PM	33	109	140	256	315	158	27	2	0	1	0	0	0	0	0	0	0	**1,041**
5:00 PM	26	132	167	211	276	118	20	1	1	0	0	0	0	0	0	0	0	**952**
6:00 PM	1	13	16	95	266	198	32	6	2	0	0	0	0	0	0	0	0	**629**
7:00 PM	0	3	7	39	173	133	49	6	1	0	0	0	0	0	0	0	0	**411**
8:00 PM	0	2	7	27	164	113	39	3	1	0	0	0	0	0	0	0	0	**356**
9:00 PM	1	1	3	45	132	115	32	0	1	0	0	0	0	0	0	0	0	**330**
10:00 PM	1	1	4	19	71	81	18	4	0	0	0	0	0	0	0	0	0	**199**
11:00 PM	0	0	0	1	27	32	13	2	2	0	0	0	0	0	0	0	0	**77**
Total	**165**	**583**	**846**	**2,180**	**4,190**	**2,751**	**648**	**77**	**17**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11,459**
Percent	**1.4%**	**5.1%**	**7.4%**	**19.0%**	**36.6%**	**24.0%**	**5.7%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.5	mph	Mean (Average) Speed	26.7	mph
85th Percentile	32.5	mph	10 mph Pace	23.0 - 33.0	mph
95th Percentile	35.7	mph	Percent in Pace	63.6	%

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 to 4/24/2019
Site Code: 11

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	3	14	8	21	0	0	0	0	0	0	0	0	0	0	**47**
1:00 AM	1	1	0	2	9	12	5	3	0	0	0	0	0	0	0	0	0	**33**
2:00 AM	0	0	0	1	15	12	5	1	0	0	0	0	0	0	0	0	0	**34**
3:00 AM	0	1	3	4	19	38	20	4	0	0	0	0	0	0	0	0	0	**89**
4:00 AM	0	2	5	6	29	57	24	5	2	0	0	0	0	0	0	0	0	**130**
5:00 AM	0	1	8	18	104	181	87	21	4	0	2	0	0	0	0	0	0	**426**
6:00 AM	0	10	58	150	309	312	134	29	2	2	0	0	0	0	0	0	0	**1,006**
7:00 AM	29	102	183	354	394	273	54	14	0	0	0	0	0	0	0	0	0	**1,403**
8:00 AM	19	51	144	319	473	234	58	16	4	0	0	0	0	0	0	0	0	**1,318**
9:00 AM	1	15	54	161	445	330	105	19	2	1	0	0	0	0	0	0	0	**1,133**
10:00 AM	2	22	101	212	460	324	112	19	5	0	0	0	0	0	0	0	0	**1,257**
11:00 AM	21	86	202	337	373	210	48	11	2	0	0	0	0	0	0	0	0	**1,290**
12:00 PM	5	24	161	299	438	270	63	12	2	1	0	0	0	0	0	0	0	**1,275**
1:00 PM	8	21	102	231	440	329	82	12	2	0	0	0	0	0	0	0	0	**1,227**
2:00 PM	10	34	122	300	390	222	42	9	3	1	0	0	0	0	0	0	0	**1,133**
3:00 PM	2	17	67	205	390	253	61	13	0	1	0	0	0	0	0	0	0	**1,009**
4:00 PM	3	25	73	172	315	236	54	11	4	1	0	0	0	0	0	0	0	**894**
5:00 PM	1	17	86	161	308	230	55	10	4	0	0	0	0	0	0	0	0	**872**
6:00 PM	1	15	39	120	228	270	76	21	3	1	0	0	0	0	0	0	0	**774**
7:00 PM	3	22	57	75	209	245	75	14	1	0	0	0	0	0	0	0	0	**701**
8:00 PM	0	7	44	75	192	202	64	11	2	0	0	0	0	0	0	0	0	**597**
9:00 PM	2	4	21	16	105	161	49	4	2	0	0	0	0	0	0	0	0	**364**
10:00 PM	0	0	8	15	109	152	80	11	3	0	0	0	0	0	0	0	0	**378**
11:00 PM	0	3	1	6	65	130	61	17	6	1	0	0	0	0	0	0	0	**290**
Total	**108**	**481**	**1,539**	**3,242**	**5,833**	**4,691**	**1,435**	**287**	**53**	**9**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**17,680**
Percent	**0.6%**	**2.7%**	**8.7%**	**18.3%**	**33.0%**	**26.5%**	**8.1%**	**1.6%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	28.2	mph	Mean (Average) Speed	27.7	mph
85th Percentile	33.7	mph	10 mph Pace	23.8 - 33.8	mph
95th Percentile	37.4	mph	Percent in Pace	61.2	%

Location: Bellam Blvd, B/W Andersen & Kerner
Date Range: 4/24/2019 - 4/30/2019
Site Code: 11

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	122	47	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	47	169
1:00 AM	57	33	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	33	90
2:00 AM	49	34	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	34	83
3:00 AM	55	89	144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	89	144
4:00 AM	57	130	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	130	187
5:00 AM	121	426	547	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	426	547
6:00 AM	297	1,006	1,303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	297	1,006	1,303
7:00 AM	585	**1,403**	1,988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	585	**1,403**	1,988
8:00 AM	640	1,318	1,958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	640	1,318	1,958
9:00 AM	589	1,133	1,722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	589	1,133	1,722
10:00 AM	649	1,257	1,906	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	649	1,257	1,906
11:00 AM	**776**	1,290	**2,066**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**776**	1,290	**2,066**
12:00 PM	794	**1,275**	**2,069**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	794	**1,275**	**2,069**
1:00 PM	787	1,227	2,014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	787	1,227	2,014
2:00 PM	897	1,133	2,030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	897	1,133	2,030
3:00 PM	989	1,009	1,998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	989	1,009	1,998
4:00 PM	**1,041**	894	1,935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,041**	894	1,935
5:00 PM	952	872	1,824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	952	872	1,824
6:00 PM	629	774	1,403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	629	774	1,403
7:00 PM	411	701	1,112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	411	701	1,112
8:00 PM	356	597	953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	356	597	953
9:00 PM	330	364	694	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	364	694
10:00 PM	199	378	577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	378	577
11:00 PM	77	290	367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	290	367
Total	11,459	17,680	29,139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,459	17,680	29,139
Percent	39%	61%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39%	61%	-
AM Peak	11:00	07:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	11:00
Vol.	776	1,403	2,066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	776	1,403	2,066
PM Peak	16:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	12:00	12:00
Vol.	1,041	1,275	2,069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,041	1,275	2,069

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Civic Center, B/W Freitas & Merrydale O/C

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 12

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	28	4,671	696	0	245	8	0	1	3	4	0	0	3	5,659
Percent	0.5%	82.5%	12.3%	0.0%	4.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%
Southbound	28	6,007	627	0	153	11	0	1	10	0	0	0	0	6,837
Percent	0.4%	87.9%	9.2%	0.0%	2.2%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	56	10,678	1,323	0	398	19	0	2	13	4	0	0	3	12,496
Percent	0.4%	85.5%	10.6%	0.0%	3.2%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	19	4	0	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	6	0	8	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	131	21	0	18	1	0	0	0	0	0	0	0	**172**
8:00 AM	2	212	27	0	12	0	0	0	1	0	0	0	0	**254**
9:00 AM	1	250	47	0	16	1	0	0	0	1	0	0	0	**316**
10:00 AM	2	284	56	0	19	1	0	0	0	0	0	0	1	**363**
11:00 AM	1	343	54	0	20	1	0	0	0	1	0	0	0	**420**
12:00 PM	2	397	65	0	27	0	0	0	0	1	0	0	1	**493**
1:00 PM	3	298	54	0	28	0	0	0	1	0	0	0	0	**384**
2:00 PM	2	320	74	0	17	1	0	0	0	0	0	0	0	**414**
3:00 PM	2	365	40	0	22	0	0	0	0	1	0	0	0	**430**
4:00 PM	2	455	65	0	11	1	0	0	1	0	0	0	1	**536**
5:00 PM	4	459	49	0	11	2	0	1	0	0	0	0	0	**526**
6:00 PM	0	269	30	0	10	0	0	0	0	0	0	0	0	**309**
7:00 PM	3	203	27	0	5	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	145	15	0	3	0	0	0	0	0	0	0	0	**164**
9:00 PM	1	339	34	0	5	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	52	15	0	5	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	40	4	0	3	0	0	0	0	0	0	0	0	**47**
Total	**28**	**4,671**	**696**	**0**	**245**	**8**	**0**	**1**	**3**	**4**	**0**	**0**	**3**	**5,659**
Percent	**0.5%**	**82.5%**	**12.3%**	**0.0%**	**4.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	2	0	1	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	8	3	0	0	1	0	0	1	0	0	0	0	**13**
5:00 AM	1	88	18	0	10	2	0	0	2	0	0	0	0	**121**
6:00 AM	4	170	30	0	10	1	0	0	2	0	0	0	0	**217**
7:00 AM	3	387	46	0	20	0	0	1	0	0	0	0	0	**457**
8:00 AM	1	469	49	0	16	2	0	0	0	0	0	0	0	**537**
9:00 AM	3	445	47	0	13	0	0	0	2	0	0	0	0	**510**
10:00 AM	2	370	35	0	5	1	0	0	0	0	0	0	0	**413**
11:00 AM	2	367	38	0	9	1	0	0	0	0	0	0	0	**417**
12:00 PM	0	411	49	0	6	0	0	0	1	0	0	0	0	**467**
1:00 PM	1	365	28	0	7	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	358	31	0	3	0	0	0	0	0	0	0	0	**392**
3:00 PM	3	397	43	0	5	1	0	0	0	0	0	0	0	**449**
4:00 PM	2	419	48	0	11	1	0	0	1	0	0	0	0	**482**
5:00 PM	2	506	51	0	10	0	0	0	0	0	0	0	0	**569**
6:00 PM	1	471	38	0	9	1	0	0	0	0	0	0	0	**520**
7:00 PM	1	356	24	0	4	0	0	0	0	0	0	0	0	**385**
8:00 PM	1	176	21	0	9	0	0	0	0	0	0	0	0	**207**
9:00 PM	1	130	13	0	2	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	67	9	0	1	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
Total	**28**	**6,007**	**627**	**0**	**153**	**11**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.4%**	**87.9%**	**9.2%**	**0.0%**	**2.2%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

DATA SOLUTIONS

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	19	4	0	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	6	0	8	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	131	21	0	18	1	0	0	0	0	0	0	0	**172**
8:00 AM	2	212	27	0	12	0	0	0	1	0	0	0	0	**254**
9:00 AM	1	250	47	0	16	1	0	0	0	1	0	0	0	**316**
10:00 AM	2	284	56	0	19	1	0	0	0	0	0	0	1	**363**
11:00 AM	1	343	54	0	20	1	0	0	0	1	0	0	0	**420**
12:00 PM	2	397	65	0	27	0	0	0	0	1	0	0	1	**493**
1:00 PM	3	298	54	0	28	0	0	0	1	0	0	0	0	**384**
2:00 PM	2	320	74	0	17	1	0	0	0	0	0	0	0	**414**
3:00 PM	2	365	40	0	22	0	0	0	0	1	0	0	0	**430**
4:00 PM	2	455	65	0	11	1	0	0	1	0	0	0	1	**536**
5:00 PM	4	459	49	0	11	2	0	1	0	0	0	0	0	**526**
6:00 PM	0	269	30	0	10	0	0	0	0	0	0	0	0	**309**
7:00 PM	3	203	27	0	5	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	145	15	0	3	0	0	0	0	0	0	0	0	**164**
9:00 PM	1	339	34	0	5	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	52	15	0	5	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	40	4	0	3	0	0	0	0	0	0	0	0	**47**
Total	**28**	**4,671**	**696**	**0**	**245**	**8**	**0**	**1**	**3**	**4**	**0**	**0**	**3**	**5,659**
Percent	**0.5%**	**82.5%**	**12.3%**	**0.0%**	**4.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

DATA SOLUTIONS

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	2	0	1	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	8	3	0	0	1	0	0	1	0	0	0	0	**13**
5:00 AM	1	88	18	0	10	2	0	0	2	0	0	0	0	**121**
6:00 AM	4	170	30	0	10	1	0	0	2	0	0	0	0	**217**
7:00 AM	3	387	46	0	20	0	0	1	0	0	0	0	0	**457**
8:00 AM	1	469	49	0	16	2	0	0	0	0	0	0	0	**537**
9:00 AM	3	445	47	0	13	0	0	0	2	0	0	0	0	**510**
10:00 AM	2	370	35	0	5	1	0	0	0	0	0	0	0	**413**
11:00 AM	2	367	38	0	9	1	0	0	0	0	0	0	0	**417**
12:00 PM	0	411	49	0	6	0	0	0	1	0	0	0	0	**467**
1:00 PM	1	365	28	0	7	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	358	31	0	3	0	0	0	0	0	0	0	0	**392**
3:00 PM	3	397	43	0	5	1	0	0	0	0	0	0	0	**449**
4:00 PM	2	419	48	0	11	1	0	0	1	0	0	0	0	**482**
5:00 PM	2	506	51	0	10	0	0	0	0	0	0	0	0	**569**
6:00 PM	1	471	38	0	9	1	0	0	0	0	0	0	0	**520**
7:00 PM	1	356	24	0	4	0	0	0	0	0	0	0	0	**385**
8:00 PM	1	176	21	0	9	0	0	0	0	0	0	0	0	**207**
9:00 PM	1	130	13	0	2	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	67	9	0	1	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
Total	**28**	**6,007**	**627**	**0**	**153**	**11**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.4%**	**87.9%**	**9.2%**	**0.0%**	**2.2%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	19	4	0	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	6	0	8	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	131	21	0	18	1	0	0	0	0	0	0	0	**172**
8:00 AM	2	212	27	0	12	0	0	0	1	0	0	0	0	**254**
9:00 AM	1	250	47	0	16	1	0	0	0	1	0	0	0	**316**
10:00 AM	2	284	56	0	19	1	0	0	0	0	0	0	1	**363**
11:00 AM	1	343	54	0	20	1	0	0	0	1	0	0	0	**420**
12:00 PM	2	397	65	0	27	0	0	0	0	1	0	0	1	**493**
1:00 PM	3	298	54	0	28	0	0	0	1	0	0	0	0	**384**
2:00 PM	2	320	74	0	17	1	0	0	0	0	0	0	0	**414**
3:00 PM	2	365	40	0	22	0	0	0	0	1	0	0	0	**430**
4:00 PM	2	455	65	0	11	1	0	0	1	0	0	0	1	**536**
5:00 PM	4	459	49	0	11	2	0	1	0	0	0	0	0	**526**
6:00 PM	0	269	30	0	10	0	0	0	0	0	0	0	0	**309**
7:00 PM	3	203	27	0	5	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	145	15	0	3	0	0	0	0	0	0	0	0	**164**
9:00 PM	1	339	34	0	5	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	52	15	0	5	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	40	4	0	3	0	0	0	0	0	0	0	0	**47**
Total	**28**	**4,671**	**696**	**0**	**245**	**8**	**0**	**1**	**3**	**4**	**0**	**0**	**3**	**5,659**
Percent	**0.5%**	**82.5%**	**12.3%**	**0.0%**	**4.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	2	0	1	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	8	3	0	0	1	0	0	1	0	0	0	0	**13**
5:00 AM	1	88	18	0	10	2	0	0	2	0	0	0	0	**121**
6:00 AM	4	170	30	0	10	1	0	0	2	0	0	0	0	**217**
7:00 AM	3	387	46	0	20	0	0	1	0	0	0	0	0	**457**
8:00 AM	1	469	49	0	16	2	0	0	0	0	0	0	0	**537**
9:00 AM	3	445	47	0	13	0	0	0	2	0	0	0	0	**510**
10:00 AM	2	370	35	0	5	1	0	0	0	0	0	0	0	**413**
11:00 AM	2	367	38	0	9	1	0	0	0	0	0	0	0	**417**
12:00 PM	0	411	49	0	6	0	0	0	1	0	0	0	0	**467**
1:00 PM	1	365	28	0	7	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	358	31	0	3	0	0	0	0	0	0	0	0	**392**
3:00 PM	3	397	43	0	5	1	0	0	0	0	0	0	0	**449**
4:00 PM	2	419	48	0	11	1	0	0	1	0	0	0	0	**482**
5:00 PM	2	506	51	0	10	0	0	0	0	0	0	0	0	**569**
6:00 PM	1	471	38	0	9	1	0	0	0	0	0	0	0	**520**
7:00 PM	1	356	24	0	4	0	0	0	0	0	0	0	0	**385**
8:00 PM	1	176	21	0	9	0	0	0	0	0	0	0	0	**207**
9:00 PM	1	130	13	0	2	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	67	9	0	1	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	32	3	0	0	0	0	0	0	0	0	0	0	**35**
Total	**28**	**6,007**	**627**	**0**	**153**	**11**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.4%**	**87.9%**	**9.2%**	**0.0%**	**2.2%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Civic Center, B/W Freitas & Merrydale O/C

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 12

	Speed Range (mph)																Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	10	4	20	190	1,235	2,511	1,398	244	39	8	0	0	0	0	0	0	0	5,659
Percent	0.2%	0.1%	0.4%	3.4%	21.8%	44.4%	24.7%	4.3%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	4	10	22	183	1,895	3,414	1,150	136	20	3	0	0	0	0	0	0	0	6,837
Percent	0.1%	0.1%	0.3%	2.7%	27.7%	49.9%	16.8%	2.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	14	14	42	373	3,130	5,925	2,548	380	59	11	0	0	0	0	0	0	0	12,496
Percent	0.1%	0.1%	0.3%	3.0%	25.0%	47.4%	20.4%	3.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.8	mph
85th Percentile	37.2	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	40.0	mph	Percent in Pace	75.3	%
Southbound			**Southbound**		
50th Percentile (Median)	31.8	mph	Mean (Average) Speed	31.9	mph
85th Percentile	35.6	mph	10 mph Pace	27.1 - 37.1	mph
95th Percentile	38.4	mph	Percent in Pace	82.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	8	6	1	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	1	1	2	4	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	0	1	6	0	2	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	0	1	0	4	10	6	3	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	0	0	1	10	29	22	9	2	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	0	1	2	26	70	55	14	2	1	0	0	0	0	0	0	0	**172**
8:00 AM	0	0	2	4	58	113	60	16	1	0	0	0	0	0	0	0	0	**254**
9:00 AM	1	0	0	4	95	131	76	7	0	2	0	0	0	0	0	0	0	**316**
10:00 AM	0	1	0	12	83	175	77	14	1	0	0	0	0	0	0	0	0	**363**
11:00 AM	1	0	2	8	102	184	97	22	4	0	0	0	0	0	0	0	0	**420**
12:00 PM	0	0	4	15	117	218	118	17	4	0	0	0	0	0	0	0	0	**493**
1:00 PM	1	0	0	14	81	176	94	16	2	0	0	0	0	0	0	0	0	**384**
2:00 PM	1	0	4	16	82	193	99	16	2	1	0	0	0	0	0	0	0	**414**
3:00 PM	0	1	2	14	80	199	114	17	3	0	0	0	0	0	0	0	0	**430**
4:00 PM	0	0	0	15	104	257	131	23	3	3	0	0	0	0	0	0	0	**536**
5:00 PM	2	1	0	23	111	237	134	15	3	0	0	0	0	0	0	0	0	**526**
6:00 PM	0	0	0	3	48	134	100	22	1	1	0	0	0	0	0	0	0	**309**
7:00 PM	2	1	0	2	53	115	54	7	4	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	0	0	5	30	77	44	6	1	0	0	0	0	0	0	0	0	**164**
9:00 PM	0	0	4	47	129	140	56	2	1	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	0	0	3	13	25	22	8	1	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	0	0	1	5	15	17	9	0	0	0	0	0	0	0	0	0	**47**
Total	**10**	**4**	**20**	**190**	**1,235**	**2,511**	**1,398**	**244**	**39**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,659**
Percent	**0.2%**	**0.1%**	**0.4%**	**3.4%**	**21.8%**	**44.4%**	**24.7%**	**4.3%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.8	mph
85th Percentile	37.2	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	40.0	mph	Percent in Pace	75.3	%

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	4	2	0	0	1	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	2	1	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	1	4	3	4	1	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	0	0	3	5	30	52	26	5	0	0	0	0	0	0	0	0	0	**121**
6:00 AM	0	0	2	9	37	103	49	13	4	0	0	0	0	0	0	0	0	**217**
7:00 AM	0	0	2	19	105	230	89	11	1	0	0	0	0	0	0	0	0	**457**
8:00 AM	0	0	1	12	132	283	94	13	2	0	0	0	0	0	0	0	0	**537**
9:00 AM	0	0	2	16	141	249	92	10	0	0	0	0	0	0	0	0	0	**510**
10:00 AM	0	0	0	9	133	194	69	7	1	0	0	0	0	0	0	0	0	**413**
11:00 AM	0	0	1	7	110	213	81	5	0	0	0	0	0	0	0	0	0	**417**
12:00 PM	0	1	2	15	164	230	52	3	0	0	0	0	0	0	0	0	0	**467**
1:00 PM	0	0	0	7	119	217	53	4	1	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	0	1	7	121	213	44	6	0	0	0	0	0	0	0	0	0	**392**
3:00 PM	1	0	2	16	127	230	64	8	1	0	0	0	0	0	0	0	0	**449**
4:00 PM	2	5	0	13	151	225	75	10	1	0	0	0	0	0	0	0	0	**482**
5:00 PM	1	2	0	13	146	269	123	12	3	0	0	0	0	0	0	0	0	**569**
6:00 PM	0	0	0	9	142	256	99	10	2	2	0	0	0	0	0	0	0	**520**
7:00 PM	0	2	6	7	89	205	72	4	0	0	0	0	0	0	0	0	0	**385**
8:00 PM	0	0	0	8	65	106	24	4	0	0	0	0	0	0	0	0	0	**207**
9:00 PM	0	0	0	3	44	77	17	4	1	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	0	0	2	20	39	12	1	3	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	0	0	4	8	12	6	5	0	0	0	0	0	0	0	0	0	**35**
Total	**4**	**10**	**22**	**183**	**1,895**	**3,414**	**1,150**	**136**	**20**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.1%**	**0.1%**	**0.3%**	**2.7%**	**27.7%**	**49.9%**	**16.8%**	**2.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	31.8	mph	Mean (Average) Speed	31.9	mph
85th Percentile	35.6	mph	10 mph Pace	27.1 - 37.1	mph
95th Percentile	38.4	mph	Percent in Pace	82.46	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	8	6	1	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	1	1	2	4	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	0	1	6	0	2	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	0	1	0	4	10	6	3	2	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	0	0	1	10	29	22	9	2	0	0	0	0	0	0	0	0	**73**
7:00 AM	1	0	1	2	26	70	55	14	2	1	0	0	0	0	0	0	0	**172**
8:00 AM	0	0	2	4	58	113	60	16	1	0	0	0	0	0	0	0	0	**254**
9:00 AM	1	0	0	4	95	131	76	7	0	2	0	0	0	0	0	0	0	**316**
10:00 AM	0	1	0	12	83	175	77	14	1	0	0	0	0	0	0	0	0	**363**
11:00 AM	1	0	2	8	102	184	97	22	4	0	0	0	0	0	0	0	0	**420**
12:00 PM	0	0	4	15	117	218	118	17	4	0	0	0	0	0	0	0	0	**493**
1:00 PM	1	0	0	14	81	176	94	16	2	0	0	0	0	0	0	0	0	**384**
2:00 PM	1	0	4	16	82	193	99	16	2	1	0	0	0	0	0	0	0	**414**
3:00 PM	0	1	2	14	80	199	114	17	3	0	0	0	0	0	0	0	0	**430**
4:00 PM	0	0	0	15	104	257	131	23	3	3	0	0	0	0	0	0	0	**536**
5:00 PM	2	1	0	23	111	237	134	15	3	0	0	0	0	0	0	0	0	**526**
6:00 PM	0	0	0	3	48	134	100	22	1	1	0	0	0	0	0	0	0	**309**
7:00 PM	2	1	0	2	53	115	54	7	4	0	0	0	0	0	0	0	0	**238**
8:00 PM	1	0	0	5	30	77	44	6	1	0	0	0	0	0	0	0	0	**164**
9:00 PM	0	0	4	47	129	140	56	2	1	0	0	0	0	0	0	0	0	**379**
10:00 PM	0	0	0	3	13	25	22	8	1	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	0	0	1	5	15	17	9	0	0	0	0	0	0	0	0	0	**47**
Total	**10**	**4**	**20**	**190**	**1,235**	**2,511**	**1,398**	**244**	**39**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,659**
Percent	**0.2%**	**0.1%**	**0.4%**	**3.4%**	**21.8%**	**44.4%**	**24.7%**	**4.3%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.8	mph
85th Percentile	37.2	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	40.0	mph	Percent in Pace	75.3	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 to 4/25/2019
Site Code: 12

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	4	2	0	0	1	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	2	1	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	1	4	3	4	1	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	0	0	3	5	30	52	26	5	0	0	0	0	0	0	0	0	0	**121**
6:00 AM	0	0	2	9	37	103	49	13	4	0	0	0	0	0	0	0	0	**217**
7:00 AM	0	0	2	19	105	230	89	11	1	0	0	0	0	0	0	0	0	**457**
8:00 AM	0	0	1	12	132	283	94	13	2	0	0	0	0	0	0	0	0	**537**
9:00 AM	0	0	2	16	141	249	92	10	0	0	0	0	0	0	0	0	0	**510**
10:00 AM	0	0	0	9	133	194	69	7	1	0	0	0	0	0	0	0	0	**413**
11:00 AM	0	0	1	7	110	213	81	5	0	0	0	0	0	0	0	0	0	**417**
12:00 PM	0	1	2	15	164	230	52	3	0	0	0	0	0	0	0	0	0	**467**
1:00 PM	0	0	0	7	119	217	53	4	1	0	0	0	0	0	0	0	0	**401**
2:00 PM	0	0	1	7	121	213	44	6	0	0	0	0	0	0	0	0	0	**392**
3:00 PM	1	0	2	16	127	230	64	8	1	0	0	0	0	0	0	0	0	**449**
4:00 PM	2	5	0	13	151	225	75	10	1	0	0	0	0	0	0	0	0	**482**
5:00 PM	1	2	0	13	146	269	123	12	3	0	0	0	0	0	0	0	0	**569**
6:00 PM	0	0	0	9	142	256	99	10	2	2	0	0	0	0	0	0	0	**520**
7:00 PM	0	2	6	7	89	205	72	4	0	0	0	0	0	0	0	0	0	**385**
8:00 PM	0	0	0	8	65	106	24	4	0	0	0	0	0	0	0	0	0	**207**
9:00 PM	0	0	0	3	44	77	17	4	1	0	0	0	0	0	0	0	0	**146**
10:00 PM	0	0	0	2	20	39	12	1	3	0	0	0	0	0	0	0	0	**77**
11:00 PM	0	0	0	4	8	12	6	5	0	0	0	0	0	0	0	0	0	**35**
Total	**4**	**10**	**22**	**183**	**1,895**	**3,414**	**1,150**	**136**	**20**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,837**
Percent	**0.1%**	**0.1%**	**0.3%**	**2.7%**	**27.7%**	**49.9%**	**16.8%**	**2.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	31.8	mph	Mean (Average) Speed	31.9	mph
85th Percentile	35.6	mph	10 mph Pace	27.1 - 37.1	mph
95th Percentile	38.4	mph	Percent in Pace	82.5	%

Location: Civic Center, B/W Freitas & Merrydale O/C
Date Range: 4/25/2019 - 5/1/2019
Site Code: 12

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	17	9	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	9	26
1:00 AM	8	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	5	13
2:00 AM	6	4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	4	10
3:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
4:00 AM	9	13	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	13	22
5:00 AM	26	121	147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	121	147
6:00 AM	73	217	290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	217	290
7:00 AM	172	457	629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	457	629
8:00 AM	254	**537**	791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254	**537**	791
9:00 AM	316	510	826	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	510	826
10:00 AM	363	413	776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	363	413	776
11:00 AM	**420**	417	**837**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**420**	417	**837**
12:00 PM	493	467	960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	493	467	960
1:00 PM	384	401	785	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	384	401	785
2:00 PM	414	392	806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	414	392	806
3:00 PM	430	449	879	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	430	449	879
4:00 PM	**536**	482	1,018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**536**	482	1,018
5:00 PM	526	**569**	**1,095**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	526	**569**	**1,095**
6:00 PM	309	520	829	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	309	520	829
7:00 PM	238	385	623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238	385	623
8:00 PM	164	207	371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	207	371
9:00 PM	379	146	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	379	146	525
10:00 PM	72	77	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	77	149
11:00 PM	47	35	82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	35	82
Total	5,659	6,837	12,496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,659	6,837	12,496
Percent	45%	55%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45%	55%	-
AM Peak	11:00	08:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	11:00
Vol.	420	537	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	537	837
PM Peak	16:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	17:00	17:00
Vol.	536	569	1,095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	536	569	1,095

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Civic Center, B/W Merrydale O/C & N San Pedro

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 13

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	48	3,022	348	0	99	2	0	1	3	1	0	0	0	3,524
Percent	1.4%	85.8%	9.9%	0.0%	2.8%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	18	3,330	592	2	206	5	0	0	6	0	0	0	0	4,159
Percent	0.4%	80.1%	14.2%	0.0%	5.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	66	6,352	940	2	305	7	0	1	9	1	0	0	0	7,683
Percent	0.9%	82.7%	12.2%	0.0%	4.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	1	12	4	0	4	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	42	18	0	8	0	0	0	0	0	0	0	0	**70**
7:00 AM	3	147	35	0	11	0	0	0	0	0	0	0	0	**196**
8:00 AM	5	278	24	0	5	0	0	0	0	0	0	0	0	**312**
9:00 AM	3	311	35	0	9	0	0	0	0	0	0	0	0	**358**
10:00 AM	5	250	28	0	9	0	0	0	0	0	0	0	0	**292**
11:00 AM	4	263	28	0	9	0	0	1	1	0	0	0	0	**306**
12:00 PM	1	226	26	0	9	0	0	0	1	0	0	0	0	**263**
1:00 PM	0	148	21	0	5	0	0	0	0	0	0	0	0	**174**
2:00 PM	4	145	23	0	8	0	0	0	0	0	0	0	0	**180**
3:00 PM	4	134	21	0	6	0	0	0	1	0	0	0	0	**166**
4:00 PM	4	150	20	0	3	1	0	0	0	0	0	0	0	**178**
5:00 PM	2	150	13	0	2	0	0	0	0	0	0	0	0	**167**
6:00 PM	4	292	18	0	5	0	0	0	0	0	0	0	0	**319**
7:00 PM	5	329	19	0	4	1	0	0	0	1	0	0	0	**359**
8:00 PM	1	69	7	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	30	3	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Total	**48**	**3,022**	**348**	**0**	**99**	**2**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**3,524**
Percent	**1.4%**	**85.8%**	**9.9%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	**7**
5:00 AM	0	14	4	0	0	0	0	0	1	0	0	0	0	**19**
6:00 AM	4	33	10	0	6	1	0	0	2	0	0	0	0	**56**
7:00 AM	2	153	28	1	20	2	0	0	0	0	0	0	0	**206**
8:00 AM	1	267	46	0	22	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	263	55	0	12	0	0	0	1	0	0	0	0	**331**
10:00 AM	2	229	50	0	12	0	0	0	0	0	0	0	0	**293**
11:00 AM	1	305	38	0	14	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	272	40	0	21	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	198	58	0	18	0	0	0	1	0	0	0	0	**275**
2:00 PM	2	192	36	0	13	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	172	32	0	13	0	0	0	0	0	0	0	0	**217**
4:00 PM	1	251	43	0	17	0	0	0	0	0	0	0	0	**312**
5:00 PM	2	292	52	1	20	0	0	0	0	0	0	0	0	**367**
6:00 PM	1	170	30	0	4	1	0	0	0	0	0	0	0	**206**
7:00 PM	1	141	14	0	4	1	0	0	0	0	0	0	0	**161**
8:00 PM	1	86	16	0	3	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	251	32	0	6	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	**15**
Total	**18**	**3,330**	**592**	**2**	**206**	**5**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**4,159**
Percent	**0.4%**	**80.1%**	**14.2%**	**0.0%**	**5.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	1	12	4	0	4	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	42	18	0	8	0	0	0	0	0	0	0	0	**70**
7:00 AM	3	147	35	0	11	0	0	0	0	0	0	0	0	**196**
8:00 AM	5	278	24	0	5	0	0	0	0	0	0	0	0	**312**
9:00 AM	3	311	35	0	9	0	0	0	0	0	0	0	0	**358**
10:00 AM	5	250	28	0	9	0	0	0	0	0	0	0	0	**292**
11:00 AM	4	263	28	0	9	0	0	1	1	0	0	0	0	**306**
12:00 PM	1	226	26	0	9	0	0	0	1	0	0	0	0	**263**
1:00 PM	0	148	21	0	5	0	0	0	0	0	0	0	0	**174**
2:00 PM	4	145	23	0	8	0	0	0	0	0	0	0	0	**180**
3:00 PM	4	134	21	0	6	0	0	0	1	0	0	0	0	**166**
4:00 PM	4	150	20	0	3	1	0	0	0	0	0	0	0	**178**
5:00 PM	2	150	13	0	2	0	0	0	0	0	0	0	0	**167**
6:00 PM	4	292	18	0	5	0	0	0	0	0	0	0	0	**319**
7:00 PM	5	329	19	0	4	1	0	0	0	1	0	0	0	**359**
8:00 PM	1	69	7	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	30	3	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Total	**48**	**3,022**	**348**	**0**	**99**	**2**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**3,524**
Percent	**1.4%**	**85.8%**	**9.9%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	**7**
5:00 AM	0	14	4	0	0	0	0	0	1	0	0	0	0	**19**
6:00 AM	4	33	10	0	6	1	0	0	2	0	0	0	0	**56**
7:00 AM	2	153	28	1	20	2	0	0	0	0	0	0	0	**206**
8:00 AM	1	267	46	0	22	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	263	55	0	12	0	0	0	1	0	0	0	0	**331**
10:00 AM	2	229	50	0	12	0	0	0	0	0	0	0	0	**293**
11:00 AM	1	305	38	0	14	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	272	40	0	21	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	198	58	0	18	0	0	0	1	0	0	0	0	**275**
2:00 PM	2	192	36	0	13	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	172	32	0	13	0	0	0	0	0	0	0	0	**217**
4:00 PM	1	251	43	0	17	0	0	0	0	0	0	0	0	**312**
5:00 PM	2	292	52	1	20	0	0	0	0	0	0	0	0	**367**
6:00 PM	1	170	30	0	4	1	0	0	0	0	0	0	0	**206**
7:00 PM	1	141	14	0	4	1	0	0	0	0	0	0	0	**161**
8:00 PM	1	86	16	0	3	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	251	32	0	6	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	**15**
Total	**18**	**3,330**	**592**	**2**	**206**	**5**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**4,159**
Percent	**0.4%**	**80.1%**	**14.2%**	**0.0%**	**5.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	1	12	4	0	4	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	42	18	0	8	0	0	0	0	0	0	0	0	**70**
7:00 AM	3	147	35	0	11	0	0	0	0	0	0	0	0	**196**
8:00 AM	5	278	24	0	5	0	0	0	0	0	0	0	0	**312**
9:00 AM	3	311	35	0	9	0	0	0	0	0	0	0	0	**358**
10:00 AM	5	250	28	0	9	0	0	0	0	0	0	0	0	**292**
11:00 AM	4	263	28	0	9	0	0	1	1	0	0	0	0	**306**
12:00 PM	1	226	26	0	9	0	0	0	1	0	0	0	0	**263**
1:00 PM	0	148	21	0	5	0	0	0	0	0	0	0	0	**174**
2:00 PM	4	145	23	0	8	0	0	0	0	0	0	0	0	**180**
3:00 PM	4	134	21	0	6	0	0	0	1	0	0	0	0	**166**
4:00 PM	4	150	20	0	3	1	0	0	0	0	0	0	0	**178**
5:00 PM	2	150	13	0	2	0	0	0	0	0	0	0	0	**167**
6:00 PM	4	292	18	0	5	0	0	0	0	0	0	0	0	**319**
7:00 PM	5	329	19	0	4	1	0	0	0	1	0	0	0	**359**
8:00 PM	1	69	7	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	30	3	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
Total	**48**	**3,022**	**348**	**0**	**99**	**2**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**3,524**
Percent	**1.4%**	**85.8%**	**9.9%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	**7**
5:00 AM	0	14	4	0	0	0	0	0	1	0	0	0	0	**19**
6:00 AM	4	33	10	0	6	1	0	0	2	0	0	0	0	**56**
7:00 AM	2	153	28	1	20	2	0	0	0	0	0	0	0	**206**
8:00 AM	1	267	46	0	22	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	263	55	0	12	0	0	0	1	0	0	0	0	**331**
10:00 AM	2	229	50	0	12	0	0	0	0	0	0	0	0	**293**
11:00 AM	1	305	38	0	14	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	272	40	0	21	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	198	58	0	18	0	0	0	1	0	0	0	0	**275**
2:00 PM	2	192	36	0	13	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	172	32	0	13	0	0	0	0	0	0	0	0	**217**
4:00 PM	1	251	43	0	17	0	0	0	0	0	0	0	0	**312**
5:00 PM	2	292	52	1	20	0	0	0	0	0	0	0	0	**367**
6:00 PM	1	170	30	0	4	1	0	0	0	0	0	0	0	**206**
7:00 PM	1	141	14	0	4	1	0	0	0	0	0	0	0	**161**
8:00 PM	1	86	16	0	3	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	251	32	0	6	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	**15**
Total	**18**	**3,330**	**592**	**2**	**206**	**5**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**4,159**
Percent	**0.4%**	**80.1%**	**14.2%**	**0.0%**	**5.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Civic Center, B/W Merrydale O/C & N San Pedro

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 13

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	128	149	149	555	1,617	829	86	9	2	0	0	0	0	0	0	0	0	3,524
Percent	3.6%	4.2%	4.2%	15.7%	45.9%	23.5%	2.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	152	48	84	383	1,505	1,516	418	48	3	2	0	0	0	0	0	0	0	4,159
Percent	3.7%	1.2%	2.0%	9.2%	36.2%	36.5%	10.1%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	280	197	233	938	3,122	2,345	504	57	5	2	0	0	0	0	0	0	0	7,683
Percent	3.6%	2.6%	3.0%	12.2%	40.6%	30.5%	6.6%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	27.6	mph	Mean (Average) Speed	26.4	mph
85th Percentile	31.4	mph	10 mph Pace	23.4 - 33.4	mph
95th Percentile	34.0	mph	Percent in Pace	73.9	%
Southbound			**Southbound**		
50th Percentile (Median)	29.8	mph	Mean (Average) Speed	28.9	mph
85th Percentile	34.2	mph	10 mph Pace	25.1 - 35.1	mph
95th Percentile	36.9	mph	Percent in Pace	72.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	1	4	0	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	0	0	7	11	2	1	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	1	2	5	24	32	4	1	1	0	0	0	0	0	0	0	0	**70**
7:00 AM	0	0	2	5	70	99	19	1	0	0	0	0	0	0	0	0	0	**196**
8:00 AM	0	1	2	24	184	95	6	0	0	0	0	0	0	0	0	0	0	**312**
9:00 AM	0	1	6	50	214	80	7	0	0	0	0	0	0	0	0	0	0	**358**
10:00 AM	0	0	6	52	181	46	7	0	0	0	0	0	0	0	0	0	0	**292**
11:00 AM	2	0	13	78	157	53	3	0	0	0	0	0	0	0	0	0	0	**306**
12:00 PM	1	5	9	60	131	53	4	0	0	0	0	0	0	0	0	0	0	**263**
1:00 PM	0	1	1	22	98	48	4	0	0	0	0	0	0	0	0	0	0	**174**
2:00 PM	0	1	7	24	91	48	8	1	0	0	0	0	0	0	0	0	0	**180**
3:00 PM	0	4	11	17	71	58	5	0	0	0	0	0	0	0	0	0	0	**166**
4:00 PM	0	1	6	29	83	55	3	1	0	0	0	0	0	0	0	0	0	**178**
5:00 PM	0	3	4	23	76	56	5	0	0	0	0	0	0	0	0	0	0	**167**
6:00 PM	3	12	27	94	131	50	2	0	0	0	0	0	0	0	0	0	0	**319**
7:00 PM	122	116	48	32	36	5	0	0	0	0	0	0	0	0	0	0	0	**359**
8:00 PM	0	0	1	25	36	13	1	1	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	2	3	9	10	9	0	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	0	1	0	8	8	3	1	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	0	0	1	4	2	1	0	0	0	0	0	0	0	0	0	0	**8**
Total	**128**	**149**	**149**	**555**	**1,617**	**829**	**86**	**9**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,524**
Percent	**3.6%**	**4.2%**	**4.2%**	**15.7%**	**45.9%**	**23.5%**	**2.4%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.6	mph	Mean (Average) Speed	26.4	mph
85th Percentile	31.4	mph	10 mph Pace	23.4 - 33.4	mph
95th Percentile	34.0	mph	Percent in Pace	73.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	2	0	3	1	1	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	0	0	0	7	6	4	2	0	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	0	1	1	10	26	15	3	0	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	0	0	5	36	97	58	10	0	0	0	0	0	0	0	0	0	**206**
8:00 AM	0	0	0	8	121	172	32	3	0	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	1	3	35	129	127	34	2	0	0	0	0	0	0	0	0	0	**331**
10:00 AM	0	1	5	26	150	95	14	2	0	0	0	0	0	0	0	0	0	**293**
11:00 AM	0	0	4	43	165	117	29	0	0	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	0	8	30	145	125	23	2	0	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	1	10	42	112	86	22	1	1	0	0	0	0	0	0	0	0	**275**
2:00 PM	0	0	3	11	74	112	35	7	1	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	0	2	21	84	80	27	3	0	0	0	0	0	0	0	0	0	**217**
4:00 PM	0	0	1	19	136	118	35	3	0	0	0	0	0	0	0	0	0	**312**
5:00 PM	0	0	2	16	121	178	46	4	0	0	0	0	0	0	0	0	0	**367**
6:00 PM	0	1	2	16	74	90	20	2	0	1	0	0	0	0	0	0	0	**206**
7:00 PM	0	5	23	61	54	17	1	0	0	0	0	0	0	0	0	0	0	**161**
8:00 PM	1	0	0	19	53	26	7	0	0	0	0	0	0	0	0	0	0	**106**
9:00 PM	151	38	20	28	28	19	4	1	0	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	0	0	0	1	12	5	1	1	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	0	0	0	2	9	3	0	0	1	0	0	0	0	0	0	0	**15**
Total	**152**	**48**	**84**	**383**	**1,505**	**1,516**	**418**	**48**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,159**
Percent	**3.7%**	**1.2%**	**2.0%**	**9.2%**	**36.2%**	**36.5%**	**10.1%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.8	mph	Mean (Average) Speed	28.9	mph
85th Percentile	34.2	mph	10 mph Pace	25.1 - 35.1	mph
95th Percentile	36.9	mph	Percent in Pace	72.54	%

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Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	1	4	0	0	1	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	0	0	7	11	2	1	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	1	2	5	24	32	4	1	1	0	0	0	0	0	0	0	0	**70**
7:00 AM	0	0	2	5	70	99	19	1	0	0	0	0	0	0	0	0	0	**196**
8:00 AM	0	1	2	24	184	95	6	0	0	0	0	0	0	0	0	0	0	**312**
9:00 AM	0	1	6	50	214	80	7	0	0	0	0	0	0	0	0	0	0	**358**
10:00 AM	0	0	6	52	181	46	7	0	0	0	0	0	0	0	0	0	0	**292**
11:00 AM	2	0	13	78	157	53	3	0	0	0	0	0	0	0	0	0	0	**306**
12:00 PM	1	5	9	60	131	53	4	0	0	0	0	0	0	0	0	0	0	**263**
1:00 PM	0	1	1	22	98	48	4	0	0	0	0	0	0	0	0	0	0	**174**
2:00 PM	0	1	7	24	91	48	8	1	0	0	0	0	0	0	0	0	0	**180**
3:00 PM	0	4	11	17	71	58	5	0	0	0	0	0	0	0	0	0	0	**166**
4:00 PM	0	1	6	29	83	55	3	1	0	0	0	0	0	0	0	0	0	**178**
5:00 PM	0	3	4	23	76	56	5	0	0	0	0	0	0	0	0	0	0	**167**
6:00 PM	3	12	27	94	131	50	2	0	0	0	0	0	0	0	0	0	0	**319**
7:00 PM	122	116	48	32	36	5	0	0	0	0	0	0	0	0	0	0	0	**359**
8:00 PM	0	0	1	25	36	13	1	1	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	2	3	9	10	9	0	0	0	0	0	0	0	0	0	0	0	**33**
10:00 PM	0	0	1	0	8	8	3	1	0	0	0	0	0	0	0	0	0	**21**
11:00 PM	0	0	0	1	4	2	1	0	0	0	0	0	0	0	0	0	0	**8**
Total	**128**	**149**	**149**	**555**	**1,617**	**829**	**86**	**9**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,524**
Percent	**3.6%**	**4.2%**	**4.2%**	**15.7%**	**45.9%**	**23.5%**	**2.4%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.6	mph	Mean (Average) Speed	26.4	mph
85th Percentile	31.4	mph	10 mph Pace	23.4 - 33.4	mph
95th Percentile	34.0	mph	Percent in Pace	73.9	%

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Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 13

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	2	0	3	1	1	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	0	0	0	7	6	4	2	0	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	0	1	1	10	26	15	3	0	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	0	0	5	36	97	58	10	0	0	0	0	0	0	0	0	0	**206**
8:00 AM	0	0	0	8	121	172	32	3	0	0	0	0	0	0	0	0	0	**336**
9:00 AM	0	1	3	35	129	127	34	2	0	0	0	0	0	0	0	0	0	**331**
10:00 AM	0	1	5	26	150	95	14	2	0	0	0	0	0	0	0	0	0	**293**
11:00 AM	0	0	4	43	165	117	29	0	0	0	0	0	0	0	0	0	0	**358**
12:00 PM	0	0	8	30	145	125	23	2	0	0	0	0	0	0	0	0	0	**333**
1:00 PM	0	1	10	42	112	86	22	1	1	0	0	0	0	0	0	0	0	**275**
2:00 PM	0	0	3	11	74	112	35	7	1	0	0	0	0	0	0	0	0	**243**
3:00 PM	0	0	2	21	84	80	27	3	0	0	0	0	0	0	0	0	0	**217**
4:00 PM	0	0	1	19	136	118	35	3	0	0	0	0	0	0	0	0	0	**312**
5:00 PM	0	0	2	16	121	178	46	4	0	0	0	0	0	0	0	0	0	**367**
6:00 PM	0	1	2	16	74	90	20	2	0	1	0	0	0	0	0	0	0	**206**
7:00 PM	0	5	23	61	54	17	1	0	0	0	0	0	0	0	0	0	0	**161**
8:00 PM	1	0	0	19	53	26	7	0	0	0	0	0	0	0	0	0	0	**106**
9:00 PM	151	38	20	28	28	19	4	1	0	0	0	0	0	0	0	0	0	**289**
10:00 PM	0	0	0	0	1	12	5	1	1	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	0	0	0	2	9	3	0	0	1	0	0	0	0	0	0	0	**15**
Total	**152**	**48**	**84**	**383**	**1,505**	**1,516**	**418**	**48**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,159**
Percent	**3.7%**	**1.2%**	**2.0%**	**9.2%**	**36.2%**	**36.5%**	**10.1%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	29.8	mph	Mean (Average) Speed	28.9	mph
85th Percentile	34.2	mph	10 mph Pace	25.1 - 35.1	mph
95th Percentile	36.9	mph	Percent in Pace	72.5	%

Location: Civic Center, B/W Merrydale O/C & N San Pedro
Date Range: 4/25/2019 - 5/1/2019
Site Code: 13

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3	9
1:00 AM	5	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2	7
2:00 AM	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	6
3:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
4:00 AM	6	7	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	13
5:00 AM	21	19	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	19	40
6:00 AM	70	56	126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	56	126
7:00 AM	196	206	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	206	402
8:00 AM	312	336	648	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	336	648
9:00 AM	**358**	331	**689**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**358**	331	**689**
10:00 AM	292	293	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	292	293	585
11:00 AM	306	**358**	664	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	306	**358**	664
12:00 PM	263	333	**596**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	263	333	**596**
1:00 PM	174	275	449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	174	275	449
2:00 PM	180	243	423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	243	423
3:00 PM	166	217	383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	217	383
4:00 PM	178	312	490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178	312	490
5:00 PM	167	**367**	534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	167	**367**	534
6:00 PM	319	206	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	319	206	525
7:00 PM	**359**	161	520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**359**	161	520
8:00 PM	77	106	183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	106	183
9:00 PM	33	289	322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	289	322
10:00 PM	21	20	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	20	41
11:00 PM	8	15	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	15	23
Total	3,524	4,159	7,683	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,524	4,159	7,683
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	09:00	11:00	09:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	09:00	11:00	09:00
Vol.	358	358	689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	358	358	689
PM Peak	19:00	17:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19:00	17:00	12:00
Vol.	359	367	596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	359	367	596

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: D St, B/W 4th St & Bayview St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 14

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	22	3,058	395	0	77	4	0	0	1	0	0	0	0	3,557
Percent	0.6%	86.0%	11.1%	0.0%	2.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	31	4,694	731	0	149	70	0	1	3	1	0	0	0	5,680
Percent	0.5%	82.6%	12.9%	0.0%	2.6%	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	53	7,752	1,126	0	226	74	0	1	4	1	0	0	0	9,237
Percent	0.6%	83.9%	12.2%	0.0%	2.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

DATA SOLUTIONS

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	36	5	0	0	1	0	0	0	0	0	0	0	**42**
6:00 AM	0	83	14	0	1	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	162	31	0	4	0	0	0	0	0	0	0	0	**198**
8:00 AM	1	158	20	0	2	0	0	0	0	0	0	0	0	**181**
9:00 AM	2	153	17	0	10	0	0	0	0	0	0	0	0	**182**
10:00 AM	3	139	22	0	5	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	166	32	0	3	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	207	27	0	5	0	0	0	0	0	0	0	0	**239**
1:00 PM	4	179	33	0	6	1	0	0	0	0	0	0	0	**223**
2:00 PM	0	233	28	0	14	0	0	0	0	0	0	0	0	**275**
3:00 PM	0	327	28	0	5	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	259	41	0	7	1	0	0	0	0	0	0	0	**310**
5:00 PM	0	273	30	0	9	0	0	0	0	0	0	0	0	**312**
6:00 PM	2	214	24	0	2	0	0	0	1	0	0	0	0	**243**
7:00 PM	1	160	12	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	132	8	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	3	82	8	0	2	0	0	0	0	0	0	0	0	**95**
10:00 PM	1	46	8	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	24	2	0	2	0	0	0	0	0	0	0	0	**28**
Total	**22**	**3,058**	**395**	**0**	**77**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3,557**
Percent	**0.6%**	**86.0%**	**11.1%**	**0.0%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

DATA SOLUTIONS

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	6	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	1	13	2	0	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	33	6	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	80	23	0	3	1	0	0	0	0	0	0	0	**107**
7:00 AM	0	313	79	0	8	0	0	0	0	0	0	0	0	**400**
8:00 AM	1	349	69	0	15	1	0	0	0	0	0	0	0	**435**
9:00 AM	1	258	54	0	11	4	0	0	0	0	0	0	0	**328**
10:00 AM	3	284	30	0	15	8	0	0	0	0	0	0	0	**340**
11:00 AM	0	250	39	0	11	4	0	0	0	0	0	0	0	**304**
12:00 PM	0	322	43	0	14	5	0	0	0	0	0	0	0	**384**
1:00 PM	3	318	55	0	7	7	0	0	0	0	0	0	0	**390**
2:00 PM	1	306	39	0	18	6	0	0	0	1	0	0	0	**371**
3:00 PM	2	360	50	0	11	4	0	0	1	0	0	0	0	**428**
4:00 PM	5	384	48	0	7	8	0	0	0	0	0	0	0	**452**
5:00 PM	4	386	54	0	9	11	0	1	1	0	0	0	0	**466**
6:00 PM	1	358	49	0	2	6	0	0	1	0	0	0	0	**417**
7:00 PM	3	219	29	0	9	2	0	0	0	0	0	0	0	**262**
8:00 PM	1	145	19	0	8	0	0	0	0	0	0	0	0	**173**
9:00 PM	3	154	18	0	1	3	0	0	0	0	0	0	0	**179**
10:00 PM	2	92	16	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	38	2	0	0	0	0	0	0	0	0	0	0	**40**
Total	**31**	**4,694**	**731**	**0**	**149**	**70**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5,680**
Percent	**0.5%**	**82.6%**	**12.9%**	**0.0%**	**2.6%**	**1.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	36	5	0	0	1	0	0	0	0	0	0	0	**42**
6:00 AM	0	83	14	0	1	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	162	31	0	4	0	0	0	0	0	0	0	0	**198**
8:00 AM	1	158	20	0	2	0	0	0	0	0	0	0	0	**181**
9:00 AM	2	153	17	0	10	0	0	0	0	0	0	0	0	**182**
10:00 AM	3	139	22	0	5	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	166	32	0	3	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	207	27	0	5	0	0	0	0	0	0	0	0	**239**
1:00 PM	4	179	33	0	6	1	0	0	0	0	0	0	0	**223**
2:00 PM	0	233	28	0	14	0	0	0	0	0	0	0	0	**275**
3:00 PM	0	327	28	0	5	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	259	41	0	7	1	0	0	0	0	0	0	0	**310**
5:00 PM	0	273	30	0	9	0	0	0	0	0	0	0	0	**312**
6:00 PM	2	214	24	0	2	0	0	0	1	0	0	0	0	**243**
7:00 PM	1	160	12	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	132	8	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	3	82	8	0	2	0	0	0	0	0	0	0	0	**95**
10:00 PM	1	46	8	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	24	2	0	2	0	0	0	0	0	0	0	0	**28**
Total	**22**	**3,058**	**395**	**0**	**77**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3,557**
Percent	**0.6%**	**86.0%**	**11.1%**	**0.0%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	6	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	1	13	2	0	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	33	6	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	80	23	0	3	1	0	0	0	0	0	0	0	**107**
7:00 AM	0	313	79	0	8	0	0	0	0	0	0	0	0	**400**
8:00 AM	1	349	69	0	15	1	0	0	0	0	0	0	0	**435**
9:00 AM	1	258	54	0	11	4	0	0	0	0	0	0	0	**328**
10:00 AM	3	284	30	0	15	8	0	0	0	0	0	0	0	**340**
11:00 AM	0	250	39	0	11	4	0	0	0	0	0	0	0	**304**
12:00 PM	0	322	43	0	14	5	0	0	0	0	0	0	0	**384**
1:00 PM	3	318	55	0	7	7	0	0	0	0	0	0	0	**390**
2:00 PM	1	306	39	0	18	6	0	0	0	1	0	0	0	**371**
3:00 PM	2	360	50	0	11	4	0	0	1	0	0	0	0	**428**
4:00 PM	5	384	48	0	7	8	0	0	0	0	0	0	0	**452**
5:00 PM	4	386	54	0	9	11	0	1	1	0	0	0	0	**466**
6:00 PM	1	358	49	0	2	6	0	0	1	0	0	0	0	**417**
7:00 PM	3	219	29	0	9	2	0	0	0	0	0	0	0	**262**
8:00 PM	1	145	19	0	8	0	0	0	0	0	0	0	0	**173**
9:00 PM	3	154	18	0	1	3	0	0	0	0	0	0	0	**179**
10:00 PM	2	92	16	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	38	2	0	0	0	0	0	0	0	0	0	0	**40**
Total	**31**	**4,694**	**731**	**0**	**149**	**70**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5,680**
Percent	**0.5%**	**82.6%**	**12.9%**	**0.0%**	**2.6%**	**1.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	36	5	0	0	1	0	0	0	0	0	0	0	**42**
6:00 AM	0	83	14	0	1	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	162	31	0	4	0	0	0	0	0	0	0	0	**198**
8:00 AM	1	158	20	0	2	0	0	0	0	0	0	0	0	**181**
9:00 AM	2	153	17	0	10	0	0	0	0	0	0	0	0	**182**
10:00 AM	3	139	22	0	5	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	166	32	0	3	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	207	27	0	5	0	0	0	0	0	0	0	0	**239**
1:00 PM	4	179	33	0	6	1	0	0	0	0	0	0	0	**223**
2:00 PM	0	233	28	0	14	0	0	0	0	0	0	0	0	**275**
3:00 PM	0	327	28	0	5	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	259	41	0	7	1	0	0	0	0	0	0	0	**310**
5:00 PM	0	273	30	0	9	0	0	0	0	0	0	0	0	**312**
6:00 PM	2	214	24	0	2	0	0	0	1	0	0	0	0	**243**
7:00 PM	1	160	12	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	132	8	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	3	82	8	0	2	0	0	0	0	0	0	0	0	**95**
10:00 PM	1	46	8	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	24	2	0	2	0	0	0	0	0	0	0	0	**28**
Total	**22**	**3,058**	**395**	**0**	**77**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3,557**
Percent	**0.6%**	**86.0%**	**11.1%**	**0.0%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	6	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	1	13	2	0	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	33	6	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	80	23	0	3	1	0	0	0	0	0	0	0	**107**
7:00 AM	0	313	79	0	8	0	0	0	0	0	0	0	0	**400**
8:00 AM	1	349	69	0	15	1	0	0	0	0	0	0	0	**435**
9:00 AM	1	258	54	0	11	4	0	0	0	0	0	0	0	**328**
10:00 AM	3	284	30	0	15	8	0	0	0	0	0	0	0	**340**
11:00 AM	0	250	39	0	11	4	0	0	0	0	0	0	0	**304**
12:00 PM	0	322	43	0	14	5	0	0	0	0	0	0	0	**384**
1:00 PM	3	318	55	0	7	7	0	0	0	0	0	0	0	**390**
2:00 PM	1	306	39	0	18	6	0	0	0	1	0	0	0	**371**
3:00 PM	2	360	50	0	11	4	0	0	1	0	0	0	0	**428**
4:00 PM	5	384	48	0	7	8	0	0	0	0	0	0	0	**452**
5:00 PM	4	386	54	0	9	11	0	1	1	0	0	0	0	**466**
6:00 PM	1	358	49	0	2	6	0	0	1	0	0	0	0	**417**
7:00 PM	3	219	29	0	9	2	0	0	0	0	0	0	0	**262**
8:00 PM	1	145	19	0	8	0	0	0	0	0	0	0	0	**173**
9:00 PM	3	154	18	0	1	3	0	0	0	0	0	0	0	**179**
10:00 PM	2	92	16	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	38	2	0	0	0	0	0	0	0	0	0	0	**40**
Total	**31**	**4,694**	**731**	**0**	**149**	**70**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5,680**
Percent	**0.5%**	**82.6%**	**12.9%**	**0.0%**	**2.6%**	**1.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: D St, B/W 4th St & Bayview St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 14

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	75	275	809	1,524	740	114	17	1	0	0	0	0	0	0	2	0	0	3,557
Percent	2.1%	7.7%	22.7%	42.8%	20.8%	3.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	100%
Southbound	130	199	1,073	2,592	1,459	204	19	4	0	0	0	0	0	0	0	0	0	5,680
Percent	2.3%	3.5%	18.9%	45.6%	25.7%	3.6%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	205	474	1,882	4,116	2,199	318	36	5	0	0	0	0	0	0	2	0	0	9,237
Percent	2.2%	5.1%	20.4%	44.6%	23.8%	3.4%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	22.1	mph	Mean (Average) Speed	21.7	mph
85th Percentile	26.6	mph	10 mph Pace	17.2 - 27.2	mph
95th Percentile	29.4	mph	Percent in Pace	70.7	%
Southbound			**Southbound**		
50th Percentile (Median)	22.9	mph	Mean (Average) Speed	22.6	mph
85th Percentile	26.8	mph	10 mph Pace	18.2 - 28.2	mph
95th Percentile	29.6	mph	Percent in Pace	76.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	4	0	0	1	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	0	0	4	4	2	0	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	2	0	13	20	5	2	0	0	0	0	0	0	0	0	0	0	**42**
6:00 AM	0	0	14	35	38	10	1	0	0	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	2	21	90	71	11	2	0	0	0	0	0	0	0	0	0	0	**198**
8:00 AM	3	4	23	83	55	13	0	0	0	0	0	0	0	0	0	0	0	**181**
9:00 AM	4	7	29	83	50	9	0	0	0	0	0	0	0	0	0	0	0	**182**
10:00 AM	1	6	39	88	30	5	0	0	0	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	6	33	116	41	4	1	0	0	0	0	0	0	0	0	0	0	**203**
12:00 PM	6	21	57	110	36	6	3	0	0	0	0	0	0	0	0	0	0	**239**
1:00 PM	1	18	68	87	47	2	0	0	0	0	0	0	0	0	0	0	0	**223**
2:00 PM	6	28	67	116	48	6	4	0	0	0	0	0	0	0	0	0	0	**275**
3:00 PM	20	67	119	110	41	2	0	0	0	0	0	0	0	0	2	0	0	**361**
4:00 PM	11	50	95	114	34	5	1	0	0	0	0	0	0	0	0	0	0	**310**
5:00 PM	16	37	107	119	31	2	0	0	0	0	0	0	0	0	0	0	0	**312**
6:00 PM	1	20	64	105	44	8	1	0	0	0	0	0	0	0	0	0	0	**243**
7:00 PM	2	1	26	86	52	6	0	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	1	21	84	32	2	0	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	1	2	12	39	33	8	0	0	0	0	0	0	0	0	0	0	0	**95**
10:00 PM	0	3	10	24	13	4	1	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	0	4	13	9	1	1	0	0	0	0	0	0	0	0	0	0	**28**
Total	**75**	**275**	**809**	**1,524**	**740**	**114**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**3,557**
Percent	**2.1%**	**7.7%**	**22.7%**	**42.8%**	**20.8%**	**3.2%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	22.1	mph	Mean (Average) Speed	21.7	mph
85th Percentile	26.6	mph	10 mph Pace	17.2 - 27.2	mph
95th Percentile	29.4	mph	Percent in Pace	70.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	8	7	6	1	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	0	1	2	6	6	0	0	1	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	4	4	0	1	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	1	6	11	13	7	1	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	2	10	37	48	8	2	0	0	0	0	0	0	0	0	0	0	**107**
7:00 AM	0	4	44	212	125	15	0	0	0	0	0	0	0	0	0	0	0	**400**
8:00 AM	3	12	53	229	119	17	2	0	0	0	0	0	0	0	0	0	0	**435**
9:00 AM	8	29	99	123	62	7	0	0	0	0	0	0	0	0	0	0	0	**328**
10:00 AM	10	11	47	172	90	10	0	0	0	0	0	0	0	0	0	0	0	**340**
11:00 AM	8	8	56	125	94	12	1	0	0	0	0	0	0	0	0	0	0	**304**
12:00 PM	19	19	52	179	99	15	0	1	0	0	0	0	0	0	0	0	0	**384**
1:00 PM	11	12	101	178	74	13	1	0	0	0	0	0	0	0	0	0	0	**390**
2:00 PM	10	22	111	145	71	10	2	0	0	0	0	0	0	0	0	0	0	**371**
3:00 PM	15	16	108	192	80	16	1	0	0	0	0	0	0	0	0	0	0	**428**
4:00 PM	16	13	92	224	99	7	1	0	0	0	0	0	0	0	0	0	0	**452**
5:00 PM	14	20	112	230	80	10	0	0	0	0	0	0	0	0	0	0	0	**466**
6:00 PM	8	14	72	185	118	17	3	0	0	0	0	0	0	0	0	0	0	**417**
7:00 PM	5	11	33	106	93	11	2	1	0	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	0	31	78	58	5	0	0	0	0	0	0	0	0	0	0	0	**173**
9:00 PM	2	2	29	82	59	4	1	0	0	0	0	0	0	0	0	0	0	**179**
10:00 PM	0	2	11	50	36	10	0	1	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	0	2	14	21	3	0	0	0	0	0	0	0	0	0	0	0	**40**
Total	**130**	**199**	**1,073**	**2,592**	**1,459**	**204**	**19**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,680**
Percent	**2.3%**	**3.5%**	**18.9%**	**45.6%**	**25.7%**	**3.6%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	22.9	mph	Mean (Average) Speed	22.6	mph
85th Percentile	26.8	mph	10 mph Pace	18.2 - 28.2	mph
95th Percentile	29.6	mph	Percent in Pace	76.71	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	4	0	0	1	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	0	0	4	4	2	0	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	2	0	13	20	5	2	0	0	0	0	0	0	0	0	0	0	**42**
6:00 AM	0	0	14	35	38	10	1	0	0	0	0	0	0	0	0	0	0	**98**
7:00 AM	1	2	21	90	71	11	2	0	0	0	0	0	0	0	0	0	0	**198**
8:00 AM	3	4	23	83	55	13	0	0	0	0	0	0	0	0	0	0	0	**181**
9:00 AM	4	7	29	83	50	9	0	0	0	0	0	0	0	0	0	0	0	**182**
10:00 AM	1	6	39	88	30	5	0	0	0	0	0	0	0	0	0	0	0	**169**
11:00 AM	2	6	33	116	41	4	1	0	0	0	0	0	0	0	0	0	0	**203**
12:00 PM	6	21	57	110	36	6	3	0	0	0	0	0	0	0	0	0	0	**239**
1:00 PM	1	18	68	87	47	2	0	0	0	0	0	0	0	0	0	0	0	**223**
2:00 PM	6	28	67	116	48	6	4	0	0	0	0	0	0	0	0	0	0	**275**
3:00 PM	20	67	119	110	41	2	0	0	0	0	0	0	0	0	2	0	0	**361**
4:00 PM	11	50	95	114	34	5	1	0	0	0	0	0	0	0	0	0	0	**310**
5:00 PM	16	37	107	119	31	2	0	0	0	0	0	0	0	0	0	0	0	**312**
6:00 PM	1	20	64	105	44	8	1	0	0	0	0	0	0	0	0	0	0	**243**
7:00 PM	2	1	26	86	52	6	0	0	0	0	0	0	0	0	0	0	0	**173**
8:00 PM	0	1	21	84	32	2	0	0	0	0	0	0	0	0	0	0	0	**140**
9:00 PM	1	2	12	39	33	8	0	0	0	0	0	0	0	0	0	0	0	**95**
10:00 PM	0	3	10	24	13	4	1	0	0	0	0	0	0	0	0	0	0	**55**
11:00 PM	0	0	4	13	9	1	1	0	0	0	0	0	0	0	0	0	0	**28**
Total	**75**	**275**	**809**	**1,524**	**740**	**114**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**3,557**
Percent	**2.1%**	**7.7%**	**22.7%**	**42.8%**	**20.8%**	**3.2%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	22.1	mph	Mean (Average) Speed	21.7	mph
85th Percentile	26.6	mph	10 mph Pace	17.2 - 27.2	mph
95th Percentile	29.4	mph	Percent in Pace	70.7	%

Project Manager: (415) 310-6469
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Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 14

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	8	7	6	1	0	0	0	0	0	0	0	0	0	0	**24**
1:00 AM	0	1	2	6	6	0	0	1	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	4	4	0	1	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	1	6	11	13	7	1	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	2	10	37	48	8	2	0	0	0	0	0	0	0	0	0	0	**107**
7:00 AM	0	4	44	212	125	15	0	0	0	0	0	0	0	0	0	0	0	**400**
8:00 AM	3	12	53	229	119	17	2	0	0	0	0	0	0	0	0	0	0	**435**
9:00 AM	8	29	99	123	62	7	0	0	0	0	0	0	0	0	0	0	0	**328**
10:00 AM	10	11	47	172	90	10	0	0	0	0	0	0	0	0	0	0	0	**340**
11:00 AM	8	8	56	125	94	12	1	0	0	0	0	0	0	0	0	0	0	**304**
12:00 PM	19	19	52	179	99	15	0	1	0	0	0	0	0	0	0	0	0	**384**
1:00 PM	11	12	101	178	74	13	1	0	0	0	0	0	0	0	0	0	0	**390**
2:00 PM	10	22	111	145	71	10	2	0	0	0	0	0	0	0	0	0	0	**371**
3:00 PM	15	16	108	192	80	16	1	0	0	0	0	0	0	0	0	0	0	**428**
4:00 PM	16	13	92	224	99	7	1	0	0	0	0	0	0	0	0	0	0	**452**
5:00 PM	14	20	112	230	80	10	0	0	0	0	0	0	0	0	0	0	0	**466**
6:00 PM	8	14	72	185	118	17	3	0	0	0	0	0	0	0	0	0	0	**417**
7:00 PM	5	11	33	106	93	11	2	1	0	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	0	31	78	58	5	0	0	0	0	0	0	0	0	0	0	0	**173**
9:00 PM	2	2	29	82	59	4	1	0	0	0	0	0	0	0	0	0	0	**179**
10:00 PM	0	2	11	50	36	10	0	1	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	0	2	14	21	3	0	0	0	0	0	0	0	0	0	0	0	**40**
Total	**130**	**199**	**1,073**	**2,592**	**1,459**	**204**	**19**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,680**
Percent	**2.3%**	**3.5%**	**18.9%**	**45.6%**	**25.7%**	**3.6%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	22.9	mph	Mean (Average) Speed	22.6	mph
85th Percentile	26.8	mph	10 mph Pace	18.2 - 28.2	mph
95th Percentile	29.6	mph	Percent in Pace	76.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: D St, B/W 4th St & Bayview St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 14

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	9	24	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	24	33
1:00 AM	3	16	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	16	19
2:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
3:00 AM	6	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3	9
4:00 AM	10	9	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	9	19
5:00 AM	42	39	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	39	81
6:00 AM	98	107	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	107	205
7:00 AM	198	400	598	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	198	400	598
8:00 AM	181	**435**	**616**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	**435**	**616**
9:00 AM	182	328	510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	328	510
10:00 AM	169	340	509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	169	340	509
11:00 AM	**203**	304	507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**203**	304	507
12:00 PM	239	384	623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239	384	623
1:00 PM	223	390	613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	390	613
2:00 PM	275	371	646	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	371	646
3:00 PM	**361**	428	**789**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**361**	428	**789**
4:00 PM	310	452	762	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	310	452	762
5:00 PM	312	**466**	778	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	**466**	778
6:00 PM	243	417	660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	243	417	660
7:00 PM	173	262	435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	173	262	435
8:00 PM	140	173	313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	173	313
9:00 PM	95	179	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95	179	274
10:00 PM	55	110	165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	110	165
11:00 PM	28	40	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	40	68
Total	3,557	5,680	9,237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,557	5,680	9,237
Percent	39%	61%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39%	61%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	203	435	616	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203	435	616
PM Peak	15:00	17:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	15:00
Vol.	361	466	789	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	361	466	789

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Francisco Blvd E, B/W Grand & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 15

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	41	5,897	990	0	288	21	0	3	3	2	0	0	1	7,246
Percent	0.6%	81.4%	13.7%	0.0%	4.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	39	6,401	1,531	4	597	22	0	0	8	0	0	0	1	8,603
Percent	0.5%	74.4%	17.8%	0.0%	6.9%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	80	12,298	2,521	4	885	43	0	3	11	2	0	0	2	15,849
Percent	0.5%	77.6%	15.9%	0.0%	5.6%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

DATA SOLUTIONS

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	12	2	0	3	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	12	0	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	9	0	0	0	0	0	0	0	1	0	0	0	**10**
4:00 AM	0	16	2	0	3	2	0	0	0	0	0	0	0	**23**
5:00 AM	0	75	7	0	7	0	0	0	0	0	0	0	0	**89**
6:00 AM	3	171	65	0	12	3	0	0	0	0	0	0	0	**254**
7:00 AM	3	415	100	0	29	4	0	0	0	0	0	0	0	**551**
8:00 AM	2	338	80	0	27	2	0	2	0	0	0	0	0	**451**
9:00 AM	2	274	54	0	11	0	0	0	0	0	0	0	0	**341**
10:00 AM	1	295	47	0	22	1	0	0	0	0	0	0	1	**367**
11:00 AM	3	403	64	0	26	3	0	1	0	0	0	0	0	**500**
12:00 PM	0	436	68	0	24	0	0	0	0	0	0	0	0	**528**
1:00 PM	6	404	62	0	16	1	0	0	0	0	0	0	0	**489**
2:00 PM	2	441	61	0	19	0	0	0	2	0	0	0	0	**525**
3:00 PM	3	421	52	0	20	3	0	0	0	0	0	0	0	**499**
4:00 PM	3	470	53	0	16	1	0	0	0	0	0	0	0	**543**
5:00 PM	2	514	76	0	19	1	0	0	1	0	0	0	0	**613**
6:00 PM	3	347	64	0	10	0	0	0	0	0	0	0	0	**424**
7:00 PM	3	302	40	0	5	0	0	0	0	1	0	0	0	**351**
8:00 PM	1	203	35	0	5	0	0	0	0	0	0	0	0	**244**
9:00 PM	1	179	32	0	4	0	0	0	0	0	0	0	0	**216**
10:00 PM	1	115	23	0	5	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	42	2	0	4	0	0	0	0	0	0	0	0	**48**
Total	**41**	**5,897**	**990**	**0**	**288**	**21**	**0**	**3**	**3**	**2**	**0**	**0**	**1**	**7,246**
Percent	**0.6%**	**81.4%**	**13.7%**	**0.0%**	**4.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

DATA SOLUTIONS

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	3	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	15	2	0	2	0	0	0	0	0	0	0	0	**19**
2:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	0	**7**
4:00 AM	1	11	3	0	2	1	0	0	0	0	0	0	0	**18**
5:00 AM	1	43	5	0	8	0	0	0	0	0	0	0	0	**57**
6:00 AM	0	126	46	0	28	3	0	0	0	0	0	0	0	**203**
7:00 AM	7	255	66	0	32	2	0	0	0	0	0	0	0	**362**
8:00 AM	3	350	100	0	33	1	0	0	0	0	0	0	0	**487**
9:00 AM	3	326	76	0	40	2	0	0	2	0	0	0	0	**449**
10:00 AM	2	318	82	1	43	4	0	0	1	0	0	0	0	**451**
11:00 AM	3	406	91	1	35	1	0	0	1	0	0	0	0	**538**
12:00 PM	4	426	83	0	47	0	0	0	1	0	0	0	0	**561**
1:00 PM	2	457	88	1	56	4	0	0	0	0	0	0	0	**608**
2:00 PM	0	505	103	0	49	2	0	0	0	0	0	0	0	**659**
3:00 PM	4	528	126	0	43	0	0	0	0	0	0	0	0	**701**
4:00 PM	1	583	179	1	49	0	0	0	0	0	0	0	1	**814**
5:00 PM	2	624	154	0	48	1	0	0	0	0	0	0	0	**829**
6:00 PM	3	474	103	0	27	1	0	0	1	0	0	0	0	**609**
7:00 PM	1	330	91	0	17	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	251	64	0	22	0	0	0	0	0	0	0	0	**337**
9:00 PM	2	182	38	0	6	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	116	22	0	3	0	0	0	1	0	0	0	0	**142**
11:00 PM	0	50	6	0	2	0	0	0	0	0	0	0	0	**58**
Total	**39**	**6,401**	**1,531**	**4**	**597**	**22**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**8,603**
Percent	**0.5%**	**74.4%**	**17.8%**	**0.0%**	**6.9%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	12	2	0	3	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	12	0	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	9	0	0	0	0	0	0	0	1	0	0	0	**10**
4:00 AM	0	16	2	0	3	2	0	0	0	0	0	0	0	**23**
5:00 AM	0	75	7	0	7	0	0	0	0	0	0	0	0	**89**
6:00 AM	3	171	65	0	12	3	0	0	0	0	0	0	0	**254**
7:00 AM	3	415	100	0	29	4	0	0	0	0	0	0	0	**551**
8:00 AM	2	338	80	0	27	2	0	2	0	0	0	0	0	**451**
9:00 AM	2	274	54	0	11	0	0	0	0	0	0	0	0	**341**
10:00 AM	1	295	47	0	22	1	0	0	0	0	0	0	1	**367**
11:00 AM	3	403	64	0	26	3	0	1	0	0	0	0	0	**500**
12:00 PM	0	436	68	0	24	0	0	0	0	0	0	0	0	**528**
1:00 PM	6	404	62	0	16	1	0	0	0	0	0	0	0	**489**
2:00 PM	2	441	61	0	19	0	0	0	2	0	0	0	0	**525**
3:00 PM	3	421	52	0	20	3	0	0	0	0	0	0	0	**499**
4:00 PM	3	470	53	0	16	1	0	0	0	0	0	0	0	**543**
5:00 PM	2	514	76	0	19	1	0	0	1	0	0	0	0	**613**
6:00 PM	3	347	64	0	10	0	0	0	0	0	0	0	0	**424**
7:00 PM	3	302	40	0	5	0	0	0	0	1	0	0	0	**351**
8:00 PM	1	203	35	0	5	0	0	0	0	0	0	0	0	**244**
9:00 PM	1	179	32	0	4	0	0	0	0	0	0	0	0	**216**
10:00 PM	1	115	23	0	5	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	42	2	0	4	0	0	0	0	0	0	0	0	**48**
Total	**41**	**5,897**	**990**	**0**	**288**	**21**	**0**	**3**	**3**	**2**	**0**	**0**	**1**	**7,246**
Percent	**0.6%**	**81.4%**	**13.7%**	**0.0%**	**4.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	3	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	15	2	0	2	0	0	0	0	0	0	0	0	**19**
2:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	0	**7**
4:00 AM	1	11	3	0	2	1	0	0	0	0	0	0	0	**18**
5:00 AM	1	43	5	0	8	0	0	0	0	0	0	0	0	**57**
6:00 AM	0	126	46	0	28	3	0	0	0	0	0	0	0	**203**
7:00 AM	7	255	66	0	32	2	0	0	0	0	0	0	0	**362**
8:00 AM	3	350	100	0	33	1	0	0	0	0	0	0	0	**487**
9:00 AM	3	326	76	0	40	2	0	0	2	0	0	0	0	**449**
10:00 AM	2	318	82	1	43	4	0	0	1	0	0	0	0	**451**
11:00 AM	3	406	91	1	35	1	0	0	1	0	0	0	0	**538**
12:00 PM	4	426	83	0	47	0	0	0	1	0	0	0	0	**561**
1:00 PM	2	457	88	1	56	4	0	0	0	0	0	0	0	**608**
2:00 PM	0	505	103	0	49	2	0	0	0	0	0	0	0	**659**
3:00 PM	4	528	126	0	43	0	0	0	0	0	0	0	0	**701**
4:00 PM	1	583	179	1	49	0	0	0	0	0	0	0	1	**814**
5:00 PM	2	624	154	0	48	1	0	0	0	0	0	0	0	**829**
6:00 PM	3	474	103	0	27	1	0	0	1	0	0	0	0	**609**
7:00 PM	1	330	91	0	17	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	251	64	0	22	0	0	0	0	0	0	0	0	**337**
9:00 PM	2	182	38	0	6	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	116	22	0	3	0	0	0	1	0	0	0	0	**142**
11:00 PM	0	50	6	0	2	0	0	0	0	0	0	0	0	**58**
Total	**39**	**6,401**	**1,531**	**4**	**597**	**22**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**8,603**
Percent	**0.5%**	**74.4%**	**17.8%**	**0.0%**	**6.9%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	12	2	0	3	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	12	0	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	9	0	0	0	0	0	0	0	1	0	0	0	**10**
4:00 AM	0	16	2	0	3	2	0	0	0	0	0	0	0	**23**
5:00 AM	0	75	7	0	7	0	0	0	0	0	0	0	0	**89**
6:00 AM	3	171	65	0	12	3	0	0	0	0	0	0	0	**254**
7:00 AM	3	415	100	0	29	4	0	0	0	0	0	0	0	**551**
8:00 AM	2	338	80	0	27	2	0	2	0	0	0	0	0	**451**
9:00 AM	2	274	54	0	11	0	0	0	0	0	0	0	0	**341**
10:00 AM	1	295	47	0	22	1	0	0	0	0	0	0	1	**367**
11:00 AM	3	403	64	0	26	3	0	1	0	0	0	0	0	**500**
12:00 PM	0	436	68	0	24	0	0	0	0	0	0	0	0	**528**
1:00 PM	6	404	62	0	16	1	0	0	0	0	0	0	0	**489**
2:00 PM	2	441	61	0	19	0	0	0	2	0	0	0	0	**525**
3:00 PM	3	421	52	0	20	3	0	0	0	0	0	0	0	**499**
4:00 PM	3	470	53	0	16	1	0	0	0	0	0	0	0	**543**
5:00 PM	2	514	76	0	19	1	0	0	1	0	0	0	0	**613**
6:00 PM	3	347	64	0	10	0	0	0	0	0	0	0	0	**424**
7:00 PM	3	302	40	0	5	0	0	0	0	1	0	0	0	**351**
8:00 PM	1	203	35	0	5	0	0	0	0	0	0	0	0	**244**
9:00 PM	1	179	32	0	4	0	0	0	0	0	0	0	0	**216**
10:00 PM	1	115	23	0	5	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	42	2	0	4	0	0	0	0	0	0	0	0	**48**
Total	**41**	**5,897**	**990**	**0**	**288**	**21**	**0**	**3**	**3**	**2**	**0**	**0**	**1**	**7,246**
Percent	**0.6%**	**81.4%**	**13.7%**	**0.0%**	**4.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	3	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	15	2	0	2	0	0	0	0	0	0	0	0	**19**
2:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	0	**7**
4:00 AM	1	11	3	0	2	1	0	0	0	0	0	0	0	**18**
5:00 AM	1	43	5	0	8	0	0	0	0	0	0	0	0	**57**
6:00 AM	0	126	46	0	28	3	0	0	0	0	0	0	0	**203**
7:00 AM	7	255	66	0	32	2	0	0	0	0	0	0	0	**362**
8:00 AM	3	350	100	0	33	1	0	0	0	0	0	0	0	**487**
9:00 AM	3	326	76	0	40	2	0	0	2	0	0	0	0	**449**
10:00 AM	2	318	82	1	43	4	0	0	1	0	0	0	0	**451**
11:00 AM	3	406	91	1	35	1	0	0	1	0	0	0	0	**538**
12:00 PM	4	426	83	0	47	0	0	0	1	0	0	0	0	**561**
1:00 PM	2	457	88	1	56	4	0	0	0	0	0	0	0	**608**
2:00 PM	0	505	103	0	49	2	0	0	0	0	0	0	0	**659**
3:00 PM	4	528	126	0	43	0	0	0	0	0	0	0	0	**701**
4:00 PM	1	583	179	1	49	0	0	0	0	0	0	0	1	**814**
5:00 PM	2	624	154	0	48	1	0	0	0	0	0	0	0	**829**
6:00 PM	3	474	103	0	27	1	0	0	1	0	0	0	0	**609**
7:00 PM	1	330	91	0	17	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	251	64	0	22	0	0	0	0	0	0	0	0	**337**
9:00 PM	2	182	38	0	6	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	116	22	0	3	0	0	0	1	0	0	0	0	**142**
11:00 PM	0	50	6	0	2	0	0	0	0	0	0	0	0	**58**
Total	**39**	**6,401**	**1,531**	**4**	**597**	**22**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**8,603**
Percent	**0.5%**	**74.4%**	**17.8%**	**0.0%**	**6.9%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Francisco Blvd E, B/W Grand & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 15

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	210	49	161	1,742	3,668	1,207	175	28	2	2	2	0	0	0	0	0	0	7,246
Percent	2.9%	0.7%	2.2%	24.0%	50.6%	16.7%	2.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	9	33	50	462	2,489	3,889	1,393	233	35	5	3	1	0	1	0	0	0	8,603
Percent	0.1%	0.4%	0.6%	5.4%	28.9%	45.2%	16.2%	2.7%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	219	82	211	2,204	6,157	5,096	1,568	261	37	7	5	1	0	1	0	0	0	15,849
Percent	1.4%	0.5%	1.3%	13.9%	38.8%	32.2%	9.9%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	26.8	mph	Mean (Average) Speed	26.5	mph
85th Percentile	30.9	mph	10 mph Pace	22.4 - 32.4	mph
95th Percentile	33.7	mph	Percent in Pace	80.4	%
Southbound			**Southbound**		
50th Percentile (Median)	31.5	mph	Mean (Average) Speed	31.5	mph
85th Percentile	35.8	mph	10 mph Pace	26.5 - 36.5	mph
95th Percentile	38.9	mph	Percent in Pace	77.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Wednesday, April 24, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	2	7	5	2	1	0	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	0	0	3	4	3	2	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	1	0	0	3	5	1	0	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	1	2	11	6	1	2	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	0	0	1	7	46	27	7	0	0	1	0	0	0	0	0	0	0	**89**
6:00 AM	1	7	4	70	116	47	7	2	0	0	0	0	0	0	0	0	0	**254**
7:00 AM	182	8	23	193	126	17	2	0	0	0	0	0	0	0	0	0	0	**551**
8:00 AM	24	6	4	104	238	66	8	1	0	0	0	0	0	0	0	0	0	**451**
9:00 AM	0	1	1	48	185	90	16	0	0	0	0	0	0	0	0	0	0	**341**
10:00 AM	0	2	11	82	192	61	18	1	0	0	0	0	0	0	0	0	0	**367**
11:00 AM	0	3	18	115	281	75	7	1	0	0	0	0	0	0	0	0	0	**500**
12:00 PM	0	1	19	137	286	73	12	0	0	0	0	0	0	0	0	0	0	**528**
1:00 PM	0	4	11	143	233	90	7	1	0	0	0	0	0	0	0	0	0	**489**
2:00 PM	1	5	16	116	290	89	5	1	0	0	2	0	0	0	0	0	0	**525**
3:00 PM	0	4	9	98	281	90	15	2	0	0	0	0	0	0	0	0	0	**499**
4:00 PM	1	2	5	122	302	95	13	2	1	0	0	0	0	0	0	0	0	**543**
5:00 PM	0	1	13	156	335	97	8	2	0	1	0	0	0	0	0	0	0	**613**
6:00 PM	0	1	2	93	224	88	13	3	0	0	0	0	0	0	0	0	0	**424**
7:00 PM	0	1	6	73	188	65	14	4	0	0	0	0	0	0	0	0	0	**351**
8:00 PM	0	0	8	58	141	34	3	0	0	0	0	0	0	0	0	0	0	**244**
9:00 PM	0	1	5	65	92	43	8	2	0	0	0	0	0	0	0	0	0	**216**
10:00 PM	0	1	2	43	65	28	3	2	0	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	1	0	8	19	16	3	0	1	0	0	0	0	0	0	0	0	**48**
Total	**210**	**49**	**161**	**1,742**	**3,668**	**1,207**	**175**	**28**	**2**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**7,246**
Percent	**2.9%**	**0.7%**	**2.2%**	**24.0%**	**50.6%**	**16.7%**	**2.4%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	26.8	mph	Mean (Average) Speed	26.5	mph
85th Percentile	30.9	mph	10 mph Pace	22.4 - 32.4	mph
95th Percentile	33.7	mph	Percent in Pace	80.4	%

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Wednesday, April 24, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	3	7	6	0	2	0	1	0	0	0	0	0	0	**20**
1:00 AM	0	0	0	1	2	9	5	0	1	0	0	0	0	1	0	0	0	**19**
2:00 AM	0	0	0	0	1	3	2	1	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	1	0	0	2	3	5	4	2	0	1	0	0	0	0	0	0	0	**18**
5:00 AM	0	0	0	3	11	15	15	11	1	1	0	0	0	0	0	0	0	**57**
6:00 AM	0	0	0	7	54	73	48	17	3	1	0	0	0	0	0	0	0	**203**
7:00 AM	4	0	1	26	104	158	59	9	1	0	0	0	0	0	0	0	0	**362**
8:00 AM	1	0	0	12	87	248	118	18	1	2	0	0	0	0	0	0	0	**487**
9:00 AM	0	0	0	15	87	219	99	23	5	0	1	0	0	0	0	0	0	**449**
10:00 AM	0	0	0	18	93	229	91	18	2	0	0	0	0	0	0	0	0	**451**
11:00 AM	0	3	12	37	138	242	91	10	4	0	1	0	0	0	0	0	0	**538**
12:00 PM	0	1	1	22	157	270	99	11	0	0	0	0	0	0	0	0	0	**561**
1:00 PM	0	6	3	44	192	258	91	12	2	0	0	0	0	0	0	0	0	**608**
2:00 PM	0	3	0	21	210	310	98	15	2	0	0	0	0	0	0	0	0	**659**
3:00 PM	0	6	12	55	230	307	76	13	2	0	0	0	0	0	0	0	0	**701**
4:00 PM	0	0	4	55	246	395	105	7	1	0	0	1	0	0	0	0	0	**814**
5:00 PM	1	13	5	41	291	359	107	11	1	0	0	0	0	0	0	0	0	**829**
6:00 PM	2	1	8	40	194	267	81	15	1	0	0	0	0	0	0	0	0	**609**
7:00 PM	0	0	0	15	124	199	81	18	2	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	0	2	26	138	135	34	2	0	0	0	0	0	0	0	0	0	**337**
9:00 PM	0	0	0	10	76	85	44	10	3	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	0	1	6	36	67	25	7	0	0	0	0	0	0	0	0	0	**142**
11:00 PM	0	0	0	6	11	27	11	2	1	0	0	0	0	0	0	0	0	**58**
Total	**9**	**33**	**50**	**462**	**2,489**	**3,889**	**1,393**	**233**	**35**	**5**	**3**	**1**	**0**	**1**	**0**	**0**	**0**	**8,603**
Percent	**0.1%**	**0.4%**	**0.6%**	**5.4%**	**28.9%**	**45.2%**	**16.2%**	**2.7%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	31.5	mph	Mean (Average) Speed	31.5	mph
85th Percentile	35.8	mph	10 mph Pace	26.5 - 36.5	mph
95th Percentile	38.9	mph	Percent in Pace	77.01	%

Project Manager: (415) 310-6469
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Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	2	7	5	2	1	0	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	0	0	3	4	3	2	1	0	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	1	0	0	3	5	1	0	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	1	2	11	6	1	2	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	0	0	1	7	46	27	7	0	0	1	0	0	0	0	0	0	0	**89**
6:00 AM	1	7	4	70	116	47	7	2	0	0	0	0	0	0	0	0	0	**254**
7:00 AM	182	8	23	193	126	17	2	0	0	0	0	0	0	0	0	0	0	**551**
8:00 AM	24	6	4	104	238	66	8	1	0	0	0	0	0	0	0	0	0	**451**
9:00 AM	0	1	1	48	185	90	16	0	0	0	0	0	0	0	0	0	0	**341**
10:00 AM	0	2	11	82	192	61	18	1	0	0	0	0	0	0	0	0	0	**367**
11:00 AM	0	3	18	115	281	75	7	1	0	0	0	0	0	0	0	0	0	**500**
12:00 PM	0	1	19	137	286	73	12	0	0	0	0	0	0	0	0	0	0	**528**
1:00 PM	0	4	11	143	233	90	7	1	0	0	0	0	0	0	0	0	0	**489**
2:00 PM	1	5	16	116	290	89	5	1	0	0	2	0	0	0	0	0	0	**525**
3:00 PM	0	4	9	98	281	90	15	2	0	0	0	0	0	0	0	0	0	**499**
4:00 PM	1	2	5	122	302	95	13	2	1	0	0	0	0	0	0	0	0	**543**
5:00 PM	0	1	13	156	335	97	8	2	0	1	0	0	0	0	0	0	0	**613**
6:00 PM	0	1	2	93	224	88	13	3	0	0	0	0	0	0	0	0	0	**424**
7:00 PM	0	1	6	73	188	65	14	4	0	0	0	0	0	0	0	0	0	**351**
8:00 PM	0	0	8	58	141	34	3	0	0	0	0	0	0	0	0	0	0	**244**
9:00 PM	0	1	5	65	92	43	8	2	0	0	0	0	0	0	0	0	0	**216**
10:00 PM	0	1	2	43	65	28	3	2	0	0	0	0	0	0	0	0	0	**144**
11:00 PM	0	1	0	8	19	16	3	0	1	0	0	0	0	0	0	0	0	**48**
Total	**210**	**49**	**161**	**1,742**	**3,668**	**1,207**	**175**	**28**	**2**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**7,246**
Percent	**2.9%**	**0.7%**	**2.2%**	**24.0%**	**50.6%**	**16.7%**	**2.4%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	26.8	mph	Mean (Average) Speed	26.5	mph
85th Percentile	30.9	mph	10 mph Pace	22.4 - 32.4	mph
95th Percentile	33.7	mph	Percent in Pace	80.4	%

Project Manager: (415) 310-6469
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Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 15

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	3	7	6	0	2	0	1	0	0	0	0	0	0	**20**
1:00 AM	0	0	0	1	2	9	5	0	1	0	0	0	0	1	0	0	0	**19**
2:00 AM	0	0	0	0	1	3	2	1	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	1	0	0	2	3	5	4	2	0	1	0	0	0	0	0	0	0	**18**
5:00 AM	0	0	0	3	11	15	15	11	1	1	0	0	0	0	0	0	0	**57**
6:00 AM	0	0	0	7	54	73	48	17	3	1	0	0	0	0	0	0	0	**203**
7:00 AM	4	0	1	26	104	158	59	9	1	0	0	0	0	0	0	0	0	**362**
8:00 AM	1	0	0	12	87	248	118	18	1	2	0	0	0	0	0	0	0	**487**
9:00 AM	0	0	0	15	87	219	99	23	5	0	1	0	0	0	0	0	0	**449**
10:00 AM	0	0	0	18	93	229	91	18	2	0	0	0	0	0	0	0	0	**451**
11:00 AM	0	3	12	37	138	242	91	10	4	0	1	0	0	0	0	0	0	**538**
12:00 PM	0	1	1	22	157	270	99	11	0	0	0	0	0	0	0	0	0	**561**
1:00 PM	0	6	3	44	192	258	91	12	2	0	0	0	0	0	0	0	0	**608**
2:00 PM	0	3	0	21	210	310	98	15	2	0	0	0	0	0	0	0	0	**659**
3:00 PM	0	6	12	55	230	307	76	13	2	0	0	0	0	0	0	0	0	**701**
4:00 PM	0	0	4	55	246	395	105	7	1	0	0	1	0	0	0	0	0	**814**
5:00 PM	1	13	5	41	291	359	107	11	1	0	0	0	0	0	0	0	0	**829**
6:00 PM	2	1	8	40	194	267	81	15	1	0	0	0	0	0	0	0	0	**609**
7:00 PM	0	0	0	15	124	199	81	18	2	0	0	0	0	0	0	0	0	**439**
8:00 PM	0	0	2	26	138	135	34	2	0	0	0	0	0	0	0	0	0	**337**
9:00 PM	0	0	0	10	76	85	44	10	3	0	0	0	0	0	0	0	0	**228**
10:00 PM	0	0	1	6	36	67	25	7	0	0	0	0	0	0	0	0	0	**142**
11:00 PM	0	0	0	6	11	27	11	2	1	0	0	0	0	0	0	0	0	**58**
Total	**9**	**33**	**50**	**462**	**2,489**	**3,889**	**1,393**	**233**	**35**	**5**	**3**	**1**	**0**	**1**	**0**	**0**	**0**	**8,603**
Percent	**0.1%**	**0.4%**	**0.6%**	**5.4%**	**28.9%**	**45.2%**	**16.2%**	**2.7%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	31.5	mph	Mean (Average) Speed	31.5	mph
85th Percentile	35.8	mph	10 mph Pace	26.5 - 36.5	mph
95th Percentile	38.9	mph	Percent in Pace	77.0	%

Location: Francisco Blvd E, B/W Grand & Bellam
Date Range: 4/24/2019 - 4/30/2019
Site Code: 15

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	19	20	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	20	39
1:00 AM	13	19	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	19	32
2:00 AM	4	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11
3:00 AM	10	7	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	7	17
4:00 AM	23	18	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	18	41
5:00 AM	89	57	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	57	146
6:00 AM	254	203	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254	203	457
7:00 AM	**551**	362	913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**551**	362	913
8:00 AM	451	487	938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451	487	938
9:00 AM	341	449	790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	341	449	790
10:00 AM	367	451	818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	367	451	818
11:00 AM	500	**538**	**1,038**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	**538**	**1,038**
12:00 PM	528	561	1,089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	561	1,089
1:00 PM	489	608	1,097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	489	608	1,097
2:00 PM	525	659	1,184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	525	659	1,184
3:00 PM	499	701	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	499	701	1,200
4:00 PM	543	814	1,357	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	543	814	1,357
5:00 PM	**613**	**829**	**1,442**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**613**	**829**	**1,442**
6:00 PM	424	609	1,033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	424	609	1,033
7:00 PM	351	439	790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	351	439	790
8:00 PM	244	337	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	244	337	581
9:00 PM	216	228	444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	228	444
10:00 PM	144	142	286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144	142	286
11:00 PM	48	58	106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	58	106
Total	7,246	8,603	15,849	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,246	8,603	15,849
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	07:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	11:00	11:00
Vol.	551	538	1,038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	551	538	1,038
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	613	829	1,442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	613	829	1,442

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Francisco Blvd E, B/W Bellam & Main

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 16

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	26	3,846	962	7	469	9	0	4	11	1	1	1	0	5,337
Percent	0.5%	72.1%	18.0%	0.1%	8.8%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	26	5,625	1,660	2	622	17	0	9	15	0	2	1	3	7,982
Percent	0.3%	70.5%	20.8%	0.0%	7.8%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%
Total	52	9,471	2,622	9	1,091	26	0	13	26	1	3	2	3	13,319
Percent	0.4%	71.1%	19.7%	0.1%	8.2%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	10	1	0	2	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	1	2	0	0	1	0	1	0	0	**10**
3:00 AM	0	8	0	0	2	1	0	1	0	0	0	0	0	**12**
4:00 AM	0	9	2	0	3	1	0	0	1	0	0	0	0	**16**
5:00 AM	0	14	2	0	10	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	43	3	34	0	0	0	0	0	0	0	0	**139**
7:00 AM	1	89	55	0	37	0	0	0	0	0	0	0	0	**182**
8:00 AM	1	180	71	0	31	0	0	0	4	1	0	0	0	**288**
9:00 AM	1	211	79	1	46	2	0	0	1	0	0	1	0	**342**
10:00 AM	2	256	77	0	36	1	0	1	1	0	0	0	0	**374**
11:00 AM	4	356	74	1	35	1	0	0	0	0	0	0	0	**471**
12:00 PM	1	354	84	0	37	0	0	0	0	0	0	0	0	**476**
1:00 PM	3	372	56	0	33	0	0	1	0	0	0	0	0	**465**
2:00 PM	2	336	69	0	28	0	0	0	1	0	0	0	0	**436**
3:00 PM	2	294	64	0	27	0	0	1	0	0	0	0	0	**388**
4:00 PM	0	278	51	0	28	0	0	0	0	0	0	0	0	**357**
5:00 PM	3	200	62	0	20	0	0	0	0	0	0	0	0	**285**
6:00 PM	3	220	50	1	8	0	0	0	0	0	0	0	0	**282**
7:00 PM	1	174	35	0	11	1	0	0	1	0	0	0	0	**223**
8:00 PM	0	180	34	1	16	0	0	0	0	0	0	0	0	**231**
9:00 PM	1	134	29	0	14	0	0	0	0	0	0	0	0	**178**
10:00 PM	1	62	14	0	9	0	0	0	1	0	0	0	0	**87**
11:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	**39**
Total	**26**	**3,846**	**962**	**7**	**469**	**9**	**0**	**4**	**11**	**1**	**1**	**1**	**0**	**5,337**
Percent	**0.5%**	**72.1%**	**18.0%**	**0.1%**	**8.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	2	0	0	2	1	0	0	1	0	0	0	0	**6**
3:00 AM	0	8	2	0	3	1	0	0	0	0	1	0	0	**15**
4:00 AM	1	31	1	1	6	2	0	0	1	0	0	0	0	**43**
5:00 AM	0	76	18	0	12	1	0	0	0	0	1	1	0	**109**
6:00 AM	0	163	105	0	41	2	0	1	1	0	0	0	0	**313**
7:00 AM	2	294	175	0	56	1	0	1	4	0	0	0	1	**534**
8:00 AM	1	320	118	0	50	1	0	1	0	0	0	0	0	**491**
9:00 AM	2	363	148	1	36	2	0	2	0	0	0	0	1	**555**
10:00 AM	2	424	115	0	56	1	0	0	0	0	0	0	0	**598**
11:00 AM	1	443	111	0	46	2	0	0	1	0	0	0	0	**604**
12:00 PM	2	478	100	0	44	1	0	0	0	0	0	0	0	**625**
1:00 PM	3	426	116	0	46	1	0	1	1	0	0	0	0	**594**
2:00 PM	2	442	97	0	51	0	0	1	1	0	0	0	0	**594**
3:00 PM	2	431	108	0	36	0	0	1	0	0	0	0	0	**578**
4:00 PM	1	375	142	0	41	0	0	0	0	0	0	0	0	**559**
5:00 PM	4	383	100	0	29	0	0	0	0	0	0	0	0	**516**
6:00 PM	0	304	72	0	18	1	0	0	3	0	0	0	0	**398**
7:00 PM	3	260	57	0	20	0	0	0	0	0	0	0	0	**340**
8:00 PM	0	165	39	0	14	0	0	0	1	0	0	0	0	**219**
9:00 PM	0	158	20	0	7	0	0	1	1	0	0	0	1	**188**
10:00 PM	0	56	12	0	4	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	10	1	0	3	0	0	0	0	0	0	0	0	**14**
Total	**26**	**5,625**	**1,660**	**2**	**622**	**17**	**0**	**9**	**15**	**0**	**2**	**1**	**3**	**7,982**
Percent	**0.3%**	**70.5%**	**20.8%**	**0.0%**	**7.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	10	1	0	2	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	1	2	0	0	1	0	1	0	0	**10**
3:00 AM	0	8	0	0	2	1	0	1	0	0	0	0	0	**12**
4:00 AM	0	9	2	0	3	1	0	0	1	0	0	0	0	**16**
5:00 AM	0	14	2	0	10	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	43	3	34	0	0	0	0	0	0	0	0	**139**
7:00 AM	1	89	55	0	37	0	0	0	0	0	0	0	0	**182**
8:00 AM	1	180	71	0	31	0	0	0	4	1	0	0	0	**288**
9:00 AM	1	211	79	1	46	2	0	0	1	0	0	1	0	**342**
10:00 AM	2	256	77	0	36	1	0	1	1	0	0	0	0	**374**
11:00 AM	4	356	74	1	35	1	0	0	0	0	0	0	0	**471**
12:00 PM	1	354	84	0	37	0	0	0	0	0	0	0	0	**476**
1:00 PM	3	372	56	0	33	0	0	1	0	0	0	0	0	**465**
2:00 PM	2	336	69	0	28	0	0	0	1	0	0	0	0	**436**
3:00 PM	2	294	64	0	27	0	0	1	0	0	0	0	0	**388**
4:00 PM	0	278	51	0	28	0	0	0	0	0	0	0	0	**357**
5:00 PM	3	200	62	0	20	0	0	0	0	0	0	0	0	**285**
6:00 PM	3	220	50	1	8	0	0	0	0	0	0	0	0	**282**
7:00 PM	1	174	35	0	11	1	0	0	1	0	0	0	0	**223**
8:00 PM	0	180	34	1	16	0	0	0	0	0	0	0	0	**231**
9:00 PM	1	134	29	0	14	0	0	0	0	0	0	0	0	**178**
10:00 PM	1	62	14	0	9	0	0	0	1	0	0	0	0	**87**
11:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	**39**
Total	**26**	**3,846**	**962**	**7**	**469**	**9**	**0**	**4**	**11**	**1**	**1**	**1**	**0**	**5,337**
Percent	**0.5%**	**72.1%**	**18.0%**	**0.1%**	**8.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	2	0	0	2	1	0	0	1	0	0	0	0	**6**
3:00 AM	0	8	2	0	3	1	0	0	0	0	1	0	0	**15**
4:00 AM	1	31	1	1	6	2	0	0	1	0	0	0	0	**43**
5:00 AM	0	76	18	0	12	1	0	0	0	0	1	1	0	**109**
6:00 AM	0	163	105	0	41	2	0	1	1	0	0	0	0	**313**
7:00 AM	2	294	175	0	56	1	0	1	4	0	0	0	1	**534**
8:00 AM	1	320	118	0	50	1	0	1	0	0	0	0	0	**491**
9:00 AM	2	363	148	1	36	2	0	2	0	0	0	0	1	**555**
10:00 AM	2	424	115	0	56	1	0	0	0	0	0	0	0	**598**
11:00 AM	1	443	111	0	46	2	0	0	1	0	0	0	0	**604**
12:00 PM	2	478	100	0	44	1	0	0	0	0	0	0	0	**625**
1:00 PM	3	426	116	0	46	1	0	1	1	0	0	0	0	**594**
2:00 PM	2	442	97	0	51	0	0	1	1	0	0	0	0	**594**
3:00 PM	2	431	108	0	36	0	0	1	0	0	0	0	0	**578**
4:00 PM	1	375	142	0	41	0	0	0	0	0	0	0	0	**559**
5:00 PM	4	383	100	0	29	0	0	0	0	0	0	0	0	**516**
6:00 PM	0	304	72	0	18	1	0	0	3	0	0	0	0	**398**
7:00 PM	3	260	57	0	20	0	0	0	0	0	0	0	0	**340**
8:00 PM	0	165	39	0	14	0	0	0	1	0	0	0	0	**219**
9:00 PM	0	158	20	0	7	0	0	1	1	0	0	0	1	**188**
10:00 PM	0	56	12	0	4	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	10	1	0	3	0	0	0	0	0	0	0	0	**14**
Total	**26**	**5,625**	**1,660**	**2**	**622**	**17**	**0**	**9**	**15**	**0**	**2**	**1**	**3**	**7,982**
Percent	**0.3%**	**70.5%**	**20.8%**	**0.0%**	**7.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	2	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	10	1	0	2	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	1	2	0	0	1	0	1	0	0	**10**
3:00 AM	0	8	0	0	2	1	0	1	0	0	0	0	0	**12**
4:00 AM	0	9	2	0	3	1	0	0	1	0	0	0	0	**16**
5:00 AM	0	14	2	0	10	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	59	43	3	34	0	0	0	0	0	0	0	0	**139**
7:00 AM	1	89	55	0	37	0	0	0	0	0	0	0	0	**182**
8:00 AM	1	180	71	0	31	0	0	0	4	1	0	0	0	**288**
9:00 AM	1	211	79	1	46	2	0	0	1	0	0	1	0	**342**
10:00 AM	2	256	77	0	36	1	0	1	1	0	0	0	0	**374**
11:00 AM	4	356	74	1	35	1	0	0	0	0	0	0	0	**471**
12:00 PM	1	354	84	0	37	0	0	0	0	0	0	0	0	**476**
1:00 PM	3	372	56	0	33	0	0	1	0	0	0	0	0	**465**
2:00 PM	2	336	69	0	28	0	0	0	1	0	0	0	0	**436**
3:00 PM	2	294	64	0	27	0	0	1	0	0	0	0	0	**388**
4:00 PM	0	278	51	0	28	0	0	0	0	0	0	0	0	**357**
5:00 PM	3	200	62	0	20	0	0	0	0	0	0	0	0	**285**
6:00 PM	3	220	50	1	8	0	0	0	0	0	0	0	0	**282**
7:00 PM	1	174	35	0	11	1	0	0	1	0	0	0	0	**223**
8:00 PM	0	180	34	1	16	0	0	0	0	0	0	0	0	**231**
9:00 PM	1	134	29	0	14	0	0	0	0	0	0	0	0	**178**
10:00 PM	1	62	14	0	9	0	0	0	1	0	0	0	0	**87**
11:00 PM	0	31	7	0	1	0	0	0	0	0	0	0	0	**39**
Total	**26**	**3,846**	**962**	**7**	**469**	**9**	**0**	**4**	**11**	**1**	**1**	**1**	**0**	**5,337**
Percent	**0.5%**	**72.1%**	**18.0%**	**0.1%**	**8.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	2	0	0	2	1	0	0	1	0	0	0	0	**6**
3:00 AM	0	8	2	0	3	1	0	0	0	0	1	0	0	**15**
4:00 AM	1	31	1	1	6	2	0	0	1	0	0	0	0	**43**
5:00 AM	0	76	18	0	12	1	0	0	0	0	1	1	0	**109**
6:00 AM	0	163	105	0	41	2	0	1	1	0	0	0	0	**313**
7:00 AM	2	294	175	0	56	1	0	1	4	0	0	0	1	**534**
8:00 AM	1	320	118	0	50	1	0	1	0	0	0	0	0	**491**
9:00 AM	2	363	148	1	36	2	0	2	0	0	0	0	1	**555**
10:00 AM	2	424	115	0	56	1	0	0	0	0	0	0	0	**598**
11:00 AM	1	443	111	0	46	2	0	0	1	0	0	0	0	**604**
12:00 PM	2	478	100	0	44	1	0	0	0	0	0	0	0	**625**
1:00 PM	3	426	116	0	46	1	0	1	1	0	0	0	0	**594**
2:00 PM	2	442	97	0	51	0	0	1	1	0	0	0	0	**594**
3:00 PM	2	431	108	0	36	0	0	1	0	0	0	0	0	**578**
4:00 PM	1	375	142	0	41	0	0	0	0	0	0	0	0	**559**
5:00 PM	4	383	100	0	29	0	0	0	0	0	0	0	0	**516**
6:00 PM	0	304	72	0	18	1	0	0	3	0	0	0	0	**398**
7:00 PM	3	260	57	0	20	0	0	0	0	0	0	0	0	**340**
8:00 PM	0	165	39	0	14	0	0	0	1	0	0	0	0	**219**
9:00 PM	0	158	20	0	7	0	0	1	1	0	0	0	1	**188**
10:00 PM	0	56	12	0	4	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	10	1	0	3	0	0	0	0	0	0	0	0	**14**
Total	**26**	**5,625**	**1,660**	**2**	**622**	**17**	**0**	**9**	**15**	**0**	**2**	**1**	**3**	**7,982**
Percent	**0.3%**	**70.5%**	**20.8%**	**0.0%**	**7.8%**	**0.2%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Francisco Blvd E, B/W Bellam & Main

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 16

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	1	25	30	125	971	2,397	1,404	310	56	16	1	0	1	0	0	0	0	5,337
Percent	0.0%	0.5%	0.6%	2.3%	18.2%	44.9%	26.3%	5.8%	1.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	6	27	76	287	854	2,351	2,905	1,186	226	48	11	3	1	1	0	0	0	7,982
Percent	0.1%	0.3%	1.0%	3.6%	10.7%	29.5%	36.4%	14.9%	2.8%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	7	52	106	412	1,825	4,748	4,309	1,496	282	64	12	3	2	1	0	0	0	13,319
Percent	0.1%	0.4%	0.8%	3.1%	13.7%	35.6%	32.4%	11.2%	2.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	33.2	mph	Mean (Average) Speed	33.3	mph
85th Percentile	37.8	mph	10 mph Pace	28.0 - 38.0	mph
95th Percentile	41.3	mph	Percent in Pace	75.8	%
Southbound			**Southbound**		
50th Percentile (Median)	35.6	mph	Mean (Average) Speed	35.3	mph
85th Percentile	40.6	mph	10 mph Pace	30.8 - 40.8	mph
95th Percentile	44.1	mph	Percent in Pace	66.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	1	5	2	5	2	1	0	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	0	0	4	2	6	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	0	1	1	2	4	2	0	0	0	0	0	0	0	0	0	**10**
3:00 AM	0	0	0	0	3	4	3	2	0	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	0	0	0	1	4	2	6	0	2	0	0	1	0	0	0	0	**16**
5:00 AM	0	0	0	0	2	8	15	1	0	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	0	1	2	14	51	51	11	7	2	0	0	0	0	0	0	0	**139**
7:00 AM	0	0	0	3	18	82	50	25	3	1	0	0	0	0	0	0	0	**182**
8:00 AM	0	3	4	12	55	106	76	22	8	2	0	0	0	0	0	0	0	**288**
9:00 AM	0	1	4	2	52	164	103	16	0	0	0	0	0	0	0	0	0	**342**
10:00 AM	0	4	1	9	66	164	111	17	2	0	0	0	0	0	0	0	0	**374**
11:00 AM	1	2	0	9	95	253	98	12	1	0	0	0	0	0	0	0	0	**471**
12:00 PM	0	0	4	25	102	228	103	13	1	0	0	0	0	0	0	0	0	**476**
1:00 PM	0	3	2	13	135	206	95	10	1	0	0	0	0	0	0	0	0	**465**
2:00 PM	0	3	2	13	94	216	87	18	2	1	0	0	0	0	0	0	0	**436**
3:00 PM	0	4	3	6	82	186	88	17	1	1	0	0	0	0	0	0	0	**388**
4:00 PM	0	1	1	3	51	193	85	17	5	1	0	0	0	0	0	0	0	**357**
5:00 PM	0	2	2	1	51	95	101	30	2	1	0	0	0	0	0	0	0	**285**
6:00 PM	0	0	4	5	24	100	115	28	6	0	0	0	0	0	0	0	0	**282**
7:00 PM	0	1	0	5	33	88	74	12	8	2	0	0	0	0	0	0	0	**223**
8:00 PM	0	0	0	11	39	95	72	13	1	0	0	0	0	0	0	0	0	**231**
9:00 PM	0	1	1	3	35	94	31	11	1	1	0	0	0	0	0	0	0	**178**
10:00 PM	0	0	0	1	15	32	28	10	1	0	0	0	0	0	0	0	0	**87**
11:00 PM	0	0	1	0	2	17	8	6	3	1	1	0	0	0	0	0	0	**39**
Total	**1**	**25**	**30**	**125**	**971**	**2,397**	**1,404**	**310**	**56**	**16**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**5,337**
Percent	**0.0%**	**0.5%**	**0.6%**	**2.3%**	**18.2%**	**44.9%**	**26.3%**	**5.8%**	**1.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	33.2	mph	Mean (Average) Speed	33.3	mph
85th Percentile	37.8	mph	10 mph Pace	28.0 - 38.0	mph
95th Percentile	41.3	mph	Percent in Pace	75.8	%

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	3	1	0	0	0	0	1	1	0	0	0	**7**
1:00 AM	0	0	0	0	0	4	4	1	0	1	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	0	0	2	0	3	1	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	0	2	1	7	4	1	0	0	0	0	0	0	0	0	**15**
4:00 AM	0	0	0	0	2	4	20	10	6	0	0	1	0	0	0	0	0	**43**
5:00 AM	0	0	2	2	0	13	42	30	16	3	1	0	0	0	0	0	0	**109**
6:00 AM	0	0	1	0	16	38	131	95	25	4	1	2	0	0	0	0	0	**313**
7:00 AM	0	1	1	11	32	157	217	95	11	7	2	0	0	0	0	0	0	**534**
8:00 AM	0	4	6	15	57	135	194	66	12	1	1	0	0	0	0	0	0	**491**
9:00 AM	1	6	16	19	49	168	219	66	7	3	1	0	0	0	0	0	0	**555**
10:00 AM	1	2	10	37	88	192	186	75	7	0	0	0	0	0	0	0	0	**598**
11:00 AM	0	1	8	56	82	208	183	55	7	4	0	0	0	0	0	0	0	**604**
12:00 PM	1	1	10	32	75	216	228	51	11	0	0	0	0	0	0	0	0	**625**
1:00 PM	0	1	0	19	111	225	172	56	8	2	0	0	0	0	0	0	0	**594**
2:00 PM	0	3	7	26	79	203	205	59	11	1	0	0	0	0	0	0	0	**594**
3:00 PM	1	5	9	38	99	186	160	65	14	1	0	0	0	0	0	0	0	**578**
4:00 PM	1	1	2	13	77	165	206	79	12	3	0	0	0	0	0	0	0	**559**
5:00 PM	0	0	2	15	34	139	204	98	22	1	1	0	0	0	0	0	0	**516**
6:00 PM	0	2	0	0	13	95	168	99	17	4	0	0	0	0	0	0	0	**398**
7:00 PM	0	0	1	0	9	68	154	89	15	4	0	0	0	0	0	0	0	**340**
8:00 PM	0	0	0	1	11	68	94	35	9	1	0	0	0	0	0	0	0	**219**
9:00 PM	0	0	0	1	15	41	78	37	10	5	1	0	0	0	0	0	0	**188**
10:00 PM	0	0	0	0	1	21	24	17	3	3	3	0	0	0	0	0	0	**72**
11:00 PM	1	0	1	2	0	3	3	2	2	0	0	0	0	0	0	0	0	**14**
Total	**6**	**27**	**76**	**287**	**854**	**2,351**	**2,905**	**1,186**	**226**	**48**	**11**	**3**	**1**	**1**	**0**	**0**	**0**	**7,982**
Percent	**0.1%**	**0.3%**	**1.0%**	**3.6%**	**10.7%**	**29.5%**	**36.4%**	**14.9%**	**2.8%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	35.6	mph	Mean (Average) Speed	35.3	mph
85th Percentile	40.6	mph	10 mph Pace	30.8 - 40.8	mph
95th Percentile	44.1	mph	Percent in Pace	66.52	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	1	5	2	5	2	1	0	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	0	0	4	2	6	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	0	1	1	2	4	2	0	0	0	0	0	0	0	0	0	**10**
3:00 AM	0	0	0	0	3	4	3	2	0	0	0	0	0	0	0	0	0	**12**
4:00 AM	0	0	0	0	1	4	2	6	0	2	0	0	1	0	0	0	0	**16**
5:00 AM	0	0	0	0	2	8	15	1	0	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	0	1	2	14	51	51	11	7	2	0	0	0	0	0	0	0	**139**
7:00 AM	0	0	0	3	18	82	50	25	3	1	0	0	0	0	0	0	0	**182**
8:00 AM	0	3	4	12	55	106	76	22	8	2	0	0	0	0	0	0	0	**288**
9:00 AM	0	1	4	2	52	164	103	16	0	0	0	0	0	0	0	0	0	**342**
10:00 AM	0	4	1	9	66	164	111	17	2	0	0	0	0	0	0	0	0	**374**
11:00 AM	1	2	0	9	95	253	98	12	1	0	0	0	0	0	0	0	0	**471**
12:00 PM	0	0	4	25	102	228	103	13	1	0	0	0	0	0	0	0	0	**476**
1:00 PM	0	3	2	13	135	206	95	10	1	0	0	0	0	0	0	0	0	**465**
2:00 PM	0	3	2	13	94	216	87	18	2	1	0	0	0	0	0	0	0	**436**
3:00 PM	0	4	3	6	82	186	88	17	1	1	0	0	0	0	0	0	0	**388**
4:00 PM	0	1	1	3	51	193	85	17	5	1	0	0	0	0	0	0	0	**357**
5:00 PM	0	2	2	1	51	95	101	30	2	1	0	0	0	0	0	0	0	**285**
6:00 PM	0	0	4	5	24	100	115	28	6	0	0	0	0	0	0	0	0	**282**
7:00 PM	0	1	0	5	33	88	74	12	8	2	0	0	0	0	0	0	0	**223**
8:00 PM	0	0	0	11	39	95	72	13	1	0	0	0	0	0	0	0	0	**231**
9:00 PM	0	1	1	3	35	94	31	11	1	1	0	0	0	0	0	0	0	**178**
10:00 PM	0	0	0	1	15	32	28	10	1	0	0	0	0	0	0	0	0	**87**
11:00 PM	0	0	1	0	2	17	8	6	3	1	1	0	0	0	0	0	0	**39**
Total	**1**	**25**	**30**	**125**	**971**	**2,397**	**1,404**	**310**	**56**	**16**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**5,337**
Percent	**0.0%**	**0.5%**	**0.6%**	**2.3%**	**18.2%**	**44.9%**	**26.3%**	**5.8%**	**1.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	33.2	mph	Mean (Average) Speed	33.3	mph
85th Percentile	37.8	mph	10 mph Pace	28.0 - 38.0	mph
95th Percentile	41.3	mph	Percent in Pace	75.8	%

Project Manager: (415) 310-6469
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Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 to 4/25/2019
Site Code: 16

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	3	1	0	0	0	0	1	1	0	0	0	**7**
1:00 AM	0	0	0	0	0	4	4	1	0	1	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	0	0	2	0	3	1	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	0	2	1	7	4	1	0	0	0	0	0	0	0	0	**15**
4:00 AM	0	0	0	0	2	4	20	10	6	0	0	1	0	0	0	0	0	**43**
5:00 AM	0	0	2	2	0	13	42	30	16	3	1	0	0	0	0	0	0	**109**
6:00 AM	0	0	1	0	16	38	131	95	25	4	1	2	0	0	0	0	0	**313**
7:00 AM	0	1	1	11	32	157	217	95	11	7	2	0	0	0	0	0	0	**534**
8:00 AM	0	4	6	15	57	135	194	66	12	1	1	0	0	0	0	0	0	**491**
9:00 AM	1	6	16	19	49	168	219	66	7	3	1	0	0	0	0	0	0	**555**
10:00 AM	1	2	10	37	88	192	186	75	7	0	0	0	0	0	0	0	0	**598**
11:00 AM	0	1	8	56	82	208	183	55	7	4	0	0	0	0	0	0	0	**604**
12:00 PM	1	1	10	32	75	216	228	51	11	0	0	0	0	0	0	0	0	**625**
1:00 PM	0	1	0	19	111	225	172	56	8	2	0	0	0	0	0	0	0	**594**
2:00 PM	0	3	7	26	79	203	205	59	11	1	0	0	0	0	0	0	0	**594**
3:00 PM	1	5	9	38	99	186	160	65	14	1	0	0	0	0	0	0	0	**578**
4:00 PM	1	1	2	13	77	165	206	79	12	3	0	0	0	0	0	0	0	**559**
5:00 PM	0	0	2	15	34	139	204	98	22	1	1	0	0	0	0	0	0	**516**
6:00 PM	0	2	0	0	13	95	168	99	17	4	0	0	0	0	0	0	0	**398**
7:00 PM	0	0	1	0	9	68	154	89	15	4	0	0	0	0	0	0	0	**340**
8:00 PM	0	0	0	1	11	68	94	35	9	1	0	0	0	0	0	0	0	**219**
9:00 PM	0	0	0	1	15	41	78	37	10	5	1	0	0	0	0	0	0	**188**
10:00 PM	0	0	0	0	1	21	24	17	3	3	3	0	0	0	0	0	0	**72**
11:00 PM	1	0	1	2	0	3	3	2	2	0	0	0	0	0	0	0	0	**14**
Total	**6**	**27**	**76**	**287**	**854**	**2,351**	**2,905**	**1,186**	**226**	**48**	**11**	**3**	**1**	**1**	**0**	**0**	**0**	**7,982**
Percent	**0.1%**	**0.3%**	**1.0%**	**3.6%**	**10.7%**	**29.5%**	**36.4%**	**14.9%**	**2.8%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	35.6	mph	Mean (Average) Speed	35.3	mph
85th Percentile	40.6	mph	10 mph Pace	30.8 - 40.8	mph
95th Percentile	44.1	mph	Percent in Pace	66.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd E, B/W Bellam & Main
Date Range: 4/25/2019 - 5/1/2019
Site Code: 16

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	17	7	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	7	24
1:00 AM	13	10	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	10	23
2:00 AM	10	6	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	6	16
3:00 AM	12	15	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	15	27
4:00 AM	16	43	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	43	59
5:00 AM	26	109	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	109	135
6:00 AM	139	313	452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139	313	452
7:00 AM	182	534	716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	534	716
8:00 AM	288	491	779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	288	491	779
9:00 AM	342	555	897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	342	555	897
10:00 AM	374	598	972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	374	598	972
11:00 AM	**471**	**604**	**1,075**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**471**	**604**	**1,075**
12:00 PM	**476**	**625**	**1,101**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**476**	**625**	**1,101**
1:00 PM	465	594	1,059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	465	594	1,059
2:00 PM	436	594	1,030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	436	594	1,030
3:00 PM	388	578	966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	388	578	966
4:00 PM	357	559	916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	357	559	916
5:00 PM	285	516	801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285	516	801
6:00 PM	282	398	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	282	398	680
7:00 PM	223	340	563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	340	563
8:00 PM	231	219	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	219	450
9:00 PM	178	188	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178	188	366
10:00 PM	87	72	159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	72	159
11:00 PM	39	14	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	14	53
Total	5,337	7,982	13,319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,337	7,982	13,319
Percent	40%	60%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	60%	-
AM Peak	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	11:00	11:00
Vol.	471	604	1,075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	471	604	1,075
PM Peak	12:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	12:00	12:00
Vol.	476	625	1,101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	476	625	1,101

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Francisco Blvd W, B/W 2nd & Andersen

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 17

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	10	1,176	182	2	70	12	0	0	5	1	0	0	0	1,458
Percent	0.7%	80.7%	12.5%	0.1%	4.8%	0.8%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	100%
Southbound	18	1,404	226	0	63	12	0	0	6	0	0	0	0	1,729
Percent	1.0%	81.2%	13.1%	0.0%	3.6%	0.7%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	100%
Total	28	2,580	408	2	133	24	0	0	11	1	0	0	0	3,187
Percent	0.9%	81.0%	12.8%	0.1%	4.2%	0.8%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	1	0	2	1	0	0	2	0	0	0	0	**7**
5:00 AM	0	3	3	0	4	0	0	0	0	0	0	0	0	**10**
6:00 AM	1	25	6	0	2	1	0	0	0	0	0	0	0	**35**
7:00 AM	0	30	5	0	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	2	48	5	0	5	2	0	0	0	0	0	0	0	**62**
9:00 AM	1	81	13	1	4	0	0	0	0	0	0	0	0	**100**
10:00 AM	0	106	16	0	6	1	0	0	0	0	0	0	0	**129**
11:00 AM	1	109	19	0	8	2	0	0	1	1	0	0	0	**141**
12:00 PM	2	128	16	0	10	2	0	0	0	0	0	0	0	**158**
1:00 PM	1	128	20	0	6	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	114	14	0	5	1	0	0	0	0	0	0	0	**134**
3:00 PM	0	120	14	0	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	68	22	0	2	0	0	0	0	0	0	0	0	**92**
5:00 PM	0	83	7	0	2	0	0	0	0	0	0	0	0	**92**
6:00 PM	0	45	3	0	0	0	0	0	1	0	0	0	0	**49**
7:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
8:00 PM	0	32	8	0	0	0	0	0	1	0	0	0	0	**41**
9:00 PM	1	5	2	0	0	0	0	0	0	0	0	0	0	**8**
10:00 PM	1	4	2	0	1	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**10**	**1,176**	**182**	**2**	**70**	**12**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1,458**
Percent	**0.7%**	**80.7%**	**12.5%**	**0.1%**	**4.8%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	0	1	0	0	0	0	**6**
5:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	0	**7**
6:00 AM	0	2	2	0	3	2	0	0	0	0	0	0	0	**9**
7:00 AM	1	6	2	0	4	2	0	0	0	0	0	0	0	**15**
8:00 AM	0	31	4	0	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	60	8	0	6	0	0	0	0	0	0	0	0	**75**
10:00 AM	0	105	16	0	4	0	0	0	0	0	0	0	0	**125**
11:00 AM	3	134	26	0	4	0	0	0	0	0	0	0	0	**167**
12:00 PM	2	129	25	0	11	1	0	0	2	0	0	0	0	**170**
1:00 PM	2	156	20	0	5	2	0	0	0	0	0	0	0	**185**
2:00 PM	1	150	22	0	7	1	0	0	0	0	0	0	0	**181**
3:00 PM	0	151	21	0	5	0	0	0	0	0	0	0	0	**177**
4:00 PM	3	112	26	0	4	0	0	0	0	0	0	0	0	**145**
5:00 PM	0	114	18	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	3	94	11	0	0	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	69	6	0	1	0	0	0	0	0	0	0	0	**76**
8:00 PM	0	45	10	0	0	0	0	0	1	0	0	0	0	**56**
9:00 PM	0	32	5	0	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	2	6	1	0	1	0	0	0	0	0	0	0	0	**10**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**18**	**1,404**	**226**	**0**	**63**	**12**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1,729**
Percent	**1.0%**	**81.2%**	**13.1%**	**0.0%**	**3.6%**	**0.7%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	1	0	2	1	0	0	2	0	0	0	0	**7**
5:00 AM	0	3	3	0	4	0	0	0	0	0	0	0	0	**10**
6:00 AM	1	25	6	0	2	1	0	0	0	0	0	0	0	**35**
7:00 AM	0	30	5	0	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	2	48	5	0	5	2	0	0	0	0	0	0	0	**62**
9:00 AM	1	81	13	1	4	0	0	0	0	0	0	0	0	**100**
10:00 AM	0	106	16	0	6	1	0	0	0	0	0	0	0	**129**
11:00 AM	1	109	19	0	8	2	0	0	1	1	0	0	0	**141**
12:00 PM	2	128	16	0	10	2	0	0	0	0	0	0	0	**158**
1:00 PM	1	128	20	0	6	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	114	14	0	5	1	0	0	0	0	0	0	0	**134**
3:00 PM	0	120	14	0	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	68	22	0	2	0	0	0	0	0	0	0	0	**92**
5:00 PM	0	83	7	0	2	0	0	0	0	0	0	0	0	**92**
6:00 PM	0	45	3	0	0	0	0	0	1	0	0	0	0	**49**
7:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
8:00 PM	0	32	8	0	0	0	0	0	1	0	0	0	0	**41**
9:00 PM	1	5	2	0	0	0	0	0	0	0	0	0	0	**8**
10:00 PM	1	4	2	0	1	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**10**	**1,176**	**182**	**2**	**70**	**12**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1,458**
Percent	**0.7%**	**80.7%**	**12.5%**	**0.1%**	**4.8%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	0	1	0	0	0	0	**6**
5:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	0	**7**
6:00 AM	0	2	2	0	3	2	0	0	0	0	0	0	0	**9**
7:00 AM	1	6	2	0	4	2	0	0	0	0	0	0	0	**15**
8:00 AM	0	31	4	0	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	60	8	0	6	0	0	0	0	0	0	0	0	**75**
10:00 AM	0	105	16	0	4	0	0	0	0	0	0	0	0	**125**
11:00 AM	3	134	26	0	4	0	0	0	0	0	0	0	0	**167**
12:00 PM	2	129	25	0	11	1	0	0	2	0	0	0	0	**170**
1:00 PM	2	156	20	0	5	2	0	0	0	0	0	0	0	**185**
2:00 PM	1	150	22	0	7	1	0	0	0	0	0	0	0	**181**
3:00 PM	0	151	21	0	5	0	0	0	0	0	0	0	0	**177**
4:00 PM	3	112	26	0	4	0	0	0	0	0	0	0	0	**145**
5:00 PM	0	114	18	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	3	94	11	0	0	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	69	6	0	1	0	0	0	0	0	0	0	0	**76**
8:00 PM	0	45	10	0	0	0	0	0	1	0	0	0	0	**56**
9:00 PM	0	32	5	0	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	2	6	1	0	1	0	0	0	0	0	0	0	0	**10**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**18**	**1,404**	**226**	**0**	**63**	**12**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1,729**
Percent	**1.0%**	**81.2%**	**13.1%**	**0.0%**	**3.6%**	**0.7%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	1	0	2	1	0	0	2	0	0	0	0	**7**
5:00 AM	0	3	3	0	4	0	0	0	0	0	0	0	0	**10**
6:00 AM	1	25	6	0	2	1	0	0	0	0	0	0	0	**35**
7:00 AM	0	30	5	0	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	2	48	5	0	5	2	0	0	0	0	0	0	0	**62**
9:00 AM	1	81	13	1	4	0	0	0	0	0	0	0	0	**100**
10:00 AM	0	106	16	0	6	1	0	0	0	0	0	0	0	**129**
11:00 AM	1	109	19	0	8	2	0	0	1	1	0	0	0	**141**
12:00 PM	2	128	16	0	10	2	0	0	0	0	0	0	0	**158**
1:00 PM	1	128	20	0	6	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	114	14	0	5	1	0	0	0	0	0	0	0	**134**
3:00 PM	0	120	14	0	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	68	22	0	2	0	0	0	0	0	0	0	0	**92**
5:00 PM	0	83	7	0	2	0	0	0	0	0	0	0	0	**92**
6:00 PM	0	45	3	0	0	0	0	0	1	0	0	0	0	**49**
7:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
8:00 PM	0	32	8	0	0	0	0	0	1	0	0	0	0	**41**
9:00 PM	1	5	2	0	0	0	0	0	0	0	0	0	0	**8**
10:00 PM	1	4	2	0	1	0	0	0	0	0	0	0	0	**8**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**10**	**1,176**	**182**	**2**	**70**	**12**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1,458**
Percent	**0.7%**	**80.7%**	**12.5%**	**0.1%**	**4.8%**	**0.8%**	**0.0%**	**0.0%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	0	1	0	0	0	0	**6**
5:00 AM	0	3	0	0	3	0	0	0	1	0	0	0	0	**7**
6:00 AM	0	2	2	0	3	2	0	0	0	0	0	0	0	**9**
7:00 AM	1	6	2	0	4	2	0	0	0	0	0	0	0	**15**
8:00 AM	0	31	4	0	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	60	8	0	6	0	0	0	0	0	0	0	0	**75**
10:00 AM	0	105	16	0	4	0	0	0	0	0	0	0	0	**125**
11:00 AM	3	134	26	0	4	0	0	0	0	0	0	0	0	**167**
12:00 PM	2	129	25	0	11	1	0	0	2	0	0	0	0	**170**
1:00 PM	2	156	20	0	5	2	0	0	0	0	0	0	0	**185**
2:00 PM	1	150	22	0	7	1	0	0	0	0	0	0	0	**181**
3:00 PM	0	151	21	0	5	0	0	0	0	0	0	0	0	**177**
4:00 PM	3	112	26	0	4	0	0	0	0	0	0	0	0	**145**
5:00 PM	0	114	18	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	3	94	11	0	0	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	69	6	0	1	0	0	0	0	0	0	0	0	**76**
8:00 PM	0	45	10	0	0	0	0	0	1	0	0	0	0	**56**
9:00 PM	0	32	5	0	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	2	6	1	0	1	0	0	0	0	0	0	0	0	**10**
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**18**	**1,404**	**226**	**0**	**63**	**12**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1,729**
Percent	**1.0%**	**81.2%**	**13.1%**	**0.0%**	**3.6%**	**0.7%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Francisco Blvd W, B/W 2nd & Andersen

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 17

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	3	3	23	116	393	459	267	119	46	19	4	2	0	2	1	1	0	1,458
Percent	0.2%	0.2%	1.6%	8.0%	27.0%	31.5%	18.3%	8.2%	3.2%	1.3%	0.3%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	100%
Southbound	9	5	27	218	393	413	381	202	62	10	5	2	2	0	0	0	0	1,729
Percent	0.5%	0.3%	1.6%	12.6%	22.7%	23.9%	22.0%	11.7%	3.6%	0.6%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	12	8	50	334	786	872	648	321	108	29	9	4	2	2	1	1	0	3,187
Percent	0.4%	0.3%	1.6%	10.5%	24.7%	27.4%	20.3%	10.1%	3.4%	0.9%	0.3%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	32.0	mph	Mean (Average) Speed	32.8	mph
85th Percentile	39.6	mph	10 mph Pace	26.2 - 36.2	mph
95th Percentile	45.2	mph	Percent in Pace	59.7	%
Southbound			**Southbound**		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.8	mph
85th Percentile	40.5	mph	10 mph Pace	29.0 - 39.0	mph
95th Percentile	44.5	mph	Percent in Pace	46.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	4	2	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	0	0	0	1	2	3	2	1	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	0	0	0	4	6	9	10	2	2	2	0	0	0	0	0	0	**35**
7:00 AM	0	0	0	1	8	14	8	4	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	0	1	0	3	8	19	13	13	3	1	1	0	0	0	0	0	0	**62**
9:00 AM	1	0	0	4	18	29	30	11	3	3	0	1	0	0	0	0	0	**100**
10:00 AM	0	0	6	8	44	39	17	13	1	1	0	0	0	0	0	0	0	**129**
11:00 AM	2	1	1	20	47	43	21	4	1	1	0	0	0	0	0	0	0	**141**
12:00 PM	0	1	3	16	47	52	24	10	4	1	0	0	0	0	0	0	0	**158**
1:00 PM	0	0	2	17	48	43	33	11	1	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	0	2	10	35	47	26	8	4	2	0	0	0	0	0	0	0	**134**
3:00 PM	0	0	2	6	45	48	25	8	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	0	3	15	21	22	16	9	3	2	1	0	0	0	0	0	0	**92**
5:00 PM	0	0	1	5	11	29	28	6	11	0	0	1	0	0	0	0	0	**92**
6:00 PM	0	0	0	2	17	16	8	4	1	1	0	0	0	0	0	0	0	**49**
7:00 PM	0	0	2	5	22	16	2	3	0	1	0	0	0	0	0	0	0	**51**
8:00 PM	0	0	1	2	16	18	1	1	2	0	0	0	0	0	0	0	0	**41**
9:00 PM	0	0	0	1	0	3	1	0	0	1	0	0	0	1	1	0	0	**8**
10:00 PM	0	0	0	1	0	4	0	1	0	0	0	0	0	1	0	1	0	**8**
11:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	**2**
Total	**3**	**3**	**23**	**116**	**393**	**459**	**267**	**119**	**46**	**19**	**4**	**2**	**0**	**2**	**1**	**1**	**0**	**1,458**
Percent	**0.2%**	**0.2%**	**1.6%**	**8.0%**	**27.0%**	**31.5%**	**18.3%**	**8.2%**	**3.2%**	**1.3%**	**0.3%**	**0.1%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.0	mph	Mean (Average) Speed	32.8	mph
85th Percentile	39.6	mph	10 mph Pace	26.2 - 36.2	mph
95th Percentile	45.2	mph	Percent in Pace	59.7	%

Project Manager: (415) 310-6469
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Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	1	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	0	0	3	2	0	1	0	0	1	0	0	0	0	0	0	**7**
6:00 AM	0	0	1	2	1	2	0	2	1	0	0	0	0	0	0	0	0	**9**
7:00 AM	0	1	1	0	3	4	3	1	1	1	0	0	0	0	0	0	0	**15**
8:00 AM	0	0	0	3	3	8	15	6	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	0	0	6	14	19	17	11	4	2	1	0	0	0	0	0	0	**75**
10:00 AM	0	0	2	14	35	32	27	9	4	1	1	0	0	0	0	0	0	**125**
11:00 AM	8	2	7	23	43	46	26	8	3	0	0	1	0	0	0	0	0	**167**
12:00 PM	0	0	1	15	46	40	38	24	6	0	0	0	0	0	0	0	0	**170**
1:00 PM	0	0	2	17	38	56	45	23	4	0	0	0	0	0	0	0	0	**185**
2:00 PM	0	0	0	20	40	44	51	20	6	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	0	2	25	34	40	42	23	9	0	1	0	1	0	0	0	0	**177**
4:00 PM	0	2	0	19	25	31	33	26	8	1	0	0	0	0	0	0	0	**145**
5:00 PM	0	0	1	20	23	25	34	22	8	1	0	0	0	0	0	0	0	**134**
6:00 PM	0	0	3	19	28	20	21	15	2	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	0	1	15	21	17	9	8	3	1	0	0	1	0	0	0	0	**76**
8:00 PM	0	0	1	8	22	15	9	1	0	0	0	0	0	0	0	0	0	**56**
9:00 PM	0	0	3	10	13	5	5	0	0	1	0	0	0	0	0	0	0	**37**
10:00 PM	0	0	0	2	0	1	3	1	1	0	1	1	0	0	0	0	0	**10**
11:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**9**	**5**	**27**	**218**	**393**	**413**	**381**	**202**	**62**	**10**	**5**	**2**	**2**	**0**	**0**	**0**	**0**	**1,729**
Percent	**0.5%**	**0.3%**	**1.6%**	**12.6%**	**22.7%**	**23.9%**	**22.0%**	**11.7%**	**3.6%**	**0.6%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.8	mph
85th Percentile	40.5	mph	10 mph Pace	29.0 - 39.0	mph
95th Percentile	44.5	mph	Percent in Pace	46.79	%

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Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

idax DATA SOLUTIONS

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	4	2	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	0	0	0	1	2	3	2	1	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	0	0	0	4	6	9	10	2	2	2	0	0	0	0	0	0	**35**
7:00 AM	0	0	0	1	8	14	8	4	4	1	0	0	0	0	0	0	0	**40**
8:00 AM	0	1	0	3	8	19	13	13	3	1	1	0	0	0	0	0	0	**62**
9:00 AM	1	0	0	4	18	29	30	11	3	3	0	1	0	0	0	0	0	**100**
10:00 AM	0	0	6	8	44	39	17	13	1	1	0	0	0	0	0	0	0	**129**
11:00 AM	2	1	1	20	47	43	21	4	1	1	0	0	0	0	0	0	0	**141**
12:00 PM	0	1	3	16	47	52	24	10	4	1	0	0	0	0	0	0	0	**158**
1:00 PM	0	0	2	17	48	43	33	11	1	0	0	0	0	0	0	0	0	**155**
2:00 PM	0	0	2	10	35	47	26	8	4	2	0	0	0	0	0	0	0	**134**
3:00 PM	0	0	2	6	45	48	25	8	5	1	0	0	0	0	0	0	0	**140**
4:00 PM	0	0	3	15	21	22	16	9	3	2	1	0	0	0	0	0	0	**92**
5:00 PM	0	0	1	5	11	29	28	6	11	0	0	1	0	0	0	0	0	**92**
6:00 PM	0	0	0	2	17	16	8	4	1	1	0	0	0	0	0	0	0	**49**
7:00 PM	0	0	2	5	22	16	2	3	0	1	0	0	0	0	0	0	0	**51**
8:00 PM	0	0	1	2	16	18	1	1	2	0	0	0	0	0	0	0	0	**41**
9:00 PM	0	0	0	1	0	3	1	0	0	1	0	0	0	1	1	0	0	**8**
10:00 PM	0	0	0	1	0	4	0	1	0	0	0	0	0	1	0	1	0	**8**
11:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	**2**
Total	**3**	**3**	**23**	**116**	**393**	**459**	**267**	**119**	**46**	**19**	**4**	**2**	**0**	**2**	**1**	**1**	**0**	**1,458**
Percent	**0.2%**	**0.2%**	**1.6%**	**8.0%**	**27.0%**	**31.5%**	**18.3%**	**8.2%**	**3.2%**	**1.3%**	**0.3%**	**0.1%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.0	mph	Mean (Average) Speed	32.8	mph
85th Percentile	39.6	mph	10 mph Pace	26.2 - 36.2	mph
95th Percentile	45.2	mph	Percent in Pace	59.7	%

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 to 4/25/2019
Site Code: 17

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	2	0	1	2	0	1	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	0	0	3	2	0	1	0	0	1	0	0	0	0	0	0	**7**
6:00 AM	0	0	1	2	1	2	0	2	1	0	0	0	0	0	0	0	0	**9**
7:00 AM	0	1	1	0	3	4	3	1	1	1	0	0	0	0	0	0	0	**15**
8:00 AM	0	0	0	3	3	8	15	6	2	1	0	0	0	0	0	0	0	**38**
9:00 AM	1	0	0	6	14	19	17	11	4	2	1	0	0	0	0	0	0	**75**
10:00 AM	0	0	2	14	35	32	27	9	4	1	1	0	0	0	0	0	0	**125**
11:00 AM	8	2	7	23	43	46	26	8	3	0	0	1	0	0	0	0	0	**167**
12:00 PM	0	0	1	15	46	40	38	24	6	0	0	0	0	0	0	0	0	**170**
1:00 PM	0	0	2	17	38	56	45	23	4	0	0	0	0	0	0	0	0	**185**
2:00 PM	0	0	0	20	40	44	51	20	6	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	0	2	25	34	40	42	23	9	0	1	0	1	0	0	0	0	**177**
4:00 PM	0	2	0	19	25	31	33	26	8	1	0	0	0	0	0	0	0	**145**
5:00 PM	0	0	1	20	23	25	34	22	8	1	0	0	0	0	0	0	0	**134**
6:00 PM	0	0	3	19	28	20	21	15	2	1	0	0	0	0	0	0	0	**109**
7:00 PM	0	0	1	15	21	17	9	8	3	1	0	0	1	0	0	0	0	**76**
8:00 PM	0	0	1	8	22	15	9	1	0	0	0	0	0	0	0	0	0	**56**
9:00 PM	0	0	3	10	13	5	5	0	0	1	0	0	0	0	0	0	0	**37**
10:00 PM	0	0	0	2	0	1	3	1	1	0	1	1	0	0	0	0	0	**10**
11:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
Total	**9**	**5**	**27**	**218**	**393**	**413**	**381**	**202**	**62**	**10**	**5**	**2**	**2**	**0**	**0**	**0**	**0**	**1,729**
Percent	**0.5%**	**0.3%**	**1.6%**	**12.6%**	**22.7%**	**23.9%**	**22.0%**	**11.7%**	**3.6%**	**0.6%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.8	mph
85th Percentile	40.5	mph	10 mph Pace	29.0 - 39.0	mph
95th Percentile	44.5	mph	Percent in Pace	46.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Francisco Blvd W, B/W 2nd & Andersen
Date Range: 4/25/2019 - 5/1/2019
Site Code: 17

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
1:00 AM	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	4
2:00 AM	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
3:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
4:00 AM	7	6	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	6	13
5:00 AM	10	7	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	7	17
6:00 AM	35	9	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	9	44
7:00 AM	40	15	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	15	55
8:00 AM	62	38	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	38	100
9:00 AM	100	75	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	75	175
10:00 AM	129	125	254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	125	254
11:00 AM	**141**	**167**	**308**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**141**	**167**	**308**
12:00 PM	**158**	170	328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**158**	170	328
1:00 PM	155	**185**	**340**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155	**185**	**340**
2:00 PM	134	181	315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	181	315
3:00 PM	140	177	317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	177	317
4:00 PM	92	145	237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	145	237
5:00 PM	92	134	226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	134	226
6:00 PM	49	109	158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	109	158
7:00 PM	51	76	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	76	127
8:00 PM	41	56	97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	56	97
9:00 PM	8	37	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	37	45
10:00 PM	8	10	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	18
11:00 PM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
Total	1,458	1,729	3,187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,458	1,729	3,187
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	11:00	11:00
Vol.	141	167	308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	141	167	308
PM Peak	12:00	13:00	13:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12:00	13:00	13:00
Vol.	158	185	340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	185	340

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 18

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	39	5,528	666	6	211	12	0	0	3	1	0	0	1	6,467
Percent	0.6%	85.5%	10.3%	0.1%	3.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	29	5,604	813	7	199	8	0	2	4	3	0	0	0	6,669
Percent	0.4%	84.0%	12.2%	0.1%	3.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	68	11,132	1,479	13	410	20	0	2	7	4	0	0	1	13,136
Percent	0.5%	84.7%	11.3%	0.1%	3.1%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	63	7	0	2	0	0	0	0	0	0	0	0	**72**
6:00 AM	1	189	30	1	11	1	0	0	0	0	0	0	0	**233**
7:00 AM	9	395	50	1	18	0	0	0	1	0	0	0	0	**474**
8:00 AM	9	534	61	0	19	1	0	0	0	0	0	0	0	**624**
9:00 AM	2	426	48	0	20	0	0	0	1	0	0	0	0	**497**
10:00 AM	5	357	50	0	12	1	0	0	1	0	0	0	1	**427**
11:00 AM	2	311	40	0	17	1	0	0	0	0	0	0	0	**371**
12:00 PM	1	337	42	0	22	2	0	0	0	0	0	0	0	**404**
1:00 PM	1	330	43	0	16	0	0	0	0	0	0	0	0	**390**
2:00 PM	3	331	53	0	17	3	0	0	0	1	0	0	0	**408**
3:00 PM	0	435	61	0	14	1	0	0	0	0	0	0	0	**511**
4:00 PM	0	448	38	0	12	0	0	0	0	0	0	0	0	**498**
5:00 PM	2	367	46	1	8	2	0	0	0	0	0	0	0	**426**
6:00 PM	1	310	33	3	8	0	0	0	0	0	0	0	0	**355**
7:00 PM	2	272	24	0	3	0	0	0	0	0	0	0	0	**301**
8:00 PM	0	178	10	0	4	0	0	0	0	0	0	0	0	**192**
9:00 PM	0	124	17	0	3	0	0	0	0	0	0	0	0	**144**
10:00 PM	0	47	2	0	2	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
Total	**39**	**5,528**	**666**	**6**	**211**	**12**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**6,467**
Percent	**0.6%**	**85.5%**	**10.3%**	**0.1%**	**3.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	21	0	0	6	2	0	0	0	0	0	0	0	**29**
6:00 AM	1	97	21	2	10	0	0	0	0	0	0	0	0	**131**
7:00 AM	2	200	40	2	16	0	0	0	0	0	0	0	0	**260**
8:00 AM	1	428	69	0	18	0	0	0	2	0	0	0	0	**518**
9:00 AM	0	252	42	0	12	0	0	1	0	0	0	0	0	**307**
10:00 AM	4	314	53	0	14	1	0	0	1	0	0	0	0	**387**
11:00 AM	1	303	50	0	13	0	0	0	0	0	0	0	0	**367**
12:00 PM	1	370	69	0	23	0	0	0	0	0	0	0	0	**463**
1:00 PM	1	366	60	0	14	0	0	0	0	0	0	0	0	**441**
2:00 PM	2	351	46	0	10	1	0	0	0	0	0	0	0	**410**
3:00 PM	2	472	100	0	14	1	0	1	0	1	0	0	0	**591**
4:00 PM	2	467	73	0	12	2	0	0	0	0	0	0	0	**556**
5:00 PM	4	502	50	1	13	0	0	0	1	1	0	0	0	**572**
6:00 PM	5	481	58	2	6	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	321	26	0	7	0	0	0	0	0	0	0	0	**354**
8:00 PM	3	238	26	0	5	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	202	15	0	1	0	0	0	0	1	0	0	0	**219**
10:00 PM	0	118	9	0	3	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	48	4	0	0	0	0	0	0	0	0	0	0	**52**
Total	**29**	**5,604**	**813**	**7**	**199**	**8**	**0**	**2**	**4**	**3**	**0**	**0**	**0**	**6,669**
Percent	**0.4%**	**84.0%**	**12.2%**	**0.1%**	**3.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	63	7	0	2	0	0	0	0	0	0	0	0	**72**
6:00 AM	1	189	30	1	11	1	0	0	0	0	0	0	0	**233**
7:00 AM	9	395	50	1	18	0	0	0	1	0	0	0	0	**474**
8:00 AM	9	534	61	0	19	1	0	0	0	0	0	0	0	**624**
9:00 AM	2	426	48	0	20	0	0	0	1	0	0	0	0	**497**
10:00 AM	5	357	50	0	12	1	0	0	1	0	0	0	1	**427**
11:00 AM	2	311	40	0	17	1	0	0	0	0	0	0	0	**371**
12:00 PM	1	337	42	0	22	2	0	0	0	0	0	0	0	**404**
1:00 PM	1	330	43	0	16	0	0	0	0	0	0	0	0	**390**
2:00 PM	3	331	53	0	17	3	0	0	0	1	0	0	0	**408**
3:00 PM	0	435	61	0	14	1	0	0	0	0	0	0	0	**511**
4:00 PM	0	448	38	0	12	0	0	0	0	0	0	0	0	**498**
5:00 PM	2	367	46	1	8	2	0	0	0	0	0	0	0	**426**
6:00 PM	1	310	33	3	8	0	0	0	0	0	0	0	0	**355**
7:00 PM	2	272	24	0	3	0	0	0	0	0	0	0	0	**301**
8:00 PM	0	178	10	0	4	0	0	0	0	0	0	0	0	**192**
9:00 PM	0	124	17	0	3	0	0	0	0	0	0	0	0	**144**
10:00 PM	0	47	2	0	2	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
Total	**39**	**5,528**	**666**	**6**	**211**	**12**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**6,467**
Percent	**0.6%**	**85.5%**	**10.3%**	**0.1%**	**3.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	21	0	0	6	2	0	0	0	0	0	0	0	**29**
6:00 AM	1	97	21	2	10	0	0	0	0	0	0	0	0	**131**
7:00 AM	2	200	40	2	16	0	0	0	0	0	0	0	0	**260**
8:00 AM	1	428	69	0	18	0	0	0	2	0	0	0	0	**518**
9:00 AM	0	252	42	0	12	0	0	1	0	0	0	0	0	**307**
10:00 AM	4	314	53	0	14	1	0	0	1	0	0	0	0	**387**
11:00 AM	1	303	50	0	13	0	0	0	0	0	0	0	0	**367**
12:00 PM	1	370	69	0	23	0	0	0	0	0	0	0	0	**463**
1:00 PM	1	366	60	0	14	0	0	0	0	0	0	0	0	**441**
2:00 PM	2	351	46	0	10	1	0	0	0	0	0	0	0	**410**
3:00 PM	2	472	100	0	14	1	0	1	0	1	0	0	0	**591**
4:00 PM	2	467	73	0	12	2	0	0	0	0	0	0	0	**556**
5:00 PM	4	502	50	1	13	0	0	0	1	1	0	0	0	**572**
6:00 PM	5	481	58	2	6	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	321	26	0	7	0	0	0	0	0	0	0	0	**354**
8:00 PM	3	238	26	0	5	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	202	15	0	1	0	0	0	0	1	0	0	0	**219**
10:00 PM	0	118	9	0	3	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	48	4	0	0	0	0	0	0	0	0	0	0	**52**
Total	**29**	**5,604**	**813**	**7**	**199**	**8**	**0**	**2**	**4**	**3**	**0**	**0**	**0**	**6,669**
Percent	**0.4%**	**84.0%**	**12.2%**	**0.1%**	**3.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	63	7	0	2	0	0	0	0	0	0	0	0	**72**
6:00 AM	1	189	30	1	11	1	0	0	0	0	0	0	0	**233**
7:00 AM	9	395	50	1	18	0	0	0	1	0	0	0	0	**474**
8:00 AM	9	534	61	0	19	1	0	0	0	0	0	0	0	**624**
9:00 AM	2	426	48	0	20	0	0	0	1	0	0	0	0	**497**
10:00 AM	5	357	50	0	12	1	0	0	1	0	0	0	1	**427**
11:00 AM	2	311	40	0	17	1	0	0	0	0	0	0	0	**371**
12:00 PM	1	337	42	0	22	2	0	0	0	0	0	0	0	**404**
1:00 PM	1	330	43	0	16	0	0	0	0	0	0	0	0	**390**
2:00 PM	3	331	53	0	17	3	0	0	0	1	0	0	0	**408**
3:00 PM	0	435	61	0	14	1	0	0	0	0	0	0	0	**511**
4:00 PM	0	448	38	0	12	0	0	0	0	0	0	0	0	**498**
5:00 PM	2	367	46	1	8	2	0	0	0	0	0	0	0	**426**
6:00 PM	1	310	33	3	8	0	0	0	0	0	0	0	0	**355**
7:00 PM	2	272	24	0	3	0	0	0	0	0	0	0	0	**301**
8:00 PM	0	178	10	0	4	0	0	0	0	0	0	0	0	**192**
9:00 PM	0	124	17	0	3	0	0	0	0	0	0	0	0	**144**
10:00 PM	0	47	2	0	2	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
Total	**39**	**5,528**	**666**	**6**	**211**	**12**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**6,467**
Percent	**0.6%**	**85.5%**	**10.3%**	**0.1%**	**3.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	21	0	0	6	2	0	0	0	0	0	0	0	**29**
6:00 AM	1	97	21	2	10	0	0	0	0	0	0	0	0	**131**
7:00 AM	2	200	40	2	16	0	0	0	0	0	0	0	0	**260**
8:00 AM	1	428	69	0	18	0	0	0	2	0	0	0	0	**518**
9:00 AM	0	252	42	0	12	0	0	1	0	0	0	0	0	**307**
10:00 AM	4	314	53	0	14	1	0	0	1	0	0	0	0	**387**
11:00 AM	1	303	50	0	13	0	0	0	0	0	0	0	0	**367**
12:00 PM	1	370	69	0	23	0	0	0	0	0	0	0	0	**463**
1:00 PM	1	366	60	0	14	0	0	0	0	0	0	0	0	**441**
2:00 PM	2	351	46	0	10	1	0	0	0	0	0	0	0	**410**
3:00 PM	2	472	100	0	14	1	0	1	0	1	0	0	0	**591**
4:00 PM	2	467	73	0	12	2	0	0	0	0	0	0	0	**556**
5:00 PM	4	502	50	1	13	0	0	0	1	1	0	0	0	**572**
6:00 PM	5	481	58	2	6	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	321	26	0	7	0	0	0	0	0	0	0	0	**354**
8:00 PM	3	238	26	0	5	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	202	15	0	1	0	0	0	0	1	0	0	0	**219**
10:00 PM	0	118	9	0	3	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	48	4	0	0	0	0	0	0	0	0	0	0	**52**
Total	**29**	**5,604**	**813**	**7**	**199**	**8**	**0**	**2**	**4**	**3**	**0**	**0**	**0**	**6,669**
Percent	**0.4%**	**84.0%**	**12.2%**	**0.1%**	**3.0%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 18

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	0	3	13	16	227	1,693	3,139	1,207	136	24	7	2	0	0	0	0	0	6,467
Percent	0.0%	0.0%	0.2%	0.2%	3.5%	26.2%	48.5%	18.7%	2.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	8	19	61	290	1,413	2,818	1,659	353	41	7	0	0	0	0	0	0	0	6,669
Percent	0.1%	0.3%	0.9%	4.3%	21.2%	42.3%	24.9%	5.3%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	8	22	74	306	1,640	4,511	4,798	1,560	177	31	7	2	0	0	0	0	0	13,136
Percent	0.1%	0.2%	0.6%	2.3%	12.5%	34.3%	36.5%	11.9%	1.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	37.0	mph
85th Percentile	40.9	mph	10 mph Pace	32.0 - 42.0	mph
95th Percentile	43.6	mph	Percent in Pace	80.2	%
Westbound			**Westbound**		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.7	mph
85th Percentile	37.5	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	40.5	mph	Percent in Pace	72.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	3	1	4	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	0	1	3	1	0	1	2	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	0	0	1	5	25	5	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	0	0	0	1	9	41	18	1	2	0	0	0	0	0	0	0	**72**
6:00 AM	0	0	0	0	12	61	103	52	4	1	0	0	0	0	0	0	0	**233**
7:00 AM	0	0	4	3	10	78	240	118	19	2	0	0	0	0	0	0	0	**474**
8:00 AM	0	1	5	1	20	147	315	117	18	0	0	0	0	0	0	0	0	**624**
9:00 AM	0	0	0	1	17	165	243	65	6	0	0	0	0	0	0	0	0	**497**
10:00 AM	0	1	3	2	12	124	197	79	9	0	0	0	0	0	0	0	0	**427**
11:00 AM	0	0	0	1	15	104	186	57	5	1	1	1	0	0	0	0	0	**371**
12:00 PM	0	0	0	0	12	100	206	77	7	0	1	1	0	0	0	0	0	**404**
1:00 PM	0	0	0	0	11	115	176	76	11	1	0	0	0	0	0	0	0	**390**
2:00 PM	0	1	0	1	19	121	180	72	11	1	2	0	0	0	0	0	0	**408**
3:00 PM	0	0	0	0	17	116	273	95	7	3	0	0	0	0	0	0	0	**511**
4:00 PM	0	0	0	0	10	116	245	114	10	3	0	0	0	0	0	0	0	**498**
5:00 PM	0	0	0	3	10	102	213	84	12	2	0	0	0	0	0	0	0	**426**
6:00 PM	0	0	0	2	16	94	173	63	5	1	1	0	0	0	0	0	0	**355**
7:00 PM	0	0	1	0	22	97	140	37	3	1	0	0	0	0	0	0	0	**301**
8:00 PM	0	0	0	0	9	67	80	30	4	2	0	0	0	0	0	0	0	**192**
9:00 PM	0	0	0	1	9	54	58	19	1	2	0	0	0	0	0	0	0	**144**
10:00 PM	0	0	0	1	3	10	23	13	1	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	0	0	0	0	4	12	9	1	1	0	0	0	0	0	0	0	**27**
Total	**0**	**3**	**13**	**16**	**227**	**1,693**	**3,139**	**1,207**	**136**	**24**	**7**	**2**	**0**	**0**	**0**	**0**	**0**	**6,467**
Percent	**0.0%**	**0.0%**	**0.2%**	**0.2%**	**3.5%**	**26.2%**	**48.5%**	**18.7%**	**2.1%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	37.0	mph
85th Percentile	40.9	mph	10 mph Pace	32.0 - 42.0	mph
95th Percentile	43.6	mph	Percent in Pace	80.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	15	5	2	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	0	0	0	2	2	5	1	1	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	1	4	4	1	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	0	0	1	4	8	12	3	0	1	0	0	0	0	0	0	0	**29**
6:00 AM	0	0	0	2	23	50	35	16	3	2	0	0	0	0	0	0	0	**131**
7:00 AM	0	0	1	8	51	119	68	11	2	0	0	0	0	0	0	0	0	**260**
8:00 AM	8	17	31	70	174	151	58	7	2	0	0	0	0	0	0	0	0	**518**
9:00 AM	0	0	1	4	57	139	89	16	0	1	0	0	0	0	0	0	0	**307**
10:00 AM	0	0	2	12	82	180	87	20	4	0	0	0	0	0	0	0	0	**387**
11:00 AM	0	0	1	9	52	158	122	25	0	0	0	0	0	0	0	0	0	**367**
12:00 PM	0	0	2	21	82	199	130	28	0	1	0	0	0	0	0	0	0	**463**
1:00 PM	0	0	0	10	69	193	140	24	5	0	0	0	0	0	0	0	0	**441**
2:00 PM	0	0	2	14	72	169	123	27	3	0	0	0	0	0	0	0	0	**410**
3:00 PM	0	1	11	33	150	242	129	20	5	0	0	0	0	0	0	0	0	**591**
4:00 PM	0	0	2	37	135	234	125	21	2	0	0	0	0	0	0	0	0	**556**
5:00 PM	0	1	2	18	112	275	138	22	4	0	0	0	0	0	0	0	0	**572**
6:00 PM	0	0	6	22	110	220	144	48	2	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	0	0	10	89	160	73	18	3	1	0	0	0	0	0	0	0	**354**
8:00 PM	0	0	0	9	73	122	51	15	2	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	0	0	7	46	97	55	13	1	0	0	0	0	0	0	0	0	**219**
10:00 PM	0	0	0	3	19	58	40	9	1	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	0	0	0	6	17	23	6	0	0	0	0	0	0	0	0	0	**52**
Total	**8**	**19**	**61**	**290**	**1,413**	**2,818**	**1,659**	**353**	**41**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,669**
Percent	**0.1%**	**0.3%**	**0.9%**	**4.3%**	**21.2%**	**42.3%**	**24.9%**	**5.3%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.7	mph
85th Percentile	37.5	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	40.5	mph	Percent in Pace	72.09	%

Project Manager: (415) 310-6469
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Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	3	1	4	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	0	1	3	1	0	1	2	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	0	0	1	5	25	5	1	0	0	0	0	0	0	0	0	**37**
5:00 AM	0	0	0	0	1	9	41	18	1	2	0	0	0	0	0	0	0	**72**
6:00 AM	0	0	0	0	12	61	103	52	4	1	0	0	0	0	0	0	0	**233**
7:00 AM	0	0	4	3	10	78	240	118	19	2	0	0	0	0	0	0	0	**474**
8:00 AM	0	1	5	1	20	147	315	117	18	0	0	0	0	0	0	0	0	**624**
9:00 AM	0	0	0	1	17	165	243	65	6	0	0	0	0	0	0	0	0	**497**
10:00 AM	0	1	3	2	12	124	197	79	9	0	0	0	0	0	0	0	0	**427**
11:00 AM	0	0	0	1	15	104	186	57	5	1	1	1	0	0	0	0	0	**371**
12:00 PM	0	0	0	0	12	100	206	77	7	0	1	1	0	0	0	0	0	**404**
1:00 PM	0	0	0	0	11	115	176	76	11	1	0	0	0	0	0	0	0	**390**
2:00 PM	0	1	0	1	19	121	180	72	11	1	2	0	0	0	0	0	0	**408**
3:00 PM	0	0	0	0	17	116	273	95	7	3	0	0	0	0	0	0	0	**511**
4:00 PM	0	0	0	0	10	116	245	114	10	3	0	0	0	0	0	0	0	**498**
5:00 PM	0	0	0	3	10	102	213	84	12	2	0	0	0	0	0	0	0	**426**
6:00 PM	0	0	0	2	16	94	173	63	5	1	1	0	0	0	0	0	0	**355**
7:00 PM	0	0	1	0	22	97	140	37	3	1	0	0	0	0	0	0	0	**301**
8:00 PM	0	0	0	0	9	67	80	30	4	2	0	0	0	0	0	0	0	**192**
9:00 PM	0	0	0	1	9	54	58	19	1	2	0	0	0	0	0	0	0	**144**
10:00 PM	0	0	0	1	3	10	23	13	1	0	0	0	0	0	0	0	0	**51**
11:00 PM	0	0	0	0	0	4	12	9	1	1	0	0	0	0	0	0	0	**27**
Total	**0**	**3**	**13**	**16**	**227**	**1,693**	**3,139**	**1,207**	**136**	**24**	**7**	**2**	**0**	**0**	**0**	**0**	**0**	**6,467**
Percent	**0.0%**	**0.0%**	**0.2%**	**0.2%**	**3.5%**	**26.2%**	**48.5%**	**18.7%**	**2.1%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	37.0	mph
85th Percentile	40.9	mph	10 mph Pace	32.0 - 42.0	mph
95th Percentile	43.6	mph	Percent in Pace	80.2	%

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Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 18

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	15	5	2	0	0	0	0	0	0	0	0	0	**26**
1:00 AM	0	0	0	0	2	2	5	1	1	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	1	4	4	1	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	0	0	1	4	8	12	3	0	1	0	0	0	0	0	0	0	**29**
6:00 AM	0	0	0	2	23	50	35	16	3	2	0	0	0	0	0	0	0	**131**
7:00 AM	0	0	1	8	51	119	68	11	2	0	0	0	0	0	0	0	0	**260**
8:00 AM	8	17	31	70	174	151	58	7	2	0	0	0	0	0	0	0	0	**518**
9:00 AM	0	0	1	4	57	139	89	16	0	1	0	0	0	0	0	0	0	**307**
10:00 AM	0	0	2	12	82	180	87	20	4	0	0	0	0	0	0	0	0	**387**
11:00 AM	0	0	1	9	52	158	122	25	0	0	0	0	0	0	0	0	0	**367**
12:00 PM	0	0	2	21	82	199	130	28	0	1	0	0	0	0	0	0	0	**463**
1:00 PM	0	0	0	10	69	193	140	24	5	0	0	0	0	0	0	0	0	**441**
2:00 PM	0	0	2	14	72	169	123	27	3	0	0	0	0	0	0	0	0	**410**
3:00 PM	0	1	11	33	150	242	129	20	5	0	0	0	0	0	0	0	0	**591**
4:00 PM	0	0	2	37	135	234	125	21	2	0	0	0	0	0	0	0	0	**556**
5:00 PM	0	1	2	18	112	275	138	22	4	0	0	0	0	0	0	0	0	**572**
6:00 PM	0	0	6	22	110	220	144	48	2	1	0	0	0	0	0	0	0	**553**
7:00 PM	0	0	0	10	89	160	73	18	3	1	0	0	0	0	0	0	0	**354**
8:00 PM	0	0	0	9	73	122	51	15	2	0	0	0	0	0	0	0	0	**272**
9:00 PM	0	0	0	7	46	97	55	13	1	0	0	0	0	0	0	0	0	**219**
10:00 PM	0	0	0	3	19	58	40	9	1	0	0	0	0	0	0	0	0	**130**
11:00 PM	0	0	0	0	6	17	23	6	0	0	0	0	0	0	0	0	0	**52**
Total	**8**	**19**	**61**	**290**	**1,413**	**2,818**	**1,659**	**353**	**41**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,669**
Percent	**0.1%**	**0.3%**	**0.9%**	**4.3%**	**21.2%**	**42.3%**	**24.9%**	**5.3%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.8	mph	Mean (Average) Speed	32.7	mph
85th Percentile	37.5	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	40.5	mph	Percent in Pace	72.1	%

Location: Manuel T Freitas Pkwy, B/W Montecillo & Las Gallinas
Date Range: 4/25/2019 - 5/1/2019
Site Code: 18

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	9	26	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	26	35
1:00 AM	8	11	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	11	19
2:00 AM	3	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	9
3:00 AM	5	4	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4	9
4:00 AM	37	10	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	10	47
5:00 AM	72	29	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	29	101
6:00 AM	233	131	364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	131	364
7:00 AM	474	260	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474	260	734
8:00 AM	**624**	**518**	**1,142**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**624**	**518**	**1,142**
9:00 AM	497	307	804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	497	307	804
10:00 AM	427	387	814	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	427	387	814
11:00 AM	371	367	738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	371	367	738
12:00 PM	404	463	867	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	463	867
1:00 PM	390	441	831	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	441	831
2:00 PM	408	410	818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	408	410	818
3:00 PM	**511**	**591**	**1,102**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**511**	**591**	**1,102**
4:00 PM	498	556	1,054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	498	556	1,054
5:00 PM	426	572	998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	426	572	998
6:00 PM	355	553	908	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	553	908
7:00 PM	301	354	655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301	354	655
8:00 PM	192	272	464	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	272	464
9:00 PM	144	219	363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144	219	363
10:00 PM	51	130	181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	130	181
11:00 PM	27	52	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	52	79
Total	6,467	6,669	13,136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,467	6,669	13,136
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	624	518	1,142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	624	518	1,142
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	511	591	1,102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	511	591	1,102

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 19

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	49	10,329	1,530	2	439	76	0	5	9	12	1	0	2	12,454
Percent	0.4%	82.9%	12.3%	0.0%	3.5%	0.6%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	100%
Westbound	42	9,001	1,915	3	481	31	0	8	13	15	0	0	10	11,519
Percent	0.4%	78.1%	16.6%	0.0%	4.2%	0.3%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	100%
Total	91	19,330	3,445	5	920	107	0	13	22	27	1	0	12	23,973
Percent	0.4%	80.6%	14.4%	0.0%	3.8%	0.4%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	33	5	0	0	0	0	0	1	0	0	0	0	**41**
1:00 AM	1	31	3	0	1	0	0	0	0	0	0	0	0	**36**
2:00 AM	0	9	2	0	2	0	0	0	0	0	0	0	0	**13**
3:00 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	55	12	0	5	0	0	0	0	0	0	0	0	**72**
5:00 AM	0	119	26	0	5	1	0	0	0	0	0	0	0	**151**
6:00 AM	2	317	57	0	27	2	0	1	1	1	0	0	0	**408**
7:00 AM	5	620	107	0	35	4	0	1	0	0	0	0	0	**772**
8:00 AM	3	767	120	0	36	6	0	0	1	1	0	0	1	**935**
9:00 AM	4	706	119	0	27	1	0	0	0	1	0	0	1	**859**
10:00 AM	2	604	143	0	24	8	0	0	2	2	0	0	0	**785**
11:00 AM	1	579	104	0	35	8	0	1	0	0	0	0	0	**728**
12:00 PM	2	669	91	0	35	5	0	0	0	1	0	0	0	**803**
1:00 PM	3	611	108	0	28	5	0	0	1	0	0	0	0	**756**
2:00 PM	5	714	95	0	38	8	0	1	0	4	1	0	0	**866**
3:00 PM	5	797	124	0	39	8	0	0	0	0	0	0	0	**973**
4:00 PM	2	872	100	0	20	10	0	0	1	0	0	0	0	**1,005**
5:00 PM	7	749	72	0	16	6	0	1	0	0	0	0	0	**851**
6:00 PM	0	625	84	2	22	1	0	0	0	1	0	0	0	**735**
7:00 PM	2	544	66	0	16	1	0	0	0	1	0	0	0	**630**
8:00 PM	0	390	38	0	7	0	0	0	0	0	0	0	0	**435**
9:00 PM	3	294	33	0	13	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	120	11	0	5	1	0	0	0	0	0	0	0	**137**
11:00 PM	0	93	9	0	2	0	0	0	2	0	0	0	0	**106**
Total	**49**	**10,329**	**1,530**	**2**	**439**	**76**	**0**	**5**	**9**	**12**	**1**	**0**	**2**	**12,454**
Percent	**0.4%**	**82.9%**	**12.3%**	**0.0%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

DATA SOLUTIONS

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	47	2	0	1	0	0	0	0	0	0	0	0	**50**
1:00 AM	0	16	8	0	1	0	0	0	0	0	0	0	0	**25**
2:00 AM	0	15	1	0	0	0	0	0	1	0	0	0	0	**17**
3:00 AM	0	9	1	0	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	31	2	0	2	0	0	0	1	0	0	0	0	**36**
5:00 AM	0	80	16	1	16	1	0	0	0	0	0	0	0	**114**
6:00 AM	5	246	48	1	17	2	0	0	1	0	0	0	0	**320**
7:00 AM	4	456	87	0	29	2	0	0	0	1	0	0	2	**581**
8:00 AM	2	656	168	0	47	4	0	0	3	0	0	0	1	**881**
9:00 AM	0	480	112	1	38	1	0	1	1	0	0	0	0	**634**
10:00 AM	1	518	144	0	28	2	0	1	0	2	0	0	0	**696**
11:00 AM	2	469	115	0	30	2	0	0	1	0	0	0	1	**620**
12:00 PM	2	521	130	0	41	3	0	1	0	1	0	0	0	**699**
1:00 PM	4	594	137	0	35	1	0	1	1	3	0	0	1	**777**
2:00 PM	2	611	131	0	40	0	0	0	1	1	0	0	0	**786**
3:00 PM	5	761	203	0	40	4	0	2	0	2	0	0	2	**1,019**
4:00 PM	2	691	155	0	29	3	0	1	1	1	0	0	2	**885**
5:00 PM	2	722	154	0	22	3	0	0	0	1	0	0	1	**905**
6:00 PM	3	632	103	0	17	3	0	1	0	1	0	0	0	**760**
7:00 PM	3	467	78	0	18	0	0	0	0	2	0	0	0	**568**
8:00 PM	3	361	58	0	12	0	0	0	0	0	0	0	0	**434**
9:00 PM	0	319	32	0	10	0	0	0	0	0	0	0	0	**361**
10:00 PM	1	201	21	0	6	0	0	0	2	0	0	0	0	**231**
11:00 PM	1	98	9	0	1	0	0	0	0	0	0	0	0	**109**
Total	**42**	**9,001**	**1,915**	**3**	**481**	**31**	**0**	**8**	**13**	**15**	**0**	**0**	**10**	**11,519**
Percent	**0.4%**	**78.1%**	**16.6%**	**0.0%**	**4.2%**	**0.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	33	5	0	0	0	0	0	1	0	0	0	0	**41**
1:00 AM	1	31	3	0	1	0	0	0	0	0	0	0	0	**36**
2:00 AM	0	9	2	0	2	0	0	0	0	0	0	0	0	**13**
3:00 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	55	12	0	5	0	0	0	0	0	0	0	0	**72**
5:00 AM	0	119	26	0	5	1	0	0	0	0	0	0	0	**151**
6:00 AM	2	317	57	0	27	2	0	1	1	1	0	0	0	**408**
7:00 AM	5	620	107	0	35	4	0	1	0	0	0	0	0	**772**
8:00 AM	3	767	120	0	36	6	0	0	1	1	0	0	1	**935**
9:00 AM	4	706	119	0	27	1	0	0	0	1	0	0	1	**859**
10:00 AM	2	604	143	0	24	8	0	0	2	2	0	0	0	**785**
11:00 AM	1	579	104	0	35	8	0	1	0	0	0	0	0	**728**
12:00 PM	2	669	91	0	35	5	0	0	0	1	0	0	0	**803**
1:00 PM	3	611	108	0	28	5	0	0	1	0	0	0	0	**756**
2:00 PM	5	714	95	0	38	8	0	1	0	4	1	0	0	**866**
3:00 PM	5	797	124	0	39	8	0	0	0	0	0	0	0	**973**
4:00 PM	2	872	100	0	20	10	0	0	1	0	0	0	0	**1,005**
5:00 PM	7	749	72	0	16	6	0	1	0	0	0	0	0	**851**
6:00 PM	0	625	84	2	22	1	0	0	0	1	0	0	0	**735**
7:00 PM	2	544	66	0	16	1	0	0	0	1	0	0	0	**630**
8:00 PM	0	390	38	0	7	0	0	0	0	0	0	0	0	**435**
9:00 PM	3	294	33	0	13	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	120	11	0	5	1	0	0	0	0	0	0	0	**137**
11:00 PM	0	93	9	0	2	0	0	0	2	0	0	0	0	**106**
Total	**49**	**10,329**	**1,530**	**2**	**439**	**76**	**0**	**5**	**9**	**12**	**1**	**0**	**2**	**12,454**
Percent	**0.4%**	**82.9%**	**12.3%**	**0.0%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	47	2	0	1	0	0	0	0	0	0	0	0	**50**
1:00 AM	0	16	8	0	1	0	0	0	0	0	0	0	0	**25**
2:00 AM	0	15	1	0	0	0	0	0	1	0	0	0	0	**17**
3:00 AM	0	9	1	0	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	31	2	0	2	0	0	0	1	0	0	0	0	**36**
5:00 AM	0	80	16	1	16	1	0	0	0	0	0	0	0	**114**
6:00 AM	5	246	48	1	17	2	0	0	1	0	0	0	0	**320**
7:00 AM	4	456	87	0	29	2	0	0	0	1	0	0	2	**581**
8:00 AM	2	656	168	0	47	4	0	0	3	0	0	0	1	**881**
9:00 AM	0	480	112	1	38	1	0	1	1	0	0	0	0	**634**
10:00 AM	1	518	144	0	28	2	0	1	0	2	0	0	0	**696**
11:00 AM	2	469	115	0	30	2	0	0	1	0	0	0	1	**620**
12:00 PM	2	521	130	0	41	3	0	1	0	1	0	0	0	**699**
1:00 PM	4	594	137	0	35	1	0	1	1	3	0	0	1	**777**
2:00 PM	2	611	131	0	40	0	0	0	1	1	0	0	0	**786**
3:00 PM	5	761	203	0	40	4	0	2	0	2	0	0	2	**1,019**
4:00 PM	2	691	155	0	29	3	0	1	1	1	0	0	2	**885**
5:00 PM	2	722	154	0	22	3	0	0	0	1	0	0	1	**905**
6:00 PM	3	632	103	0	17	3	0	1	0	1	0	0	0	**760**
7:00 PM	3	467	78	0	18	0	0	0	0	2	0	0	0	**568**
8:00 PM	3	361	58	0	12	0	0	0	0	0	0	0	0	**434**
9:00 PM	0	319	32	0	10	0	0	0	0	0	0	0	0	**361**
10:00 PM	1	201	21	0	6	0	0	0	2	0	0	0	0	**231**
11:00 PM	1	98	9	0	1	0	0	0	0	0	0	0	0	**109**
Total	**42**	**9,001**	**1,915**	**3**	**481**	**31**	**0**	**8**	**13**	**15**	**0**	**0**	**10**	**11,519**
Percent	**0.4%**	**78.1%**	**16.6%**	**0.0%**	**4.2%**	**0.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	33	5	0	0	0	0	0	1	0	0	0	0	**41**
1:00 AM	1	31	3	0	1	0	0	0	0	0	0	0	0	**36**
2:00 AM	0	9	2	0	2	0	0	0	0	0	0	0	0	**13**
3:00 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	55	12	0	5	0	0	0	0	0	0	0	0	**72**
5:00 AM	0	119	26	0	5	1	0	0	0	0	0	0	0	**151**
6:00 AM	2	317	57	0	27	2	0	1	1	1	0	0	0	**408**
7:00 AM	5	620	107	0	35	4	0	1	0	0	0	0	0	**772**
8:00 AM	3	767	120	0	36	6	0	0	1	1	0	0	1	**935**
9:00 AM	4	706	119	0	27	1	0	0	0	1	0	0	1	**859**
10:00 AM	2	604	143	0	24	8	0	0	2	2	0	0	0	**785**
11:00 AM	1	579	104	0	35	8	0	1	0	0	0	0	0	**728**
12:00 PM	2	669	91	0	35	5	0	0	0	1	0	0	0	**803**
1:00 PM	3	611	108	0	28	5	0	0	1	0	0	0	0	**756**
2:00 PM	5	714	95	0	38	8	0	1	0	4	1	0	0	**866**
3:00 PM	5	797	124	0	39	8	0	0	0	0	0	0	0	**973**
4:00 PM	2	872	100	0	20	10	0	0	1	0	0	0	0	**1,005**
5:00 PM	7	749	72	0	16	6	0	1	0	0	0	0	0	**851**
6:00 PM	0	625	84	2	22	1	0	0	0	1	0	0	0	**735**
7:00 PM	2	544	66	0	16	1	0	0	0	1	0	0	0	**630**
8:00 PM	0	390	38	0	7	0	0	0	0	0	0	0	0	**435**
9:00 PM	3	294	33	0	13	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	120	11	0	5	1	0	0	0	0	0	0	0	**137**
11:00 PM	0	93	9	0	2	0	0	0	2	0	0	0	0	**106**
Total	**49**	**10,329**	**1,530**	**2**	**439**	**76**	**0**	**5**	**9**	**12**	**1**	**0**	**2**	**12,454**
Percent	**0.4%**	**82.9%**	**12.3%**	**0.0%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	47	2	0	1	0	0	0	0	0	0	0	0	**50**
1:00 AM	0	16	8	0	1	0	0	0	0	0	0	0	0	**25**
2:00 AM	0	15	1	0	0	0	0	0	1	0	0	0	0	**17**
3:00 AM	0	9	1	0	1	0	0	0	0	0	0	0	0	**11**
4:00 AM	0	31	2	0	2	0	0	0	1	0	0	0	0	**36**
5:00 AM	0	80	16	1	16	1	0	0	0	0	0	0	0	**114**
6:00 AM	5	246	48	1	17	2	0	0	1	0	0	0	0	**320**
7:00 AM	4	456	87	0	29	2	0	0	0	1	0	0	2	**581**
8:00 AM	2	656	168	0	47	4	0	0	3	0	0	0	1	**881**
9:00 AM	0	480	112	1	38	1	0	1	1	0	0	0	0	**634**
10:00 AM	1	518	144	0	28	2	0	1	0	2	0	0	0	**696**
11:00 AM	2	469	115	0	30	2	0	0	1	0	0	0	1	**620**
12:00 PM	2	521	130	0	41	3	0	1	0	1	0	0	0	**699**
1:00 PM	4	594	137	0	35	1	0	1	1	3	0	0	1	**777**
2:00 PM	2	611	131	0	40	0	0	0	1	1	0	0	0	**786**
3:00 PM	5	761	203	0	40	4	0	2	0	2	0	0	2	**1,019**
4:00 PM	2	691	155	0	29	3	0	1	1	1	0	0	2	**885**
5:00 PM	2	722	154	0	22	3	0	0	0	1	0	0	1	**905**
6:00 PM	3	632	103	0	17	3	0	1	0	1	0	0	0	**760**
7:00 PM	3	467	78	0	18	0	0	0	0	2	0	0	0	**568**
8:00 PM	3	361	58	0	12	0	0	0	0	0	0	0	0	**434**
9:00 PM	0	319	32	0	10	0	0	0	0	0	0	0	0	**361**
10:00 PM	1	201	21	0	6	0	0	0	2	0	0	0	0	**231**
11:00 PM	1	98	9	0	1	0	0	0	0	0	0	0	0	**109**
Total	**42**	**9,001**	**1,915**	**3**	**481**	**31**	**0**	**8**	**13**	**15**	**0**	**0**	**10**	**11,519**
Percent	**0.4%**	**78.1%**	**16.6%**	**0.0%**	**4.2%**	**0.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Vehicle Speed Report Summary

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 19

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	303	1,011	1,927	2,645	2,325	2,246	1,370	481	105	32	6	3	0	0	0	0	0	12,454
Percent	2.4%	8.1%	15.5%	21.2%	18.7%	18.0%	11.0%	3.9%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	2	14	42	291	617	2,928	4,625	2,346	552	85	15	1	1	0	0	0	0	11,519
Percent	0.0%	0.1%	0.4%	2.5%	5.4%	25.4%	40.2%	20.4%	4.8%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	305	1,025	1,969	2,936	2,942	5,174	5,995	2,827	657	117	21	4	1	0	0	0	0	23,973
Percent	1.3%	4.3%	8.2%	12.2%	12.3%	21.6%	25.0%	11.8%	2.7%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	25.7	mph	Mean (Average) Speed	26.0	mph
85th Percentile	35.3	mph	10 mph Pace	19.3 - 29.3	mph
95th Percentile	40.0	mph	Percent in Pace	39.9	%
Westbound			**Westbound**		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	36.8	mph
85th Percentile	41.9	mph	10 mph Pace	32.0 - 42.0	mph
95th Percentile	45.3	mph	Percent in Pace	70.3	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	8	6	9	6	5	2	1	3	0	0	0	0	0	0	**41**
1:00 AM	0	0	2	8	3	8	6	6	0	1	0	2	0	0	0	0	0	**36**
2:00 AM	0	0	0	1	0	3	4	3	1	0	0	1	0	0	0	0	0	**13**
3:00 AM	0	0	0	2	1	3	3	2	2	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	0	2	7	2	16	22	18	4	1	0	0	0	0	0	0	0	**72**
5:00 AM	0	0	8	20	13	19	55	26	9	1	0	0	0	0	0	0	0	**151**
6:00 AM	0	2	21	62	61	107	104	38	10	2	1	0	0	0	0	0	0	**408**
7:00 AM	1	25	84	134	133	190	140	49	8	7	1	0	0	0	0	0	0	**772**
8:00 AM	20	120	179	221	178	125	62	22	7	1	0	0	0	0	0	0	0	**935**
9:00 AM	26	71	132	164	181	163	96	22	4	0	0	0	0	0	0	0	0	**859**
10:00 AM	20	47	150	174	164	143	58	25	4	0	0	0	0	0	0	0	0	**785**
11:00 AM	3	36	76	158	161	152	105	26	8	3	0	0	0	0	0	0	0	**728**
12:00 PM	7	51	125	206	163	151	73	17	8	2	0	0	0	0	0	0	0	**803**
1:00 PM	10	58	115	190	160	129	64	25	4	1	0	0	0	0	0	0	0	**756**
2:00 PM	33	101	188	179	151	136	54	19	2	2	1	0	0	0	0	0	0	**866**
3:00 PM	38	125	219	242	168	113	51	16	1	0	0	0	0	0	0	0	0	**973**
4:00 PM	60	172	202	229	178	113	46	4	1	0	0	0	0	0	0	0	0	**1,005**
5:00 PM	73	155	191	157	117	87	52	17	2	0	0	0	0	0	0	0	0	**851**
6:00 PM	8	23	92	169	171	161	77	28	5	1	0	0	0	0	0	0	0	**735**
7:00 PM	4	20	77	128	147	153	78	22	1	0	0	0	0	0	0	0	0	**630**
8:00 PM	0	2	27	90	91	106	80	26	7	6	0	0	0	0	0	0	0	**435**
9:00 PM	0	3	21	64	46	109	73	23	4	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	0	12	15	19	33	35	20	3	0	0	0	0	0	0	0	0	**137**
11:00 PM	0	0	3	17	11	17	26	22	8	2	0	0	0	0	0	0	0	**106**
Total	**303**	**1,011**	**1,927**	**2,645**	**2,325**	**2,246**	**1,370**	**481**	**105**	**32**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**12,454**
Percent	**2.4%**	**8.1%**	**15.5%**	**21.2%**	**18.7%**	**18.0%**	**11.0%**	**3.9%**	**0.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	25.7	mph	Mean (Average) Speed	26.0	mph
85th Percentile	35.3	mph	10 mph Pace	19.3 - 29.3	mph
95th Percentile	40.0	mph	Percent in Pace	39.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	0	6	17	21	4	0	1	0	0	0	0	0	0	**50**
1:00 AM	0	0	0	0	0	1	7	11	3	1	2	0	0	0	0	0	0	**25**
2:00 AM	0	0	0	2	0	4	3	5	2	1	0	0	0	0	0	0	0	**17**
3:00 AM	0	0	0	1	0	1	4	3	0	1	1	0	0	0	0	0	0	**11**
4:00 AM	0	0	1	3	2	6	7	13	3	1	0	0	0	0	0	0	0	**36**
5:00 AM	0	0	0	4	3	9	30	44	23	1	0	0	0	0	0	0	0	**114**
6:00 AM	0	0	3	8	5	45	104	83	52	19	1	0	0	0	0	0	0	**320**
7:00 AM	0	1	4	17	37	121	216	149	28	5	3	0	0	0	0	0	0	**581**
8:00 AM	0	0	3	34	78	321	319	103	20	3	0	0	0	0	0	0	0	**881**
9:00 AM	0	0	3	16	39	170	261	108	32	4	1	0	0	0	0	0	0	**634**
10:00 AM	0	0	0	25	54	192	271	125	26	3	0	0	0	0	0	0	0	**696**
11:00 AM	0	0	1	19	25	108	262	162	35	8	0	0	0	0	0	0	0	**620**
12:00 PM	0	0	0	17	44	150	292	152	38	5	1	0	0	0	0	0	0	**699**
1:00 PM	0	0	2	9	31	184	353	160	34	2	2	0	0	0	0	0	0	**777**
2:00 PM	0	0	0	16	26	210	339	170	24	1	0	0	0	0	0	0	0	**786**
3:00 PM	1	10	13	43	92	306	369	161	20	3	0	0	1	0	0	0	0	**1,019**
4:00 PM	1	0	1	16	53	256	365	157	35	1	0	0	0	0	0	0	0	**885**
5:00 PM	0	3	3	22	38	247	395	161	31	4	1	0	0	0	0	0	0	**905**
6:00 PM	0	0	3	7	28	194	317	175	34	0	1	1	0	0	0	0	0	**760**
7:00 PM	0	0	5	13	30	178	217	101	22	2	0	0	0	0	0	0	0	**568**
8:00 PM	0	0	0	7	16	118	174	84	30	4	1	0	0	0	0	0	0	**434**
9:00 PM	0	0	0	7	10	59	178	88	15	4	0	0	0	0	0	0	0	**361**
10:00 PM	0	0	0	4	4	32	90	70	24	7	0	0	0	0	0	0	0	**231**
11:00 PM	0	0	0	0	2	10	35	40	17	5	0	0	0	0	0	0	0	**109**
Total	**2**	**14**	**42**	**291**	**617**	**2,928**	**4,625**	**2,346**	**552**	**85**	**15**	**1**	**1**	**0**	**0**	**0**	**0**	**11,519**
Percent	**0.0%**	**0.1%**	**0.4%**	**2.5%**	**5.4%**	**25.4%**	**40.2%**	**20.4%**	**4.8%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	36.8	mph
85th Percentile	41.9	mph	10 mph Pace	32.0 - 42.0	mph
95th Percentile	45.3	mph	Percent in Pace	70.31	%

Project Manager: (415) 310-6469
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Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	8	6	9	6	5	2	1	3	0	0	0	0	0	0	**41**
1:00 AM	0	0	2	8	3	8	6	6	0	1	0	2	0	0	0	0	0	**36**
2:00 AM	0	0	0	1	0	3	4	3	1	0	0	1	0	0	0	0	0	**13**
3:00 AM	0	0	0	2	1	3	3	2	2	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	0	2	7	2	16	22	18	4	1	0	0	0	0	0	0	0	**72**
5:00 AM	0	0	8	20	13	19	55	26	9	1	0	0	0	0	0	0	0	**151**
6:00 AM	0	2	21	62	61	107	104	38	10	2	1	0	0	0	0	0	0	**408**
7:00 AM	1	25	84	134	133	190	140	49	8	7	1	0	0	0	0	0	0	**772**
8:00 AM	20	120	179	221	178	125	62	22	7	1	0	0	0	0	0	0	0	**935**
9:00 AM	26	71	132	164	181	163	96	22	4	0	0	0	0	0	0	0	0	**859**
10:00 AM	20	47	150	174	164	143	58	25	4	0	0	0	0	0	0	0	0	**785**
11:00 AM	3	36	76	158	161	152	105	26	8	3	0	0	0	0	0	0	0	**728**
12:00 PM	7	51	125	206	163	151	73	17	8	2	0	0	0	0	0	0	0	**803**
1:00 PM	10	58	115	190	160	129	64	25	4	1	0	0	0	0	0	0	0	**756**
2:00 PM	33	101	188	179	151	136	54	19	2	2	1	0	0	0	0	0	0	**866**
3:00 PM	38	125	219	242	168	113	51	16	1	0	0	0	0	0	0	0	0	**973**
4:00 PM	60	172	202	229	178	113	46	4	1	0	0	0	0	0	0	0	0	**1,005**
5:00 PM	73	155	191	157	117	87	52	17	2	0	0	0	0	0	0	0	0	**851**
6:00 PM	8	23	92	169	171	161	77	28	5	1	0	0	0	0	0	0	0	**735**
7:00 PM	4	20	77	128	147	153	78	22	1	0	0	0	0	0	0	0	0	**630**
8:00 PM	0	2	27	90	91	106	80	26	7	6	0	0	0	0	0	0	0	**435**
9:00 PM	0	3	21	64	46	109	73	23	4	1	0	0	0	0	0	0	0	**344**
10:00 PM	0	0	12	15	19	33	35	20	3	0	0	0	0	0	0	0	0	**137**
11:00 PM	0	0	3	17	11	17	26	22	8	2	0	0	0	0	0	0	0	**106**
Total	**303**	**1,011**	**1,927**	**2,645**	**2,325**	**2,246**	**1,370**	**481**	**105**	**32**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**12,454**
Percent	**2.4%**	**8.1%**	**15.5%**	**21.2%**	**18.7%**	**18.0%**	**11.0%**	**3.9%**	**0.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	25.7	mph	Mean (Average) Speed	26.0	mph
85th Percentile	35.3	mph	10 mph Pace	19.3 - 29.3	mph
95th Percentile	40.0	mph	Percent in Pace	39.9	%

Project Manager: (415) 310-6469
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Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 to 4/25/2019
Site Code: 19

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	0	6	17	21	4	0	1	0	0	0	0	0	0	**50**
1:00 AM	0	0	0	0	0	1	7	11	3	1	2	0	0	0	0	0	0	**25**
2:00 AM	0	0	0	2	0	4	3	5	2	1	0	0	0	0	0	0	0	**17**
3:00 AM	0	0	0	1	0	1	4	3	0	1	1	0	0	0	0	0	0	**11**
4:00 AM	0	0	1	3	2	6	7	13	3	1	0	0	0	0	0	0	0	**36**
5:00 AM	0	0	0	4	3	9	30	44	23	1	0	0	0	0	0	0	0	**114**
6:00 AM	0	0	3	8	5	45	104	83	52	19	1	0	0	0	0	0	0	**320**
7:00 AM	0	1	4	17	37	121	216	149	28	5	3	0	0	0	0	0	0	**581**
8:00 AM	0	0	3	34	78	321	319	103	20	3	0	0	0	0	0	0	0	**881**
9:00 AM	0	0	3	16	39	170	261	108	32	4	1	0	0	0	0	0	0	**634**
10:00 AM	0	0	0	25	54	192	271	125	26	3	0	0	0	0	0	0	0	**696**
11:00 AM	0	0	1	19	25	108	262	162	35	8	0	0	0	0	0	0	0	**620**
12:00 PM	0	0	0	17	44	150	292	152	38	5	1	0	0	0	0	0	0	**699**
1:00 PM	0	0	2	9	31	184	353	160	34	2	2	0	0	0	0	0	0	**777**
2:00 PM	0	0	0	16	26	210	339	170	24	1	0	0	0	0	0	0	0	**786**
3:00 PM	1	10	13	43	92	306	369	161	20	3	0	0	1	0	0	0	0	**1,019**
4:00 PM	1	0	1	16	53	256	365	157	35	1	0	0	0	0	0	0	0	**885**
5:00 PM	0	3	3	22	38	247	395	161	31	4	1	0	0	0	0	0	0	**905**
6:00 PM	0	0	3	7	28	194	317	175	34	0	1	1	0	0	0	0	0	**760**
7:00 PM	0	0	5	13	30	178	217	101	22	2	0	0	0	0	0	0	0	**568**
8:00 PM	0	0	0	7	16	118	174	84	30	4	1	0	0	0	0	0	0	**434**
9:00 PM	0	0	0	7	10	59	178	88	15	4	0	0	0	0	0	0	0	**361**
10:00 PM	0	0	0	4	4	32	90	70	24	7	0	0	0	0	0	0	0	**231**
11:00 PM	0	0	0	0	2	10	35	40	17	5	0	0	0	0	0	0	0	**109**
Total	**2**	**14**	**42**	**291**	**617**	**2,928**	**4,625**	**2,346**	**552**	**85**	**15**	**1**	**1**	**0**	**0**	**0**	**0**	**11,519**
Percent	**0.0%**	**0.1%**	**0.4%**	**2.5%**	**5.4%**	**25.4%**	**40.2%**	**20.4%**	**4.8%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	36.8	mph
85th Percentile	41.9	mph	10 mph Pace	32.0 - 42.0	mph
95th Percentile	45.3	mph	Percent in Pace	70.3	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Manuel T Freitas Pkwy, B/W Las Gallinas & Del Presidio
Date Range: 4/25/2019 - 5/1/2019
Site Code: 19

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	41	50	91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	50	91
1:00 AM	36	25	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	25	61
2:00 AM	13	17	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	17	30
3:00 AM	13	11	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	11	24
4:00 AM	72	36	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	36	108
5:00 AM	151	114	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	114	265
6:00 AM	408	320	728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	408	320	728
7:00 AM	772	581	1,353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	772	581	1,353
8:00 AM	**935**	**881**	**1,816**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**935**	**881**	**1,816**
9:00 AM	859	634	1,493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	859	634	1,493
10:00 AM	785	696	1,481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	785	696	1,481
11:00 AM	728	620	1,348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	728	620	1,348
12:00 PM	803	699	1,502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	803	699	1,502
1:00 PM	756	777	1,533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	756	777	1,533
2:00 PM	866	786	1,652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	866	786	1,652
3:00 PM	973	**1,019**	**1,992**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	973	**1,019**	**1,992**
4:00 PM	**1,005**	885	1,890	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,005**	885	1,890
5:00 PM	851	905	1,756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	851	905	1,756
6:00 PM	735	760	1,495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	735	760	1,495
7:00 PM	630	568	1,198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	630	568	1,198
8:00 PM	435	434	869	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	435	434	869
9:00 PM	344	361	705	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344	361	705
10:00 PM	137	231	368	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	231	368
11:00 PM	106	109	215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	109	215
Total	12,454	11,519	23,973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,454	11,519	23,973
Percent	52%	48%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	935	881	1,816	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	935	881	1,816
PM Peak	16:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	15:00	15:00
Vol.	1,005	1,019	1,992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,005	1,019	1,992

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Grand Ave, B/W Villa & Mission

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 20

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	14	2,179	323	1	140	2	0	0	0	0	0	0	0	2,659
Percent	0.5%	81.9%	12.1%	0.0%	5.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	10	1,988	309	0	141	1	0	0	0	0	0	0	0	2,449
Percent	0.4%	81.2%	12.6%	0.0%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	24	4,167	632	1	281	3	0	0	0	0	0	0	0	5,108
Percent	0.5%	81.6%	12.4%	0.0%	5.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	8	1	0	0	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	18	9	0	4	0	0	0	0	0	0	0	0	**31**
7:00 AM	2	122	22	0	5	0	0	0	0	0	0	0	0	**151**
8:00 AM	0	177	36	0	14	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	180	21	0	10	0	0	0	0	0	0	0	0	**211**
10:00 AM	3	116	26	0	9	0	0	0	0	0	0	0	0	**154**
11:00 AM	1	134	20	0	11	0	0	0	0	0	0	0	0	**166**
12:00 PM	1	138	26	0	13	0	0	0	0	0	0	0	0	**178**
1:00 PM	1	164	26	0	12	1	0	0	0	0	0	0	0	**204**
2:00 PM	0	154	18	0	9	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	183	22	0	14	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	167	20	0	10	0	0	0	0	0	0	0	0	**201**
5:00 PM	1	162	24	0	8	0	0	0	0	0	0	0	0	**195**
6:00 PM	1	184	19	0	5	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	105	18	1	8	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	75	7	0	3	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	45	1	0	3	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	**14**
Total	**14**	**2,179**	**323**	**1**	**140**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.5%**	**81.9%**	**12.1%**	**0.0%**	**5.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	**24**
6:00 AM	0	30	2	0	6	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	91	17	0	8	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	116	29	0	8	0	0	0	0	0	0	0	0	**153**
9:00 AM	0	115	20	0	15	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	99	14	0	9	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	123	25	0	10	0	0	0	0	0	0	0	0	**159**
12:00 PM	1	128	16	0	8	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	164	22	0	9	0	0	0	0	0	0	0	0	**196**
2:00 PM	1	130	25	0	15	0	0	0	0	0	0	0	0	**171**
3:00 PM	1	177	32	0	9	0	0	0	0	0	0	0	0	**219**
4:00 PM	1	166	27	0	9	0	0	0	0	0	0	0	0	**203**
5:00 PM	2	183	22	0	13	0	0	0	0	0	0	0	0	**220**
6:00 PM	0	164	15	0	9	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	98	16	0	6	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	103	13	0	4	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
10:00 PM	1	24	2	0	1	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
Total	**10**	**1,988**	**309**	**0**	**141**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.4%**	**81.2%**	**12.6%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	8	1	0	0	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	18	9	0	4	0	0	0	0	0	0	0	0	**31**
7:00 AM	2	122	22	0	5	0	0	0	0	0	0	0	0	**151**
8:00 AM	0	177	36	0	14	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	180	21	0	10	0	0	0	0	0	0	0	0	**211**
10:00 AM	3	116	26	0	9	0	0	0	0	0	0	0	0	**154**
11:00 AM	1	134	20	0	11	0	0	0	0	0	0	0	0	**166**
12:00 PM	1	138	26	0	13	0	0	0	0	0	0	0	0	**178**
1:00 PM	1	164	26	0	12	1	0	0	0	0	0	0	0	**204**
2:00 PM	0	154	18	0	9	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	183	22	0	14	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	167	20	0	10	0	0	0	0	0	0	0	0	**201**
5:00 PM	1	162	24	0	8	0	0	0	0	0	0	0	0	**195**
6:00 PM	1	184	19	0	5	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	105	18	1	8	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	75	7	0	3	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	45	1	0	3	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	**14**
Total	**14**	**2,179**	**323**	**1**	**140**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.5%**	**81.9%**	**12.1%**	**0.0%**	**5.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	**24**
6:00 AM	0	30	2	0	6	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	91	17	0	8	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	116	29	0	8	0	0	0	0	0	0	0	0	**153**
9:00 AM	0	115	20	0	15	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	99	14	0	9	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	123	25	0	10	0	0	0	0	0	0	0	0	**159**
12:00 PM	1	128	16	0	8	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	164	22	0	9	0	0	0	0	0	0	0	0	**196**
2:00 PM	1	130	25	0	15	0	0	0	0	0	0	0	0	**171**
3:00 PM	1	177	32	0	9	0	0	0	0	0	0	0	0	**219**
4:00 PM	1	166	27	0	9	0	0	0	0	0	0	0	0	**203**
5:00 PM	2	183	22	0	13	0	0	0	0	0	0	0	0	**220**
6:00 PM	0	164	15	0	9	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	98	16	0	6	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	103	13	0	4	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
10:00 PM	1	24	2	0	1	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
Total	**10**	**1,988**	**309**	**0**	**141**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.4%**	**81.2%**	**12.6%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	8	1	0	0	1	0	0	0	0	0	0	0	**10**
6:00 AM	0	18	9	0	4	0	0	0	0	0	0	0	0	**31**
7:00 AM	2	122	22	0	5	0	0	0	0	0	0	0	0	**151**
8:00 AM	0	177	36	0	14	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	180	21	0	10	0	0	0	0	0	0	0	0	**211**
10:00 AM	3	116	26	0	9	0	0	0	0	0	0	0	0	**154**
11:00 AM	1	134	20	0	11	0	0	0	0	0	0	0	0	**166**
12:00 PM	1	138	26	0	13	0	0	0	0	0	0	0	0	**178**
1:00 PM	1	164	26	0	12	1	0	0	0	0	0	0	0	**204**
2:00 PM	0	154	18	0	9	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	183	22	0	14	0	0	0	0	0	0	0	0	**219**
4:00 PM	4	167	20	0	10	0	0	0	0	0	0	0	0	**201**
5:00 PM	1	162	24	0	8	0	0	0	0	0	0	0	0	**195**
6:00 PM	1	184	19	0	5	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	105	18	1	8	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	75	7	0	3	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	45	1	0	3	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	**14**
Total	**14**	**2,179**	**323**	**1**	**140**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.5%**	**81.9%**	**12.1%**	**0.0%**	**5.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	**24**
6:00 AM	0	30	2	0	6	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	91	17	0	8	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	116	29	0	8	0	0	0	0	0	0	0	0	**153**
9:00 AM	0	115	20	0	15	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	99	14	0	9	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	123	25	0	10	0	0	0	0	0	0	0	0	**159**
12:00 PM	1	128	16	0	8	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	164	22	0	9	0	0	0	0	0	0	0	0	**196**
2:00 PM	1	130	25	0	15	0	0	0	0	0	0	0	0	**171**
3:00 PM	1	177	32	0	9	0	0	0	0	0	0	0	0	**219**
4:00 PM	1	166	27	0	9	0	0	0	0	0	0	0	0	**203**
5:00 PM	2	183	22	0	13	0	0	0	0	0	0	0	0	**220**
6:00 PM	0	164	15	0	9	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	98	16	0	6	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	103	13	0	4	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	32	4	0	1	0	0	0	0	0	0	0	0	**37**
10:00 PM	1	24	2	0	1	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
Total	**10**	**1,988**	**309**	**0**	**141**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.4%**	**81.2%**	**12.6%**	**0.0%**	**5.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Grand Ave, B/W Villa & Mission

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 20

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	9	27	169	1,091	1,158	197	8	0	0	0	0	0	0	0	0	0	0	2,659
Percent	0.3%	1.0%	6.4%	41.0%	43.6%	7.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	2	16	99	713	1,254	345	18	1	0	1	0	0	0	0	0	0	0	2,449
Percent	0.1%	0.7%	4.0%	29.1%	51.2%	14.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	11	43	268	1,804	2,412	542	26	1	0	1	0	0	0	0	0	0	0	5,108
Percent	0.2%	0.8%	5.2%	35.3%	47.2%	10.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	25.2	mph	Mean (Average) Speed	25.0	mph
85th Percentile	28.5	mph	10 mph Pace	20.2 - 30.2	mph
95th Percentile	30.8	mph	Percent in Pace	84.7	%
Southbound			**Southbound**		
50th Percentile (Median)	26.3	mph	Mean (Average) Speed	26.3	mph
85th Percentile	30.0	mph	10 mph Pace	21.6 - 31.6	mph
95th Percentile	32.2	mph	Percent in Pace	84.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Wednesday, April 24, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	3	5	1	1	0	0	0	0	0	0	0	0	0	0	**10**
6:00 AM	0	0	1	9	7	14	0	0	0	0	0	0	0	0	0	0	0	**31**
7:00 AM	1	1	7	61	67	14	0	0	0	0	0	0	0	0	0	0	0	**151**
8:00 AM	1	1	15	82	108	20	0	0	0	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	0	17	87	94	13	0	0	0	0	0	0	0	0	0	0	0	**211**
10:00 AM	1	6	12	62	68	4	1	0	0	0	0	0	0	0	0	0	0	**154**
11:00 AM	0	1	7	75	75	8	0	0	0	0	0	0	0	0	0	0	0	**166**
12:00 PM	0	1	5	70	91	11	0	0	0	0	0	0	0	0	0	0	0	**178**
1:00 PM	4	10	26	75	79	10	0	0	0	0	0	0	0	0	0	0	0	**204**
2:00 PM	0	0	7	77	82	15	0	0	0	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	2	23	103	79	12	0	0	0	0	0	0	0	0	0	0	0	**219**
4:00 PM	2	2	9	90	86	12	0	0	0	0	0	0	0	0	0	0	0	**201**
5:00 PM	0	1	15	76	84	16	3	0	0	0	0	0	0	0	0	0	0	**195**
6:00 PM	0	1	13	79	102	14	0	0	0	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	1	1	61	54	14	1	0	0	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	0	6	38	37	4	0	0	0	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	0	3	21	18	6	1	0	0	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	0	2	7	12	3	0	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	0	0	5	7	2	0	0	0	0	0	0	0	0	0	0	0	**14**
Total	**9**	**27**	**169**	**1,091**	**1,158**	**197**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.3%**	**1.0%**	**6.4%**	**41.0%**	**43.6%**	**7.4%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	25.2	mph	Mean (Average) Speed	25.0	mph
85th Percentile	28.5	mph	10 mph Pace	20.2 - 30.2	mph
95th Percentile	30.8	mph	Percent in Pace	84.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

DATA SOLUTIONS

Wednesday, April 24, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	0	3	14	7	0	0	0	0	0	0	0	0	0	0	0	**24**
6:00 AM	0	0	0	6	27	5	0	0	0	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	0	0	15	54	45	2	0	0	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	0	1	22	95	32	3	0	0	0	0	0	0	0	0	0	0	**153**
9:00 AM	1	4	5	45	73	21	1	0	0	0	0	0	0	0	0	0	0	**150**
10:00 AM	0	2	7	30	65	19	0	0	0	0	0	0	0	0	0	0	0	**123**
11:00 AM	0	0	8	44	84	21	2	0	0	0	0	0	0	0	0	0	0	**159**
12:00 PM	0	0	5	45	79	23	1	0	0	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	4	18	72	90	11	0	0	0	0	0	0	0	0	0	0	0	**196**
2:00 PM	0	1	5	56	89	19	1	0	0	0	0	0	0	0	0	0	0	**171**
3:00 PM	0	2	13	92	93	19	0	0	0	0	0	0	0	0	0	0	0	**219**
4:00 PM	0	1	9	60	108	25	0	0	0	0	0	0	0	0	0	0	0	**203**
5:00 PM	0	2	7	85	108	15	2	0	0	1	0	0	0	0	0	0	0	**220**
6:00 PM	0	0	8	49	104	25	2	0	0	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	0	5	36	60	18	1	0	0	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	0	5	38	62	15	0	0	0	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	0	0	5	21	9	1	1	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	0	0	1	3	15	9	0	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	0	1	3	9	3	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**2**	**16**	**99**	**713**	**1,254**	**345**	**18**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.1%**	**0.7%**	**4.0%**	**29.1%**	**51.2%**	**14.1%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	26.3	mph	Mean (Average) Speed	26.3	mph
85th Percentile	30.0	mph	10 mph Pace	21.6 - 31.6	mph
95th Percentile	32.2	mph	Percent in Pace	84.03	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	3	5	1	1	0	0	0	0	0	0	0	0	0	0	**10**
6:00 AM	0	0	1	9	7	14	0	0	0	0	0	0	0	0	0	0	0	**31**
7:00 AM	1	1	7	61	67	14	0	0	0	0	0	0	0	0	0	0	0	**151**
8:00 AM	1	1	15	82	108	20	0	0	0	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	0	17	87	94	13	0	0	0	0	0	0	0	0	0	0	0	**211**
10:00 AM	1	6	12	62	68	4	1	0	0	0	0	0	0	0	0	0	0	**154**
11:00 AM	0	1	7	75	75	8	0	0	0	0	0	0	0	0	0	0	0	**166**
12:00 PM	0	1	5	70	91	11	0	0	0	0	0	0	0	0	0	0	0	**178**
1:00 PM	4	10	26	75	79	10	0	0	0	0	0	0	0	0	0	0	0	**204**
2:00 PM	0	0	7	77	82	15	0	0	0	0	0	0	0	0	0	0	0	**181**
3:00 PM	0	2	23	103	79	12	0	0	0	0	0	0	0	0	0	0	0	**219**
4:00 PM	2	2	9	90	86	12	0	0	0	0	0	0	0	0	0	0	0	**201**
5:00 PM	0	1	15	76	84	16	3	0	0	0	0	0	0	0	0	0	0	**195**
6:00 PM	0	1	13	79	102	14	0	0	0	0	0	0	0	0	0	0	0	**209**
7:00 PM	0	1	1	61	54	14	1	0	0	0	0	0	0	0	0	0	0	**132**
8:00 PM	0	0	6	38	37	4	0	0	0	0	0	0	0	0	0	0	0	**85**
9:00 PM	0	0	3	21	18	6	1	0	0	0	0	0	0	0	0	0	0	**49**
10:00 PM	0	0	2	7	12	3	0	0	0	0	0	0	0	0	0	0	0	**24**
11:00 PM	0	0	0	5	7	2	0	0	0	0	0	0	0	0	0	0	0	**14**
Total	**9**	**27**	**169**	**1,091**	**1,158**	**197**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,659**
Percent	**0.3%**	**1.0%**	**6.4%**	**41.0%**	**43.6%**	**7.4%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	25.2	mph	Mean (Average) Speed	25.0	mph
85th Percentile	28.5	mph	10 mph Pace	20.2 - 30.2	mph
95th Percentile	30.8	mph	Percent in Pace	84.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 to 4/24/2019
Site Code: 20

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	0	3	14	7	0	0	0	0	0	0	0	0	0	0	0	**24**
6:00 AM	0	0	0	6	27	5	0	0	0	0	0	0	0	0	0	0	0	**38**
7:00 AM	0	0	0	15	54	45	2	0	0	0	0	0	0	0	0	0	0	**116**
8:00 AM	0	0	1	22	95	32	3	0	0	0	0	0	0	0	0	0	0	**153**
9:00 AM	1	4	5	45	73	21	1	0	0	0	0	0	0	0	0	0	0	**150**
10:00 AM	0	2	7	30	65	19	0	0	0	0	0	0	0	0	0	0	0	**123**
11:00 AM	0	0	8	44	84	21	2	0	0	0	0	0	0	0	0	0	0	**159**
12:00 PM	0	0	5	45	79	23	1	0	0	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	4	18	72	90	11	0	0	0	0	0	0	0	0	0	0	0	**196**
2:00 PM	0	1	5	56	89	19	1	0	0	0	0	0	0	0	0	0	0	**171**
3:00 PM	0	2	13	92	93	19	0	0	0	0	0	0	0	0	0	0	0	**219**
4:00 PM	0	1	9	60	108	25	0	0	0	0	0	0	0	0	0	0	0	**203**
5:00 PM	0	2	7	85	108	15	2	0	0	1	0	0	0	0	0	0	0	**220**
6:00 PM	0	0	8	49	104	25	2	0	0	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	0	5	36	60	18	1	0	0	0	0	0	0	0	0	0	0	**120**
8:00 PM	0	0	5	38	62	15	0	0	0	0	0	0	0	0	0	0	0	**120**
9:00 PM	0	0	0	5	21	9	1	1	0	0	0	0	0	0	0	0	0	**37**
10:00 PM	0	0	1	3	15	9	0	0	0	0	0	0	0	0	0	0	0	**28**
11:00 PM	0	0	1	3	9	3	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**2**	**16**	**99**	**713**	**1,254**	**345**	**18**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,449**
Percent	**0.1%**	**0.7%**	**4.0%**	**29.1%**	**51.2%**	**14.1%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	26.3	mph	Mean (Average) Speed	26.3	mph
85th Percentile	30.0	mph	10 mph Pace	21.6 - 31.6	mph
95th Percentile	32.2	mph	Percent in Pace	84.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Villa & Mission
Date Range: 4/24/2019 - 4/30/2019
Site Code: 20

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	3	9
1:00 AM	6	4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	4	10
2:00 AM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
3:00 AM	0	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	3	3
4:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
5:00 AM	10	24	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	24	34
6:00 AM	31	38	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	38	69
7:00 AM	151	116	267	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	116	267
8:00 AM	**227**	153	**380**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**227**	153	**380**
9:00 AM	211	150	361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	150	361
10:00 AM	154	123	277	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	123	277
11:00 AM	166	**159**	325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	**159**	325
12:00 PM	178	153	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178	153	331
1:00 PM	204	196	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	196	400
2:00 PM	181	171	352	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	171	352
3:00 PM	**219**	219	**438**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**219**	219	**438**
4:00 PM	201	203	404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	201	203	404
5:00 PM	195	**220**	415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	**220**	415
6:00 PM	209	188	397	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	188	397
7:00 PM	132	120	252	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	120	252
8:00 PM	85	120	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	120	205
9:00 PM	49	37	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	37	86
10:00 PM	24	28	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	28	52
11:00 PM	14	16	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	16	30
Total	2,659	2,449	5,108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,659	2,449	5,108
Percent	52%	48%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	227	159	380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	159	380
PM Peak	15:00	17:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	15:00
Vol.	219	220	438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	219	220	438

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Grand Ave, B/W Mission Ave & 2nd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 21

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	22	4,781	651	0	178	20	0	5	5	1	0	0	0	5,663
Percent	0.4%	84.4%	11.5%	0.0%	3.1%	0.4%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	61	3,515	412	4	142	54	0	6	4	3	0	0	1	4,202
Percent	1.5%	83.7%	9.8%	0.1%	3.4%	1.3%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	100%
Total	83	8,296	1,063	4	320	74	0	11	9	4	0	0	1	9,865
Percent	0.8%	84.1%	10.8%	0.0%	3.2%	0.8%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	8	1	0	2	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	25	9	0	6	2	0	0	0	0	0	0	0	**42**
6:00 AM	0	105	28	0	6	0	0	0	1	0	0	0	0	**140**
7:00 AM	3	260	69	0	17	3	0	0	0	0	0	0	0	**352**
8:00 AM	2	355	56	0	13	2	0	1	0	0	0	0	0	**429**
9:00 AM	1	202	33	0	11	0	0	0	1	0	0	0	0	**248**
10:00 AM	1	234	36	0	19	0	0	0	0	0	0	0	0	**290**
11:00 AM	2	301	39	0	17	0	0	0	0	0	0	0	0	**359**
12:00 PM	2	316	49	0	9	1	0	1	0	0	0	0	0	**378**
1:00 PM	2	349	40	0	15	3	0	0	0	0	0	0	0	**409**
2:00 PM	1	374	47	0	9	0	0	0	0	0	0	0	0	**431**
3:00 PM	0	427	50	0	10	2	0	1	1	0	0	0	0	**491**
4:00 PM	1	398	29	0	9	1	0	0	1	0	0	0	0	**439**
5:00 PM	2	393	32	0	7	3	0	1	1	1	0	0	0	**440**
6:00 PM	1	373	47	0	11	3	0	0	0	0	0	0	0	**435**
7:00 PM	0	225	31	0	6	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	159	23	0	9	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	129	16	0	0	0	0	1	0	0	0	0	0	**148**
10:00 PM	1	75	10	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	41	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**22**	**4,781**	**651**	**0**	**178**	**20**	**0**	**5**	**5**	**1**	**0**	**0**	**0**	**5,663**
Percent	**0.4%**	**84.4%**	**11.5%**	**0.0%**	**3.1%**	**0.4%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	13	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	11	1	0	2	0	0	0	1	0	0	0	0	**15**
5:00 AM	1	47	9	0	3	1	0	0	0	0	0	0	0	**61**
6:00 AM	2	77	9	0	8	0	0	0	0	0	0	0	0	**96**
7:00 AM	2	149	28	0	11	0	0	1	0	0	0	0	0	**191**
8:00 AM	2	194	28	1	8	1	0	0	0	0	0	0	0	**234**
9:00 AM	2	182	27	1	10	4	0	1	0	0	0	0	0	**227**
10:00 AM	2	164	27	0	11	4	0	0	0	0	0	0	0	**208**
11:00 AM	8	237	22	0	17	1	0	0	0	0	0	0	0	**285**
12:00 PM	2	288	28	0	6	10	0	0	1	2	0	0	0	**337**
1:00 PM	6	273	33	1	17	2	0	0	0	1	0	0	0	**333**
2:00 PM	6	299	27	0	5	5	0	1	0	0	0	0	1	**344**
3:00 PM	5	281	28	0	7	7	0	1	0	0	0	0	0	**329**
4:00 PM	10	305	20	0	7	5	0	1	1	0	0	0	0	**349**
5:00 PM	6	273	25	0	5	3	0	1	0	0	0	0	0	**313**
6:00 PM	3	223	22	0	5	3	0	0	1	0	0	0	0	**257**
7:00 PM	1	162	34	0	10	4	0	0	0	0	0	0	0	**211**
8:00 PM	0	149	18	0	5	2	0	0	0	0	0	0	0	**174**
9:00 PM	2	97	11	0	4	1	0	0	0	0	0	0	0	**115**
10:00 PM	0	51	8	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	22	6	0	0	1	0	0	0	0	0	0	0	**29**
Total	**61**	**3,515**	**412**	**4**	**142**	**54**	**0**	**6**	**4**	**3**	**0**	**0**	**1**	**4,202**
Percent	**1.5%**	**83.7%**	**9.8%**	**0.1%**	**3.4%**	**1.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	8	1	0	2	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	25	9	0	6	2	0	0	0	0	0	0	0	**42**
6:00 AM	0	105	28	0	6	0	0	0	1	0	0	0	0	**140**
7:00 AM	3	260	69	0	17	3	0	0	0	0	0	0	0	**352**
8:00 AM	2	355	56	0	13	2	0	1	0	0	0	0	0	**429**
9:00 AM	1	202	33	0	11	0	0	0	1	0	0	0	0	**248**
10:00 AM	1	234	36	0	19	0	0	0	0	0	0	0	0	**290**
11:00 AM	2	301	39	0	17	0	0	0	0	0	0	0	0	**359**
12:00 PM	2	316	49	0	9	1	0	1	0	0	0	0	0	**378**
1:00 PM	2	349	40	0	15	3	0	0	0	0	0	0	0	**409**
2:00 PM	1	374	47	0	9	0	0	0	0	0	0	0	0	**431**
3:00 PM	0	427	50	0	10	2	0	1	1	0	0	0	0	**491**
4:00 PM	1	398	29	0	9	1	0	0	1	0	0	0	0	**439**
5:00 PM	2	393	32	0	7	3	0	1	1	1	0	0	0	**440**
6:00 PM	1	373	47	0	11	3	0	0	0	0	0	0	0	**435**
7:00 PM	0	225	31	0	6	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	159	23	0	9	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	129	16	0	0	0	0	1	0	0	0	0	0	**148**
10:00 PM	1	75	10	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	41	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**22**	**4,781**	**651**	**0**	**178**	**20**	**0**	**5**	**5**	**1**	**0**	**0**	**0**	**5,663**
Percent	**0.4%**	**84.4%**	**11.5%**	**0.0%**	**3.1%**	**0.4%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	13	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	11	1	0	2	0	0	0	1	0	0	0	0	**15**
5:00 AM	1	47	9	0	3	1	0	0	0	0	0	0	0	**61**
6:00 AM	2	77	9	0	8	0	0	0	0	0	0	0	0	**96**
7:00 AM	2	149	28	0	11	0	0	1	0	0	0	0	0	**191**
8:00 AM	2	194	28	1	8	1	0	0	0	0	0	0	0	**234**
9:00 AM	2	182	27	1	10	4	0	1	0	0	0	0	0	**227**
10:00 AM	2	164	27	0	11	4	0	0	0	0	0	0	0	**208**
11:00 AM	8	237	22	0	17	1	0	0	0	0	0	0	0	**285**
12:00 PM	2	288	28	0	6	10	0	0	1	2	0	0	0	**337**
1:00 PM	6	273	33	1	17	2	0	0	0	1	0	0	0	**333**
2:00 PM	6	299	27	0	5	5	0	1	0	0	0	0	1	**344**
3:00 PM	5	281	28	0	7	7	0	1	0	0	0	0	0	**329**
4:00 PM	10	305	20	0	7	5	0	1	1	0	0	0	0	**349**
5:00 PM	6	273	25	0	5	3	0	1	0	0	0	0	0	**313**
6:00 PM	3	223	22	0	5	3	0	0	1	0	0	0	0	**257**
7:00 PM	1	162	34	0	10	4	0	0	0	0	0	0	0	**211**
8:00 PM	0	149	18	0	5	2	0	0	0	0	0	0	0	**174**
9:00 PM	2	97	11	0	4	1	0	0	0	0	0	0	0	**115**
10:00 PM	0	51	8	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	22	6	0	0	1	0	0	0	0	0	0	0	**29**
Total	**61**	**3,515**	**412**	**4**	**142**	**54**	**0**	**6**	**4**	**3**	**0**	**0**	**1**	**4,202**
Percent	**1.5%**	**83.7%**	**9.8%**	**0.1%**	**3.4%**	**1.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	8	1	0	2	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	25	9	0	6	2	0	0	0	0	0	0	0	**42**
6:00 AM	0	105	28	0	6	0	0	0	1	0	0	0	0	**140**
7:00 AM	3	260	69	0	17	3	0	0	0	0	0	0	0	**352**
8:00 AM	2	355	56	0	13	2	0	1	0	0	0	0	0	**429**
9:00 AM	1	202	33	0	11	0	0	0	1	0	0	0	0	**248**
10:00 AM	1	234	36	0	19	0	0	0	0	0	0	0	0	**290**
11:00 AM	2	301	39	0	17	0	0	0	0	0	0	0	0	**359**
12:00 PM	2	316	49	0	9	1	0	1	0	0	0	0	0	**378**
1:00 PM	2	349	40	0	15	3	0	0	0	0	0	0	0	**409**
2:00 PM	1	374	47	0	9	0	0	0	0	0	0	0	0	**431**
3:00 PM	0	427	50	0	10	2	0	1	1	0	0	0	0	**491**
4:00 PM	1	398	29	0	9	1	0	0	1	0	0	0	0	**439**
5:00 PM	2	393	32	0	7	3	0	1	1	1	0	0	0	**440**
6:00 PM	1	373	47	0	11	3	0	0	0	0	0	0	0	**435**
7:00 PM	0	225	31	0	6	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	159	23	0	9	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	129	16	0	0	0	0	1	0	0	0	0	0	**148**
10:00 PM	1	75	10	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	0	41	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**22**	**4,781**	**651**	**0**	**178**	**20**	**0**	**5**	**5**	**1**	**0**	**0**	**0**	**5,663**
Percent	**0.4%**	**84.4%**	**11.5%**	**0.0%**	**3.1%**	**0.4%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	13	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	11	1	0	2	0	0	0	1	0	0	0	0	**15**
5:00 AM	1	47	9	0	3	1	0	0	0	0	0	0	0	**61**
6:00 AM	2	77	9	0	8	0	0	0	0	0	0	0	0	**96**
7:00 AM	2	149	28	0	11	0	0	1	0	0	0	0	0	**191**
8:00 AM	2	194	28	1	8	1	0	0	0	0	0	0	0	**234**
9:00 AM	2	182	27	1	10	4	0	1	0	0	0	0	0	**227**
10:00 AM	2	164	27	0	11	4	0	0	0	0	0	0	0	**208**
11:00 AM	8	237	22	0	17	1	0	0	0	0	0	0	0	**285**
12:00 PM	2	288	28	0	6	10	0	0	1	2	0	0	0	**337**
1:00 PM	6	273	33	1	17	2	0	0	0	1	0	0	0	**333**
2:00 PM	6	299	27	0	5	5	0	1	0	0	0	0	1	**344**
3:00 PM	5	281	28	0	7	7	0	1	0	0	0	0	0	**329**
4:00 PM	10	305	20	0	7	5	0	1	1	0	0	0	0	**349**
5:00 PM	6	273	25	0	5	3	0	1	0	0	0	0	0	**313**
6:00 PM	3	223	22	0	5	3	0	0	1	0	0	0	0	**257**
7:00 PM	1	162	34	0	10	4	0	0	0	0	0	0	0	**211**
8:00 PM	0	149	18	0	5	2	0	0	0	0	0	0	0	**174**
9:00 PM	2	97	11	0	4	1	0	0	0	0	0	0	0	**115**
10:00 PM	0	51	8	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	22	6	0	0	1	0	0	0	0	0	0	0	**29**
Total	**61**	**3,515**	**412**	**4**	**142**	**54**	**0**	**6**	**4**	**3**	**0**	**0**	**1**	**4,202**
Percent	**1.5%**	**83.7%**	**9.8%**	**0.1%**	**3.4%**	**1.3%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Grand Ave, B/W Mission Ave & 2nd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 21

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	379	1,388	1,887	1,477	454	71	2	1	0	3	0	0	0	0	0	0	1	5,663
Percent	6.7%	24.5%	33.3%	26.1%	8.0%	1.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	471	662	1,329	1,326	364	44	5	0	0	0	0	0	0	0	1	0	0	4,202
Percent	11.2%	15.8%	31.6%	31.6%	8.7%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	850	2,050	3,216	2,803	818	115	7	1	0	3	0	0	0	0	1	0	1	9,865
Percent	8.6%	20.8%	32.6%	28.4%	8.3%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	17.9	mph	Mean (Average) Speed	17.9	mph
85th Percentile	23.5	mph	10 mph Pace	12.9 - 22.9	mph
95th Percentile	26.8	mph	Percent in Pace	63.6	%
Southbound			**Southbound**		
50th Percentile (Median)	18.9	mph	Mean (Average) Speed	18.1	mph
85th Percentile	23.8	mph	10 mph Pace	13.5 - 23.5	mph
95th Percentile	26.6	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	4	10	2	0	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	0	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	7	3	1	0	0	0	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	2	13	19	7	1	0	0	0	0	0	0	0	0	0	0	0	**42**
6:00 AM	0	10	46	62	20	2	0	0	0	0	0	0	0	0	0	0	0	**140**
7:00 AM	19	94	117	86	30	6	0	0	0	0	0	0	0	0	0	0	0	**352**
8:00 AM	46	138	139	72	27	4	0	0	0	3	0	0	0	0	0	0	0	**429**
9:00 AM	7	44	93	78	24	2	0	0	0	0	0	0	0	0	0	0	0	**248**
10:00 AM	20	84	99	67	18	1	1	0	0	0	0	0	0	0	0	0	0	**290**
11:00 AM	31	108	108	82	26	3	1	0	0	0	0	0	0	0	0	0	0	**359**
12:00 PM	37	94	122	102	18	5	0	0	0	0	0	0	0	0	0	0	0	**378**
1:00 PM	36	118	137	89	29	0	0	0	0	0	0	0	0	0	0	0	0	**409**
2:00 PM	11	116	151	113	37	3	0	0	0	0	0	0	0	0	0	0	0	**431**
3:00 PM	57	145	158	103	26	2	0	0	0	0	0	0	0	0	0	0	0	**491**
4:00 PM	33	145	160	76	19	6	0	0	0	0	0	0	0	0	0	0	0	**439**
5:00 PM	39	102	141	123	26	9	0	0	0	0	0	0	0	0	0	0	0	**440**
6:00 PM	31	110	147	96	45	5	0	0	0	0	0	0	0	0	0	0	1	**435**
7:00 PM	7	31	101	91	30	2	0	0	0	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	18	74	78	17	4	0	0	0	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	14	46	61	18	7	0	0	0	0	0	0	0	0	0	0	0	**148**
10:00 PM	1	6	20	37	17	5	0	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	1	6	7	17	11	1	0	1	0	0	0	0	0	0	0	0	0	**44**
Total	**379**	**1,388**	**1,887**	**1,477**	**454**	**71**	**2**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5,663**
Percent	**6.7%**	**24.5%**	**33.3%**	**26.1%**	**8.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	17.9	mph	Mean (Average) Speed	17.9	mph
85th Percentile	23.5	mph	10 mph Pace	12.9 - 22.9	mph
95th Percentile	26.8	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	2	9	2	0	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	2	6	0	2	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	1	0	8	4	2	0	0	0	0	0	0	0	0	0	0	0	**15**
5:00 AM	2	0	9	19	23	8	0	0	0	0	0	0	0	0	0	0	0	**61**
6:00 AM	2	5	12	50	21	5	1	0	0	0	0	0	0	0	0	0	0	**96**
7:00 AM	6	22	61	78	20	3	1	0	0	0	0	0	0	0	0	0	0	**191**
8:00 AM	15	42	97	64	14	2	0	0	0	0	0	0	0	0	0	0	0	**234**
9:00 AM	9	20	68	107	21	2	0	0	0	0	0	0	0	0	0	0	0	**227**
10:00 AM	8	13	88	81	15	3	0	0	0	0	0	0	0	0	0	0	0	**208**
11:00 AM	20	37	113	89	25	1	0	0	0	0	0	0	0	0	0	0	0	**285**
12:00 PM	29	57	120	112	19	0	0	0	0	0	0	0	0	0	0	0	0	**337**
1:00 PM	27	68	143	70	22	3	0	0	0	0	0	0	0	0	0	0	0	**333**
2:00 PM	33	68	139	89	15	0	0	0	0	0	0	0	0	0	0	0	0	**344**
3:00 PM	36	90	100	90	10	2	1	0	0	0	0	0	0	0	0	0	0	**329**
4:00 PM	119	123	81	23	3	0	0	0	0	0	0	0	0	0	0	0	0	**349**
5:00 PM	127	42	61	69	12	0	1	0	0	0	0	0	0	0	1	0	0	**313**
6:00 PM	18	54	70	88	24	2	1	0	0	0	0	0	0	0	0	0	0	**257**
7:00 PM	13	6	46	102	39	5	0	0	0	0	0	0	0	0	0	0	0	**211**
8:00 PM	4	7	69	67	27	0	0	0	0	0	0	0	0	0	0	0	0	**174**
9:00 PM	2	4	28	58	22	1	0	0	0	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	0	9	32	15	3	0	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	2	9	10	8	0	0	0	0	0	0	0	0	0	0	0	0	**29**
Total	**471**	**662**	**1,329**	**1,326**	**364**	**44**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4,202**
Percent	**11.2%**	**15.8%**	**31.6%**	**31.6%**	**8.7%**	**1.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	18.9	mph	Mean (Average) Speed	18.1	mph
85th Percentile	23.8	mph	10 mph Pace	13.5 - 23.5	mph
95th Percentile	26.6	mph	Percent in Pace	63.61	%

Project Manager: (415) 310-6469
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Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	4	10	2	0	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	0	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	7	3	1	0	0	0	0	0	0	0	0	0	0	0	**11**
5:00 AM	0	2	13	19	7	1	0	0	0	0	0	0	0	0	0	0	0	**42**
6:00 AM	0	10	46	62	20	2	0	0	0	0	0	0	0	0	0	0	0	**140**
7:00 AM	19	94	117	86	30	6	0	0	0	0	0	0	0	0	0	0	0	**352**
8:00 AM	46	138	139	72	27	4	0	0	0	3	0	0	0	0	0	0	0	**429**
9:00 AM	7	44	93	78	24	2	0	0	0	0	0	0	0	0	0	0	0	**248**
10:00 AM	20	84	99	67	18	1	1	0	0	0	0	0	0	0	0	0	0	**290**
11:00 AM	31	108	108	82	26	3	1	0	0	0	0	0	0	0	0	0	0	**359**
12:00 PM	37	94	122	102	18	5	0	0	0	0	0	0	0	0	0	0	0	**378**
1:00 PM	36	118	137	89	29	0	0	0	0	0	0	0	0	0	0	0	0	**409**
2:00 PM	11	116	151	113	37	3	0	0	0	0	0	0	0	0	0	0	0	**431**
3:00 PM	57	145	158	103	26	2	0	0	0	0	0	0	0	0	0	0	0	**491**
4:00 PM	33	145	160	76	19	6	0	0	0	0	0	0	0	0	0	0	0	**439**
5:00 PM	39	102	141	123	26	9	0	0	0	0	0	0	0	0	0	0	0	**440**
6:00 PM	31	110	147	96	45	5	0	0	0	0	0	0	0	0	0	0	1	**435**
7:00 PM	7	31	101	91	30	2	0	0	0	0	0	0	0	0	0	0	0	**262**
8:00 PM	1	18	74	78	17	4	0	0	0	0	0	0	0	0	0	0	0	**192**
9:00 PM	2	14	46	61	18	7	0	0	0	0	0	0	0	0	0	0	0	**148**
10:00 PM	1	6	20	37	17	5	0	0	0	0	0	0	0	0	0	0	0	**86**
11:00 PM	1	6	7	17	11	1	0	1	0	0	0	0	0	0	0	0	0	**44**
Total	**379**	**1,388**	**1,887**	**1,477**	**454**	**71**	**2**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5,663**
Percent	**6.7%**	**24.5%**	**33.3%**	**26.1%**	**8.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	17.9	mph	Mean (Average) Speed	17.9	mph
85th Percentile	23.5	mph	10 mph Pace	12.9 - 22.9	mph
95th Percentile	26.8	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
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Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 21

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	2	9	2	0	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	2	6	0	2	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	1	0	8	4	2	0	0	0	0	0	0	0	0	0	0	0	**15**
5:00 AM	2	0	9	19	23	8	0	0	0	0	0	0	0	0	0	0	0	**61**
6:00 AM	2	5	12	50	21	5	1	0	0	0	0	0	0	0	0	0	0	**96**
7:00 AM	6	22	61	78	20	3	1	0	0	0	0	0	0	0	0	0	0	**191**
8:00 AM	15	42	97	64	14	2	0	0	0	0	0	0	0	0	0	0	0	**234**
9:00 AM	9	20	68	107	21	2	0	0	0	0	0	0	0	0	0	0	0	**227**
10:00 AM	8	13	88	81	15	3	0	0	0	0	0	0	0	0	0	0	0	**208**
11:00 AM	20	37	113	89	25	1	0	0	0	0	0	0	0	0	0	0	0	**285**
12:00 PM	29	57	120	112	19	0	0	0	0	0	0	0	0	0	0	0	0	**337**
1:00 PM	27	68	143	70	22	3	0	0	0	0	0	0	0	0	0	0	0	**333**
2:00 PM	33	68	139	89	15	0	0	0	0	0	0	0	0	0	0	0	0	**344**
3:00 PM	36	90	100	90	10	2	1	0	0	0	0	0	0	0	0	0	0	**329**
4:00 PM	119	123	81	23	3	0	0	0	0	0	0	0	0	0	0	0	0	**349**
5:00 PM	127	42	61	69	12	0	1	0	0	0	0	0	0	0	1	0	0	**313**
6:00 PM	18	54	70	88	24	2	1	0	0	0	0	0	0	0	0	0	0	**257**
7:00 PM	13	6	46	102	39	5	0	0	0	0	0	0	0	0	0	0	0	**211**
8:00 PM	4	7	69	67	27	0	0	0	0	0	0	0	0	0	0	0	0	**174**
9:00 PM	2	4	28	58	22	1	0	0	0	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	0	9	32	15	3	0	0	0	0	0	0	0	0	0	0	0	**59**
11:00 PM	0	2	9	10	8	0	0	0	0	0	0	0	0	0	0	0	0	**29**
Total	**471**	**662**	**1,329**	**1,326**	**364**	**44**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4,202**
Percent	**11.2%**	**15.8%**	**31.6%**	**31.6%**	**8.7%**	**1.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	18.9	mph	Mean (Average) Speed	18.1	mph
85th Percentile	23.8	mph	10 mph Pace	13.5 - 23.5	mph
95th Percentile	26.6	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Grand Ave, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 21

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	16	14	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	14	30
1:00 AM	6	10	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	10	16
2:00 AM	8	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	5	13
3:00 AM	7	6	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	6	13
4:00 AM	11	15	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	15	26
5:00 AM	42	61	103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	61	103
6:00 AM	140	96	236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	96	236
7:00 AM	352	191	543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	352	191	543
8:00 AM	**429**	234	**663**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**429**	234	**663**
9:00 AM	248	227	475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248	227	475
10:00 AM	290	208	498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	290	208	498
11:00 AM	359	**285**	644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	359	**285**	644
12:00 PM	378	337	715	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	378	337	715
1:00 PM	409	333	742	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	409	333	742
2:00 PM	431	344	775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	431	344	775
3:00 PM	**491**	329	**820**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**491**	329	**820**
4:00 PM	439	**349**	788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	439	**349**	788
5:00 PM	440	313	753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	440	313	753
6:00 PM	435	257	692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	435	257	692
7:00 PM	262	211	473	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262	211	473
8:00 PM	192	174	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	174	366
9:00 PM	148	115	263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	115	263
10:00 PM	86	59	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	59	145
11:00 PM	44	29	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	29	73
Total	5,663	4,202	9,865	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,663	4,202	9,865
Percent	57%	43%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57%	43%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	429	285	663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	429	285	663
PM Peak	15:00	16:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:00	15:00
Vol.	491	349	820	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	491	349	820

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Hetherton St, B/W Mission Ave & 2nd St

Count Direction: Southbound / Northbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 22

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Southbound	410	11,368	2,341	23	380	281	0	27	67	152	1	0	226	15,276
Percent	2.7%	74.4%	15.3%	0.2%	2.5%	1.8%	0.0%	0.2%	0.4%	1.0%	0.0%	0.0%	1.5%	100%
Northbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	410	11,368	2,341	23	380	281	0	27	67	152	1	0	226	15,276
Percent	2.7%	74.4%	15.3%	0.2%	2.5%	1.8%	0.0%	0.2%	0.4%	1.0%	0.0%	0.0%	1.5%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	7	0	1	1	0	0	0	0	0	0	0	**73**
1:00 AM	0	25	9	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	17	4	0	1	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	28	3	2	3	0	0	0	1	0	0	0	0	**37**
4:00 AM	1	59	17	4	3	3	0	1	0	1	0	0	0	**89**
5:00 AM	7	169	55	1	27	7	0	1	3	3	0	0	2	**275**
6:00 AM	11	470	135	0	43	12	0	3	3	7	0	0	14	**698**
7:00 AM	31	701	153	1	35	20	0	1	2	10	0	0	9	**963**
8:00 AM	37	729	170	0	23	21	0	2	5	8	0	0	15	**1,010**
9:00 AM	38	630	174	1	26	17	0	3	8	14	1	0	25	**937**
10:00 AM	35	607	189	1	26	33	0	1	7	13	0	0	23	**935**
11:00 AM	34	698	181	3	18	20	0	0	6	17	0	0	24	**1,001**
12:00 PM	40	700	166	2	17	26	0	0	5	17	0	0	17	**990**
1:00 PM	29	721	156	0	20	22	0	4	5	14	0	0	19	**990**
2:00 PM	28	705	144	0	13	26	0	3	2	7	0	0	14	**942**
3:00 PM	33	843	117	1	21	21	0	1	1	4	0	0	14	**1,056**
4:00 PM	22	869	130	0	15	15	0	1	2	8	0	0	19	**1,081**
5:00 PM	27	900	142	1	13	8	0	0	6	10	0	0	13	**1,120**
6:00 PM	18	709	107	1	18	10	0	0	5	9	0	0	9	**886**
7:00 PM	9	594	81	1	15	6	0	2	0	7	0	0	3	**718**
8:00 PM	7	415	92	2	15	5	0	2	4	2	0	0	6	**550**
9:00 PM	1	347	56	1	11	3	0	0	2	1	0	0	0	**422**
10:00 PM	2	235	33	1	10	4	0	1	0	0	0	0	0	**286**
11:00 PM	0	133	20	0	6	1	0	1	0	0	0	0	0	**161**
Total	**410**	**11,368**	**2,341**	**23**	**380**	**281**	**0**	**27**	**67**	**152**	**1**	**0**	**226**	**15,276**
Percent	**2.7%**	**74.4%**	**15.3%**	**0.2%**	**2.5%**	**1.8%**	**0.0%**	**0.2%**	**0.4%**	**1.0%**	**0.0%**	**0.0%**	**1.5%**	

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	7	0	1	1	0	0	0	0	0	0	0	**73**
1:00 AM	0	25	9	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	17	4	0	1	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	28	3	2	3	0	0	0	1	0	0	0	0	**37**
4:00 AM	1	59	17	4	3	3	0	1	0	1	0	0	0	**89**
5:00 AM	7	169	55	1	27	7	0	1	3	3	0	0	2	**275**
6:00 AM	11	470	135	0	43	12	0	3	3	7	0	0	14	**698**
7:00 AM	31	701	153	1	35	20	0	1	2	10	0	0	9	**963**
8:00 AM	37	729	170	0	23	21	0	2	5	8	0	0	15	**1,010**
9:00 AM	38	630	174	1	26	17	0	3	8	14	1	0	25	**937**
10:00 AM	35	607	189	1	26	33	0	1	7	13	0	0	23	**935**
11:00 AM	34	698	181	3	18	20	0	0	6	17	0	0	24	**1,001**
12:00 PM	40	700	166	2	17	26	0	0	5	17	0	0	17	**990**
1:00 PM	29	721	156	0	20	22	0	4	5	14	0	0	19	**990**
2:00 PM	28	705	144	0	13	26	0	3	2	7	0	0	14	**942**
3:00 PM	33	843	117	1	21	21	0	1	1	4	0	0	14	**1,056**
4:00 PM	22	869	130	0	15	15	0	1	2	8	0	0	19	**1,081**
5:00 PM	27	900	142	1	13	8	0	0	6	10	0	0	13	**1,120**
6:00 PM	18	709	107	1	18	10	0	0	5	9	0	0	9	**886**
7:00 PM	9	594	81	1	15	6	0	2	0	7	0	0	3	**718**
8:00 PM	7	415	92	2	15	5	0	2	4	2	0	0	6	**550**
9:00 PM	1	347	56	1	11	3	0	0	2	1	0	0	0	**422**
10:00 PM	2	235	33	1	10	4	0	1	0	0	0	0	0	**286**
11:00 PM	0	133	20	0	6	1	0	1	0	0	0	0	0	**161**
Total	**410**	**11,368**	**2,341**	**23**	**380**	**281**	**0**	**27**	**67**	**152**	**1**	**0**	**226**	**15,276**
Percent	**2.7%**	**74.4%**	**15.3%**	**0.2%**	**2.5%**	**1.8%**	**0.0%**	**0.2%**	**0.4%**	**1.0%**	**0.0%**	**0.0%**	**1.5%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	7	0	1	1	0	0	0	0	0	0	0	**73**
1:00 AM	0	25	9	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	17	4	0	1	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	28	3	2	3	0	0	0	1	0	0	0	0	**37**
4:00 AM	1	59	17	4	3	3	0	1	0	1	0	0	0	**89**
5:00 AM	7	169	55	1	27	7	0	1	3	3	0	0	2	**275**
6:00 AM	11	470	135	0	43	12	0	3	3	7	0	0	14	**698**
7:00 AM	31	701	153	1	35	20	0	1	2	10	0	0	9	**963**
8:00 AM	37	729	170	0	23	21	0	2	5	8	0	0	15	**1,010**
9:00 AM	38	630	174	1	26	17	0	3	8	14	1	0	25	**937**
10:00 AM	35	607	189	1	26	33	0	1	7	13	0	0	23	**935**
11:00 AM	34	698	181	3	18	20	0	0	6	17	0	0	24	**1,001**
12:00 PM	40	700	166	2	17	26	0	0	5	17	0	0	17	**990**
1:00 PM	29	721	156	0	20	22	0	4	5	14	0	0	19	**990**
2:00 PM	28	705	144	0	13	26	0	3	2	7	0	0	14	**942**
3:00 PM	33	843	117	1	21	21	0	1	1	4	0	0	14	**1,056**
4:00 PM	22	869	130	0	15	15	0	1	2	8	0	0	19	**1,081**
5:00 PM	27	900	142	1	13	8	0	0	6	10	0	0	13	**1,120**
6:00 PM	18	709	107	1	18	10	0	0	5	9	0	0	9	**886**
7:00 PM	9	594	81	1	15	6	0	2	0	7	0	0	3	**718**
8:00 PM	7	415	92	2	15	5	0	2	4	2	0	0	6	**550**
9:00 PM	1	347	56	1	11	3	0	0	2	1	0	0	0	**422**
10:00 PM	2	235	33	1	10	4	0	1	0	0	0	0	0	**286**
11:00 PM	0	133	20	0	6	1	0	1	0	0	0	0	0	**161**
Total	**410**	**11,368**	**2,341**	**23**	**380**	**281**	**0**	**27**	**67**	**152**	**1**	**0**	**226**	**15,276**
Percent	**2.7%**	**74.4%**	**15.3%**	**0.2%**	**2.5%**	**1.8%**	**0.0%**	**0.2%**	**0.4%**	**1.0%**	**0.0%**	**0.0%**	**1.5%**	

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Vehicle Speed Report Summary

Location: Hetherton St, B/W Mission Ave & 2nd St

Count Direction: Southbound / Northbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 22

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Southbound	1,279	2,495	4,226	4,504	1,958	627	143	39	4	1	0	0	0	0	0	0	0	15,276
Percent	8.4%	16.3%	27.7%	29.5%	12.8%	4.1%	0.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Northbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1,279	2,495	4,226	4,504	1,958	627	143	39	4	1	0	0	0	0	0	0	0	15,276
Percent	8.4%	16.3%	27.7%	29.5%	12.8%	4.1%	0.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Southbound			**Southbound**		
50th Percentile (Median)	19.7	mph	Mean (Average) Speed	19.4	mph
85th Percentile	25.8	mph	10 mph Pace	15.4 - 25.4	mph
95th Percentile	30.2	mph	Percent in Pace	57.2	%
Northbound			**Northbound**		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	13	44	14	2	0	0	0	0	0	0	0	0	0	0	0	**73**
1:00 AM	0	0	11	10	9	3	1	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	0	0	15	4	2	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	0	2	15	12	5	3	0	0	0	0	0	0	0	0	0	0	**37**
4:00 AM	0	1	14	30	27	16	0	1	0	0	0	0	0	0	0	0	0	**89**
5:00 AM	4	18	42	116	71	19	2	3	0	0	0	0	0	0	0	0	0	**275**
6:00 AM	19	79	137	230	170	43	16	3	1	0	0	0	0	0	0	0	0	**698**
7:00 AM	169	245	278	172	76	19	4	0	0	0	0	0	0	0	0	0	0	**963**
8:00 AM	158	249	238	215	109	37	4	0	0	0	0	0	0	0	0	0	0	**1,010**
9:00 AM	46	176	276	275	114	37	11	2	0	0	0	0	0	0	0	0	0	**937**
10:00 AM	59	170	305	274	86	29	10	1	1	0	0	0	0	0	0	0	0	**935**
11:00 AM	82	166	363	270	94	15	11	0	0	0	0	0	0	0	0	0	0	**1,001**
12:00 PM	87	251	317	248	60	24	1	2	0	0	0	0	0	0	0	0	0	**990**
1:00 PM	96	147	283	301	93	50	16	3	1	0	0	0	0	0	0	0	0	**990**
2:00 PM	66	178	296	242	111	40	4	5	0	0	0	0	0	0	0	0	0	**942**
3:00 PM	167	186	339	271	68	19	5	1	0	0	0	0	0	0	0	0	0	**1,056**
4:00 PM	129	176	349	319	76	28	3	1	0	0	0	0	0	0	0	0	0	**1,081**
5:00 PM	103	263	349	287	86	23	6	3	0	0	0	0	0	0	0	0	0	**1,120**
6:00 PM	74	132	264	276	100	35	3	2	0	0	0	0	0	0	0	0	0	**886**
7:00 PM	19	35	141	290	157	62	10	4	0	0	0	0	0	0	0	0	0	**718**
8:00 PM	1	12	111	240	134	42	8	0	1	1	0	0	0	0	0	0	0	**550**
9:00 PM	0	6	56	184	128	32	9	7	0	0	0	0	0	0	0	0	0	**422**
10:00 PM	0	2	23	122	99	29	10	1	0	0	0	0	0	0	0	0	0	**286**
11:00 PM	0	3	19	58	60	16	5	0	0	0	0	0	0	0	0	0	0	**161**
Total	**1,279**	**2,495**	**4,226**	**4,504**	**1,958**	**627**	**143**	**39**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15,276**
Percent	**8.4%**	**16.3%**	**27.7%**	**29.5%**	**12.8%**	**4.1%**	**0.9%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	19.7	mph	Mean (Average) Speed	19.4	mph
85th Percentile	25.8	mph	10 mph Pace	15.4 - 25.4	mph
95th Percentile	30.2	mph	Percent in Pace	57.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	13	44	14	2	0	0	0	0	0	0	0	0	0	0	0	**73**
1:00 AM	0	0	11	10	9	3	1	0	0	0	0	0	0	0	0	0	0	**34**
2:00 AM	0	0	0	15	4	2	1	0	0	0	0	0	0	0	0	0	0	**22**
3:00 AM	0	0	2	15	12	5	3	0	0	0	0	0	0	0	0	0	0	**37**
4:00 AM	0	1	14	30	27	16	0	1	0	0	0	0	0	0	0	0	0	**89**
5:00 AM	4	18	42	116	71	19	2	3	0	0	0	0	0	0	0	0	0	**275**
6:00 AM	19	79	137	230	170	43	16	3	1	0	0	0	0	0	0	0	0	**698**
7:00 AM	169	245	278	172	76	19	4	0	0	0	0	0	0	0	0	0	0	**963**
8:00 AM	158	249	238	215	109	37	4	0	0	0	0	0	0	0	0	0	0	**1,010**
9:00 AM	46	176	276	275	114	37	11	2	0	0	0	0	0	0	0	0	0	**937**
10:00 AM	59	170	305	274	86	29	10	1	1	0	0	0	0	0	0	0	0	**935**
11:00 AM	82	166	363	270	94	15	11	0	0	0	0	0	0	0	0	0	0	**1,001**
12:00 PM	87	251	317	248	60	24	1	2	0	0	0	0	0	0	0	0	0	**990**
1:00 PM	96	147	283	301	93	50	16	3	1	0	0	0	0	0	0	0	0	**990**
2:00 PM	66	178	296	242	111	40	4	5	0	0	0	0	0	0	0	0	0	**942**
3:00 PM	167	186	339	271	68	19	5	1	0	0	0	0	0	0	0	0	0	**1,056**
4:00 PM	129	176	349	319	76	28	3	1	0	0	0	0	0	0	0	0	0	**1,081**
5:00 PM	103	263	349	287	86	23	6	3	0	0	0	0	0	0	0	0	0	**1,120**
6:00 PM	74	132	264	276	100	35	3	2	0	0	0	0	0	0	0	0	0	**886**
7:00 PM	19	35	141	290	157	62	10	4	0	0	0	0	0	0	0	0	0	**718**
8:00 PM	1	12	111	240	134	42	8	0	1	1	0	0	0	0	0	0	0	**550**
9:00 PM	0	6	56	184	128	32	9	7	0	0	0	0	0	0	0	0	0	**422**
10:00 PM	0	2	23	122	99	29	10	1	0	0	0	0	0	0	0	0	0	**286**
11:00 PM	0	3	19	58	60	16	5	0	0	0	0	0	0	0	0	0	0	**161**
Total	**1,279**	**2,495**	**4,226**	**4,504**	**1,958**	**627**	**143**	**39**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15,276**
Percent	**8.4%**	**16.3%**	**27.7%**	**29.5%**	**12.8%**	**4.1%**	**0.9%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	19.7	mph	Mean (Average) Speed	19.4	mph
85th Percentile	25.8	mph	10 mph Pace	15.4 - 25.4	mph
95th Percentile	30.2	mph	Percent in Pace	57.2	%

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 22

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Location: Hetherton St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 22

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total	SB	NB	Total
12:00 AM	73	0	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	0	73
1:00 AM	34	0	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	0	34
2:00 AM	22	0	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	0	22
3:00 AM	37	0	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	0	37
4:00 AM	89	0	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	0	89
5:00 AM	275	0	275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	0	275
6:00 AM	698	0	698	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	698	0	698
7:00 AM	963	0	963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	963	0	963
8:00 AM	**1,010**	0	**1,010**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,010**	0	**1,010**
9:00 AM	937	0	937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	937	0	937
10:00 AM	935	0	935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	935	0	935
11:00 AM	1,001	0	1,001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,001	0	1,001
12:00 PM	990	0	990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	990	0	990
1:00 PM	990	0	990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	990	0	990
2:00 PM	942	0	942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	942	0	942
3:00 PM	1,056	0	1,056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,056	0	1,056
4:00 PM	1,081	0	1,081	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,081	0	1,081
5:00 PM	**1,120**	0	**1,120**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,120**	0	**1,120**
6:00 PM	886	0	886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	886	0	886
7:00 PM	718	0	718	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	718	0	718
8:00 PM	550	0	550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	550	0	550
9:00 PM	422	0	422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	422	0	422
10:00 PM	286	0	286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	286	0	286
11:00 PM	161	0	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	0	161
Total	15,276	-	15,276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,276	-	15,276
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	08:00	-	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	-	08:00
Vol.	1,010	-	1,010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,010	-	1,010
PM Peak	17:00	-	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	-	17:00
Vol.	1,120	-	1,120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,120	-	1,120

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Irwin St, B/W Mission Ave & 2nd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 23

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	80	12,435	2,792	36	552	147	0	26	102	153	5	2	125	16,455
Percent	0.5%	75.6%	17.0%	0.2%	3.4%	0.9%	0.0%	0.2%	0.6%	0.9%	0.0%	0.0%	0.8%	100%
Southbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	80	12,435	2,792	36	552	147	0	26	102	153	5	2	125	16,455
Percent	0.5%	75.6%	17.0%	0.2%	3.4%	0.9%	0.0%	0.2%	0.6%	0.9%	0.0%	0.0%	0.8%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	22	5	8	2	0	1	0	0	0	0	0	**102**
1:00 AM	0	34	8	0	5	3	0	1	0	0	0	0	0	**51**
2:00 AM	1	24	11	1	2	3	0	0	0	0	0	0	0	**42**
3:00 AM	0	22	8	1	3	4	0	0	0	0	0	0	0	**38**
4:00 AM	1	20	10	0	8	0	0	0	2	0	0	0	0	**41**
5:00 AM	3	128	30	0	15	9	0	0	0	0	0	0	0	**185**
6:00 AM	3	303	96	1	32	2	0	2	4	2	0	0	4	**449**
7:00 AM	1	657	164	3	35	8	0	2	5	12	2	0	8	**897**
8:00 AM	9	761	190	6	43	13	0	1	11	7	0	0	7	**1,048**
9:00 AM	3	770	196	2	33	7	0	2	9	6	0	0	5	**1,033**
10:00 AM	3	664	171	2	36	7	0	0	3	15	0	1	10	**912**
11:00 AM	3	743	172	1	42	4	0	2	11	16	0	0	9	**1,003**
12:00 PM	5	755	198	2	32	22	0	2	7	17	2	0	14	**1,056**
1:00 PM	2	841	203	2	33	10	0	0	6	12	0	0	12	**1,121**
2:00 PM	6	812	186	1	43	19	0	2	8	9	0	0	8	**1,094**
3:00 PM	6	802	194	3	41	7	0	4	7	12	1	0	14	**1,091**
4:00 PM	6	920	207	2	40	6	0	3	4	7	0	0	7	**1,202**
5:00 PM	8	928	186	0	23	8	0	1	8	10	0	0	9	**1,181**
6:00 PM	6	980	162	0	21	4	0	1	4	9	0	1	6	**1,194**
7:00 PM	6	696	113	0	20	2	0	0	4	6	0	0	6	**853**
8:00 PM	1	608	94	3	11	2	0	1	6	4	0	0	4	**734**
9:00 PM	2	461	88	0	12	2	0	0	1	3	0	0	1	**570**
10:00 PM	3	298	56	0	8	2	0	1	2	6	0	0	1	**377**
11:00 PM	2	144	27	1	6	1	0	0	0	0	0	0	0	**181**
Total	**80**	**12,435**	**2,792**	**36**	**552**	**147**	**0**	**26**	**102**	**153**	**5**	**2**	**125**	**16,455**
Percent	**0.5%**	**75.6%**	**17.0%**	**0.2%**	**3.4%**	**0.9%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**0.0%**	**0.0%**	**0.8%**	

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	22	5	8	2	0	1	0	0	0	0	0	**102**
1:00 AM	0	34	8	0	5	3	0	1	0	0	0	0	0	**51**
2:00 AM	1	24	11	1	2	3	0	0	0	0	0	0	0	**42**
3:00 AM	0	22	8	1	3	4	0	0	0	0	0	0	0	**38**
4:00 AM	1	20	10	0	8	0	0	0	2	0	0	0	0	**41**
5:00 AM	3	128	30	0	15	9	0	0	0	0	0	0	0	**185**
6:00 AM	3	303	96	1	32	2	0	2	4	2	0	0	4	**449**
7:00 AM	1	657	164	3	35	8	0	2	5	12	2	0	8	**897**
8:00 AM	9	761	190	6	43	13	0	1	11	7	0	0	7	**1,048**
9:00 AM	3	770	196	2	33	7	0	2	9	6	0	0	5	**1,033**
10:00 AM	3	664	171	2	36	7	0	0	3	15	0	1	10	**912**
11:00 AM	3	743	172	1	42	4	0	2	11	16	0	0	9	**1,003**
12:00 PM	5	755	198	2	32	22	0	2	7	17	2	0	14	**1,056**
1:00 PM	2	841	203	2	33	10	0	0	6	12	0	0	12	**1,121**
2:00 PM	6	812	186	1	43	19	0	2	8	9	0	0	8	**1,094**
3:00 PM	6	802	194	3	41	7	0	4	7	12	1	0	14	**1,091**
4:00 PM	6	920	207	2	40	6	0	3	4	7	0	0	7	**1,202**
5:00 PM	8	928	186	0	23	8	0	1	8	10	0	0	9	**1,181**
6:00 PM	6	980	162	0	21	4	0	1	4	9	0	1	6	**1,194**
7:00 PM	6	696	113	0	20	2	0	0	4	6	0	0	6	**853**
8:00 PM	1	608	94	3	11	2	0	1	6	4	0	0	4	**734**
9:00 PM	2	461	88	0	12	2	0	0	1	3	0	0	1	**570**
10:00 PM	3	298	56	0	8	2	0	1	2	6	0	0	1	**377**
11:00 PM	2	144	27	1	6	1	0	0	0	0	0	0	0	**181**
Total	**80**	**12,435**	**2,792**	**36**	**552**	**147**	**0**	**26**	**102**	**153**	**5**	**2**	**125**	**16,455**
Percent	**0.5%**	**75.6%**	**17.0%**	**0.2%**	**3.4%**	**0.9%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**0.0%**	**0.0%**	**0.8%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Note: Average only condsidered on days with 24-hours of data.

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	64	22	5	8	2	0	1	0	0	0	0	0	**102**
1:00 AM	0	34	8	0	5	3	0	1	0	0	0	0	0	**51**
2:00 AM	1	24	11	1	2	3	0	0	0	0	0	0	0	**42**
3:00 AM	0	22	8	1	3	4	0	0	0	0	0	0	0	**38**
4:00 AM	1	20	10	0	8	0	0	0	2	0	0	0	0	**41**
5:00 AM	3	128	30	0	15	9	0	0	0	0	0	0	0	**185**
6:00 AM	3	303	96	1	32	2	0	2	4	2	0	0	4	**449**
7:00 AM	1	657	164	3	35	8	0	2	5	12	2	0	8	**897**
8:00 AM	9	761	190	6	43	13	0	1	11	7	0	0	7	**1,048**
9:00 AM	3	770	196	2	33	7	0	2	9	6	0	0	5	**1,033**
10:00 AM	3	664	171	2	36	7	0	0	3	15	0	1	10	**912**
11:00 AM	3	743	172	1	42	4	0	2	11	16	0	0	9	**1,003**
12:00 PM	5	755	198	2	32	22	0	2	7	17	2	0	14	**1,056**
1:00 PM	2	841	203	2	33	10	0	0	6	12	0	0	12	**1,121**
2:00 PM	6	812	186	1	43	19	0	2	8	9	0	0	8	**1,094**
3:00 PM	6	802	194	3	41	7	0	4	7	12	1	0	14	**1,091**
4:00 PM	6	920	207	2	40	6	0	3	4	7	0	0	7	**1,202**
5:00 PM	8	928	186	0	23	8	0	1	8	10	0	0	9	**1,181**
6:00 PM	6	980	162	0	21	4	0	1	4	9	0	1	6	**1,194**
7:00 PM	6	696	113	0	20	2	0	0	4	6	0	0	6	**853**
8:00 PM	1	608	94	3	11	2	0	1	6	4	0	0	4	**734**
9:00 PM	2	461	88	0	12	2	0	0	1	3	0	0	1	**570**
10:00 PM	3	298	56	0	8	2	0	1	2	6	0	0	1	**377**
11:00 PM	2	144	27	1	6	1	0	0	0	0	0	0	0	**181**
Total	**80**	**12,435**	**2,792**	**36**	**552**	**147**	**0**	**26**	**102**	**153**	**5**	**2**	**125**	**16,455**
Percent	**0.5%**	**75.6%**	**17.0%**	**0.2%**	**3.4%**	**0.9%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**0.0%**	**0.0%**	**0.8%**	

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

Vehicle Speed Report Summary

Location: Irwin St, B/W Mission Ave & 2nd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 23

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	134	1,059	4,250	6,652	3,208	945	162	32	11	2	0	0	0	0	0	0	0	16,455
Percent	0.8%	6.4%	25.8%	40.4%	19.5%	5.7%	1.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	134	1,059	4,250	6,652	3,208	945	162	32	11	2	0	0	0	0	0	0	0	16,455
Percent	0.8%	6.4%	25.8%	40.4%	19.5%	5.7%	1.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	22.0	mph	Mean (Average) Speed	22.2	mph
85th Percentile	27.2	mph	10 mph Pace	16.7 - 26.7	mph
95th Percentile	31.1	mph	Percent in Pace	69.6	%
Southbound			**Southbound**		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	3	11	49	24	10	3	2	0	0	0	0	0	0	0	0	0	**102**
1:00 AM	0	0	6	26	12	6	1	0	0	0	0	0	0	0	0	0	0	**51**
2:00 AM	2	3	6	15	12	3	1	0	0	0	0	0	0	0	0	0	0	**42**
3:00 AM	0	1	9	15	10	2	1	0	0	0	0	0	0	0	0	0	0	**38**
4:00 AM	0	0	8	17	8	6	1	0	1	0	0	0	0	0	0	0	0	**41**
5:00 AM	1	7	25	50	56	34	8	3	1	0	0	0	0	0	0	0	0	**185**
6:00 AM	3	5	23	174	143	68	28	4	1	0	0	0	0	0	0	0	0	**449**
7:00 AM	6	47	172	386	220	58	7	1	0	0	0	0	0	0	0	0	0	**897**
8:00 AM	18	110	305	412	168	29	6	0	0	0	0	0	0	0	0	0	0	**1,048**
9:00 AM	11	60	225	482	199	51	5	0	0	0	0	0	0	0	0	0	0	**1,033**
10:00 AM	7	44	244	389	179	40	9	0	0	0	0	0	0	0	0	0	0	**912**
11:00 AM	11	75	299	421	159	33	4	1	0	0	0	0	0	0	0	0	0	**1,003**
12:00 PM	11	99	427	408	98	10	2	1	0	0	0	0	0	0	0	0	0	**1,056**
1:00 PM	14	141	453	412	90	10	1	0	0	0	0	0	0	0	0	0	0	**1,121**
2:00 PM	10	127	315	479	142	18	2	1	0	0	0	0	0	0	0	0	0	**1,094**
3:00 PM	8	54	216	480	257	69	6	1	0	0	0	0	0	0	0	0	0	**1,091**
4:00 PM	11	58	297	478	258	86	9	0	5	0	0	0	0	0	0	0	0	**1,202**
5:00 PM	0	44	264	423	334	98	16	1	0	1	0	0	0	0	0	0	0	**1,181**
6:00 PM	7	44	279	498	268	82	8	8	0	0	0	0	0	0	0	0	0	**1,194**
7:00 PM	8	75	281	286	130	55	12	4	2	0	0	0	0	0	0	0	0	**853**
8:00 PM	0	32	213	313	122	44	7	1	1	1	0	0	0	0	0	0	0	**734**
9:00 PM	6	22	127	206	144	57	6	2	0	0	0	0	0	0	0	0	0	**570**
10:00 PM	0	6	29	173	106	51	10	2	0	0	0	0	0	0	0	0	0	**377**
11:00 PM	0	2	16	60	69	25	9	0	0	0	0	0	0	0	0	0	0	**181**
Total	**134**	**1,059**	**4,250**	**6,652**	**3,208**	**945**	**162**	**32**	**11**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16,455**
Percent	**0.8%**	**6.4%**	**25.8%**	**40.4%**	**19.5%**	**5.7%**	**1.0%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	22.0	mph	Mean (Average) Speed	22.2	mph
85th Percentile	27.2	mph	10 mph Pace	16.7 - 26.7	mph
95th Percentile	31.1	mph	Percent in Pace	69.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	3	11	49	24	10	3	2	0	0	0	0	0	0	0	0	0	**102**
1:00 AM	0	0	6	26	12	6	1	0	0	0	0	0	0	0	0	0	0	**51**
2:00 AM	2	3	6	15	12	3	1	0	0	0	0	0	0	0	0	0	0	**42**
3:00 AM	0	1	9	15	10	2	1	0	0	0	0	0	0	0	0	0	0	**38**
4:00 AM	0	0	8	17	8	6	1	0	1	0	0	0	0	0	0	0	0	**41**
5:00 AM	1	7	25	50	56	34	8	3	1	0	0	0	0	0	0	0	0	**185**
6:00 AM	3	5	23	174	143	68	28	4	1	0	0	0	0	0	0	0	0	**449**
7:00 AM	6	47	172	386	220	58	7	1	0	0	0	0	0	0	0	0	0	**897**
8:00 AM	18	110	305	412	168	29	6	0	0	0	0	0	0	0	0	0	0	**1,048**
9:00 AM	11	60	225	482	199	51	5	0	0	0	0	0	0	0	0	0	0	**1,033**
10:00 AM	7	44	244	389	179	40	9	0	0	0	0	0	0	0	0	0	0	**912**
11:00 AM	11	75	299	421	159	33	4	1	0	0	0	0	0	0	0	0	0	**1,003**
12:00 PM	11	99	427	408	98	10	2	1	0	0	0	0	0	0	0	0	0	**1,056**
1:00 PM	14	141	453	412	90	10	1	0	0	0	0	0	0	0	0	0	0	**1,121**
2:00 PM	10	127	315	479	142	18	2	1	0	0	0	0	0	0	0	0	0	**1,094**
3:00 PM	8	54	216	480	257	69	6	1	0	0	0	0	0	0	0	0	0	**1,091**
4:00 PM	11	58	297	478	258	86	9	0	5	0	0	0	0	0	0	0	0	**1,202**
5:00 PM	0	44	264	423	334	98	16	1	0	1	0	0	0	0	0	0	0	**1,181**
6:00 PM	7	44	279	498	268	82	8	8	0	0	0	0	0	0	0	0	0	**1,194**
7:00 PM	8	75	281	286	130	55	12	4	2	0	0	0	0	0	0	0	0	**853**
8:00 PM	0	32	213	313	122	44	7	1	1	1	0	0	0	0	0	0	0	**734**
9:00 PM	6	22	127	206	144	57	6	2	0	0	0	0	0	0	0	0	0	**570**
10:00 PM	0	6	29	173	106	51	10	2	0	0	0	0	0	0	0	0	0	**377**
11:00 PM	0	2	16	60	69	25	9	0	0	0	0	0	0	0	0	0	0	**181**
Total	**134**	**1,059**	**4,250**	**6,652**	**3,208**	**945**	**162**	**32**	**11**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16,455**
Percent	**0.8%**	**6.4%**	**25.8%**	**40.4%**	**19.5%**	**5.7%**	**1.0%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	22.0	mph	Mean (Average) Speed	22.2	mph
85th Percentile	27.2	mph	10 mph Pace	16.7 - 26.7	mph
95th Percentile	31.1	mph	Percent in Pace	69.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 23

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Percent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	0.0	mph	Mean (Average) Speed	0.0	mph
85th Percentile	0.0	mph	10 mph Pace	.0 - 10.0	mph
95th Percentile	0.0	mph	Percent in Pace	0.0	%

Location: Irwin St, B/W Mission Ave & 2nd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 23

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	102	0	102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	102	0	102
1:00 AM	51	0	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	0	51
2:00 AM	42	0	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	0	42
3:00 AM	38	0	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	0	38
4:00 AM	41	0	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	0	41
5:00 AM	185	0	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	0	185
6:00 AM	449	0	449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	449	0	449
7:00 AM	897	0	897	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	897	0	897
8:00 AM	**1,048**	0	**1,048**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,048**	0	**1,048**
9:00 AM	1,033	0	1,033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,033	0	1,033
10:00 AM	912	0	912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	0	912
11:00 AM	1,003	0	1,003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,003	0	1,003
12:00 PM	1,056	0	1,056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,056	0	1,056
1:00 PM	1,121	0	1,121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,121	0	1,121
2:00 PM	1,094	0	1,094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,094	0	1,094
3:00 PM	1,091	0	1,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,091	0	1,091
4:00 PM	**1,202**	0	**1,202**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,202**	0	**1,202**
5:00 PM	1,181	0	1,181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,181	0	1,181
6:00 PM	1,194	0	1,194	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,194	0	1,194
7:00 PM	853	0	853	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	853	0	853
8:00 PM	734	0	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	734	0	734
9:00 PM	570	0	570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	570	0	570
10:00 PM	377	0	377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	377	0	377
11:00 PM	181	0	181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	0	181
Total	16,455	-	16,455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,455	-	16,455
Percent	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
AM Peak	08:00	-	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	-	08:00
Vol.	1,048	-	1,048	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,048	-	1,048
PM Peak	16:00	-	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	-	16:00
Vol.	1,202	-	1,202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,202	-	1,202

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Kerner Blvd, Canal & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 24

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	10	1,918	524	0	214	0	0	0	0	0	0	0	0	2,666
Percent	0.4%	71.9%	19.7%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	14	2,110	529	3	153	3	0	0	0	0	0	0	0	2,812
Percent	0.5%	75.0%	18.8%	0.1%	5.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	24	4,028	1,053	3	367	3	0	0	0	0	0	0	0	5,478
Percent	0.4%	73.5%	19.2%	0.1%	6.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	1	0	2	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	12	4	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	53	12	0	13	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	72	22	0	12	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	77	18	0	10	0	0	0	0	0	0	0	0	**106**
9:00 AM	1	57	9	0	9	0	0	0	0	0	0	0	0	**76**
10:00 AM	3	73	14	0	7	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	57	20	0	9	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	69	15	0	8	0	0	0	0	0	0	0	0	**92**
1:00 PM	1	89	19	0	9	0	0	0	0	0	0	0	0	**118**
2:00 PM	0	117	29	0	10	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	115	34	0	9	0	0	0	0	0	0	0	0	**159**
4:00 PM	1	175	57	0	23	0	0	0	0	0	0	0	0	**256**
5:00 PM	0	184	71	0	18	0	0	0	0	0	0	0	0	**273**
6:00 PM	1	164	61	0	20	0	0	0	0	0	0	0	0	**246**
7:00 PM	0	152	44	0	16	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	132	35	0	7	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	122	30	0	14	0	0	0	0	0	0	0	0	**166**
10:00 PM	1	104	15	0	7	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	52	6	0	6	0	0	0	0	0	0	0	0	**64**
Total	**10**	**1,918**	**524**	**0**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.4%**	**71.9%**	**19.7%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	54	17	0	2	0	0	0	0	0	0	0	0	**73**
6:00 AM	1	140	58	0	17	0	0	0	0	0	0	0	0	**216**
7:00 AM	2	123	51	0	19	0	0	0	0	0	0	0	0	**195**
8:00 AM	2	156	28	1	10	0	0	0	0	0	0	0	0	**197**
9:00 AM	1	102	20	0	5	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	92	11	0	4	3	0	0	0	0	0	0	0	**110**
11:00 AM	0	70	20	0	2	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	90	12	0	3	0	0	0	0	0	0	0	0	**105**
1:00 PM	2	104	17	0	5	0	0	0	0	0	0	0	0	**128**
2:00 PM	1	79	22	0	16	0	0	0	0	0	0	0	0	**118**
3:00 PM	1	123	24	0	11	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	147	38	0	3	0	0	0	0	0	0	0	0	**188**
5:00 PM	1	170	48	2	19	0	0	0	0	0	0	0	0	**240**
6:00 PM	0	147	48	0	11	0	0	0	0	0	0	0	0	**206**
7:00 PM	1	168	36	0	12	0	0	0	0	0	0	0	0	**217**
8:00 PM	1	124	26	0	5	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	81	35	0	6	0	0	0	0	0	0	0	0	**122**
10:00 PM	1	72	11	0	1	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	23	0	0	1	0	0	0	0	0	0	0	0	**24**
Total	**14**	**2,110**	**529**	**3**	**153**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**0.5%**	**75.0%**	**18.8%**	**0.1%**	**5.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	1	0	2	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	12	4	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	53	12	0	13	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	72	22	0	12	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	77	18	0	10	0	0	0	0	0	0	0	0	**106**
9:00 AM	1	57	9	0	9	0	0	0	0	0	0	0	0	**76**
10:00 AM	3	73	14	0	7	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	57	20	0	9	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	69	15	0	8	0	0	0	0	0	0	0	0	**92**
1:00 PM	1	89	19	0	9	0	0	0	0	0	0	0	0	**118**
2:00 PM	0	117	29	0	10	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	115	34	0	9	0	0	0	0	0	0	0	0	**159**
4:00 PM	1	175	57	0	23	0	0	0	0	0	0	0	0	**256**
5:00 PM	0	184	71	0	18	0	0	0	0	0	0	0	0	**273**
6:00 PM	1	164	61	0	20	0	0	0	0	0	0	0	0	**246**
7:00 PM	0	152	44	0	16	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	132	35	0	7	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	122	30	0	14	0	0	0	0	0	0	0	0	**166**
10:00 PM	1	104	15	0	7	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	52	6	0	6	0	0	0	0	0	0	0	0	**64**
Total	**10**	**1,918**	**524**	**0**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.4%**	**71.9%**	**19.7%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	54	17	0	2	0	0	0	0	0	0	0	0	**73**
6:00 AM	1	140	58	0	17	0	0	0	0	0	0	0	0	**216**
7:00 AM	2	123	51	0	19	0	0	0	0	0	0	0	0	**195**
8:00 AM	2	156	28	1	10	0	0	0	0	0	0	0	0	**197**
9:00 AM	1	102	20	0	5	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	92	11	0	4	3	0	0	0	0	0	0	0	**110**
11:00 AM	0	70	20	0	2	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	90	12	0	3	0	0	0	0	0	0	0	0	**105**
1:00 PM	2	104	17	0	5	0	0	0	0	0	0	0	0	**128**
2:00 PM	1	79	22	0	16	0	0	0	0	0	0	0	0	**118**
3:00 PM	1	123	24	0	11	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	147	38	0	3	0	0	0	0	0	0	0	0	**188**
5:00 PM	1	170	48	2	19	0	0	0	0	0	0	0	0	**240**
6:00 PM	0	147	48	0	11	0	0	0	0	0	0	0	0	**206**
7:00 PM	1	168	36	0	12	0	0	0	0	0	0	0	0	**217**
8:00 PM	1	124	26	0	5	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	81	35	0	6	0	0	0	0	0	0	0	0	**122**
10:00 PM	1	72	11	0	1	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	23	0	0	1	0	0	0	0	0	0	0	0	**24**
Total	**14**	**2,110**	**529**	**3**	**153**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**0.5%**	**75.0%**	**18.8%**	**0.1%**	**5.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	1	0	2	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	12	4	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	53	12	0	13	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	72	22	0	12	0	0	0	0	0	0	0	0	**106**
8:00 AM	1	77	18	0	10	0	0	0	0	0	0	0	0	**106**
9:00 AM	1	57	9	0	9	0	0	0	0	0	0	0	0	**76**
10:00 AM	3	73	14	0	7	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	57	20	0	9	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	69	15	0	8	0	0	0	0	0	0	0	0	**92**
1:00 PM	1	89	19	0	9	0	0	0	0	0	0	0	0	**118**
2:00 PM	0	117	29	0	10	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	115	34	0	9	0	0	0	0	0	0	0	0	**159**
4:00 PM	1	175	57	0	23	0	0	0	0	0	0	0	0	**256**
5:00 PM	0	184	71	0	18	0	0	0	0	0	0	0	0	**273**
6:00 PM	1	164	61	0	20	0	0	0	0	0	0	0	0	**246**
7:00 PM	0	152	44	0	16	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	132	35	0	7	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	122	30	0	14	0	0	0	0	0	0	0	0	**166**
10:00 PM	1	104	15	0	7	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	52	6	0	6	0	0	0	0	0	0	0	0	**64**
Total	**10**	**1,918**	**524**	**0**	**214**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.4%**	**71.9%**	**19.7%**	**0.0%**	**8.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	54	17	0	2	0	0	0	0	0	0	0	0	**73**
6:00 AM	1	140	58	0	17	0	0	0	0	0	0	0	0	**216**
7:00 AM	2	123	51	0	19	0	0	0	0	0	0	0	0	**195**
8:00 AM	2	156	28	1	10	0	0	0	0	0	0	0	0	**197**
9:00 AM	1	102	20	0	5	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	92	11	0	4	3	0	0	0	0	0	0	0	**110**
11:00 AM	0	70	20	0	2	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	90	12	0	3	0	0	0	0	0	0	0	0	**105**
1:00 PM	2	104	17	0	5	0	0	0	0	0	0	0	0	**128**
2:00 PM	1	79	22	0	16	0	0	0	0	0	0	0	0	**118**
3:00 PM	1	123	24	0	11	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	147	38	0	3	0	0	0	0	0	0	0	0	**188**
5:00 PM	1	170	48	2	19	0	0	0	0	0	0	0	0	**240**
6:00 PM	0	147	48	0	11	0	0	0	0	0	0	0	0	**206**
7:00 PM	1	168	36	0	12	0	0	0	0	0	0	0	0	**217**
8:00 PM	1	124	26	0	5	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	81	35	0	6	0	0	0	0	0	0	0	0	**122**
10:00 PM	1	72	11	0	1	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	23	0	0	1	0	0	0	0	0	0	0	0	**24**
Total	**14**	**2,110**	**529**	**3**	**153**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**0.5%**	**75.0%**	**18.8%**	**0.1%**	**5.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Kerner Blvd, Canal & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 24

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	9	67	454	1,291	711	120	13	0	1	0	0	0	0	0	0	0	0	2,666
Percent	0.3%	2.5%	17.0%	48.4%	26.7%	4.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	63	245	774	1,171	476	78	5	0	0	0	0	0	0	0	0	0	0	2,812
Percent	2.2%	8.7%	27.5%	41.6%	16.9%	2.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	72	312	1,228	2,462	1,187	198	18	0	1	0	0	0	0	0	0	0	0	5,478
Percent	1.3%	5.7%	22.4%	44.9%	21.7%	3.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Northbound		
50th Percentile (Median)	23.2	mph
85th Percentile	27.3	mph
95th Percentile	30.0	mph
Southbound		
50th Percentile (Median)	21.3	mph
85th Percentile	25.8	mph
95th Percentile	29.0	mph

Total Study Speed Statistics		
Northbound		
Mean (Average) Speed	23.2	mph
10 mph Pace	18.5 - 28.5	mph
Percent in Pace	79.5	%
Southbound		
Mean (Average) Speed	21.1	mph
10 mph Pace	15.8 - 25.8	mph
Percent in Pace	71.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Wednesday, April 24, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	3	12	8	2	0	0	0	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	0	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	2	2	4	1	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	1	1	11	4	2	0	0	0	0	0	0	0	0	0	0	0	**19**
6:00 AM	1	6	17	35	18	0	1	0	0	0	0	0	0	0	0	0	0	**78**
7:00 AM	1	6	31	39	22	7	0	0	0	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	3	15	44	38	5	1	0	0	0	0	0	0	0	0	0	0	**106**
9:00 AM	0	4	6	32	30	4	0	0	0	0	0	0	0	0	0	0	0	**76**
10:00 AM	0	2	14	44	29	8	0	0	0	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	1	7	33	38	7	0	0	0	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	1	8	40	29	14	0	0	0	0	0	0	0	0	0	0	0	**92**
1:00 PM	0	2	15	57	35	8	1	0	0	0	0	0	0	0	0	0	0	**118**
2:00 PM	1	1	11	68	63	11	1	0	0	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	2	19	76	54	5	2	0	0	0	0	0	0	0	0	0	0	**159**
4:00 PM	2	6	43	120	71	11	3	0	0	0	0	0	0	0	0	0	0	**256**
5:00 PM	2	4	36	144	72	14	1	0	0	0	0	0	0	0	0	0	0	**273**
6:00 PM	0	12	50	130	49	4	1	0	0	0	0	0	0	0	0	0	0	**246**
7:00 PM	1	6	50	101	49	5	0	0	0	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	2	32	115	22	3	0	0	0	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	1	48	87	26	3	1	0	0	0	0	0	0	0	0	0	0	**166**
10:00 PM	0	5	30	63	23	5	0	0	1	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	1	13	29	19	1	1	0	0	0	0	0	0	0	0	0	0	**64**
Total	**9**	**67**	**454**	**1,291**	**711**	**120**	**13**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.3%**	**2.5%**	**17.0%**	**48.4%**	**26.7%**	**4.5%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	23.2	mph	Mean (Average) Speed	23.2	mph
85th Percentile	27.3	mph	10 mph Pace	18.5 - 28.5	mph
95th Percentile	30.0	mph	Percent in Pace	79.5	%

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Wednesday, April 24, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	3	5	1	1	0	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	4	8	5	3	1	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	4	10	29	25	5	0	0	0	0	0	0	0	0	0	0	0	**73**
6:00 AM	10	38	72	77	17	2	0	0	0	0	0	0	0	0	0	0	0	**216**
7:00 AM	15	37	73	56	13	1	0	0	0	0	0	0	0	0	0	0	0	**195**
8:00 AM	12	16	43	82	37	6	1	0	0	0	0	0	0	0	0	0	0	**197**
9:00 AM	0	6	18	70	28	6	0	0	0	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	1	17	50	38	4	0	0	0	0	0	0	0	0	0	0	0	**110**
11:00 AM	0	4	13	36	36	3	0	0	0	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	0	18	58	24	3	2	0	0	0	0	0	0	0	0	0	0	**105**
1:00 PM	5	12	28	58	25	0	0	0	0	0	0	0	0	0	0	0	0	**128**
2:00 PM	0	7	36	48	20	6	1	0	0	0	0	0	0	0	0	0	0	**118**
3:00 PM	4	5	34	67	43	6	0	0	0	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	14	49	90	28	7	0	0	0	0	0	0	0	0	0	0	0	**188**
5:00 PM	7	30	91	85	25	2	0	0	0	0	0	0	0	0	0	0	0	**240**
6:00 PM	3	24	75	77	22	5	0	0	0	0	0	0	0	0	0	0	0	**206**
7:00 PM	5	20	63	94	30	5	0	0	0	0	0	0	0	0	0	0	0	**217**
8:00 PM	2	9	51	72	19	3	0	0	0	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	8	35	58	19	2	0	0	0	0	0	0	0	0	0	0	0	**122**
10:00 PM	0	6	31	34	9	5	0	0	0	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	2	7	8	5	2	0	0	0	0	0	0	0	0	0	0	0	**24**
Total	**63**	**245**	**774**	**1,171**	**476**	**78**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**2.2%**	**8.7%**	**27.5%**	**41.6%**	**16.9%**	**2.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	21.3	mph	Mean (Average) Speed	21.1	mph
85th Percentile	25.8	mph	10 mph Pace	15.8 - 25.8	mph
95th Percentile	29.0	mph	Percent in Pace	71.05	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	3	12	8	2	0	0	0	0	0	0	0	0	0	0	0	**25**
1:00 AM	0	0	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	**8**
3:00 AM	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	2	2	4	1	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	1	1	11	4	2	0	0	0	0	0	0	0	0	0	0	0	**19**
6:00 AM	1	6	17	35	18	0	1	0	0	0	0	0	0	0	0	0	0	**78**
7:00 AM	1	6	31	39	22	7	0	0	0	0	0	0	0	0	0	0	0	**106**
8:00 AM	0	3	15	44	38	5	1	0	0	0	0	0	0	0	0	0	0	**106**
9:00 AM	0	4	6	32	30	4	0	0	0	0	0	0	0	0	0	0	0	**76**
10:00 AM	0	2	14	44	29	8	0	0	0	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	1	7	33	38	7	0	0	0	0	0	0	0	0	0	0	0	**86**
12:00 PM	0	1	8	40	29	14	0	0	0	0	0	0	0	0	0	0	0	**92**
1:00 PM	0	2	15	57	35	8	1	0	0	0	0	0	0	0	0	0	0	**118**
2:00 PM	1	1	11	68	63	11	1	0	0	0	0	0	0	0	0	0	0	**156**
3:00 PM	1	2	19	76	54	5	2	0	0	0	0	0	0	0	0	0	0	**159**
4:00 PM	2	6	43	120	71	11	3	0	0	0	0	0	0	0	0	0	0	**256**
5:00 PM	2	4	36	144	72	14	1	0	0	0	0	0	0	0	0	0	0	**273**
6:00 PM	0	12	50	130	49	4	1	0	0	0	0	0	0	0	0	0	0	**246**
7:00 PM	1	6	50	101	49	5	0	0	0	0	0	0	0	0	0	0	0	**212**
8:00 PM	0	2	32	115	22	3	0	0	0	0	0	0	0	0	0	0	0	**174**
9:00 PM	0	1	48	87	26	3	1	0	0	0	0	0	0	0	0	0	0	**166**
10:00 PM	0	5	30	63	23	5	0	0	1	0	0	0	0	0	0	0	0	**127**
11:00 PM	0	1	13	29	19	1	1	0	0	0	0	0	0	0	0	0	0	**64**
Total	**9**	**67**	**454**	**1,291**	**711**	**120**	**13**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**
Percent	**0.3%**	**2.5%**	**17.0%**	**48.4%**	**26.7%**	**4.5%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	23.2	mph	Mean (Average) Speed	23.2	mph
85th Percentile	27.3	mph	10 mph Pace	18.5 - 28.5	mph
95th Percentile	30.0	mph	Percent in Pace	79.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 24

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	3	5	1	1	0	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	4	8	5	3	1	0	0	0	0	0	0	0	0	0	0	**21**
5:00 AM	0	4	10	29	25	5	0	0	0	0	0	0	0	0	0	0	0	**73**
6:00 AM	10	38	72	77	17	2	0	0	0	0	0	0	0	0	0	0	0	**216**
7:00 AM	15	37	73	56	13	1	0	0	0	0	0	0	0	0	0	0	0	**195**
8:00 AM	12	16	43	82	37	6	1	0	0	0	0	0	0	0	0	0	0	**197**
9:00 AM	0	6	18	70	28	6	0	0	0	0	0	0	0	0	0	0	0	**128**
10:00 AM	0	1	17	50	38	4	0	0	0	0	0	0	0	0	0	0	0	**110**
11:00 AM	0	4	13	36	36	3	0	0	0	0	0	0	0	0	0	0	0	**92**
12:00 PM	0	0	18	58	24	3	2	0	0	0	0	0	0	0	0	0	0	**105**
1:00 PM	5	12	28	58	25	0	0	0	0	0	0	0	0	0	0	0	0	**128**
2:00 PM	0	7	36	48	20	6	1	0	0	0	0	0	0	0	0	0	0	**118**
3:00 PM	4	5	34	67	43	6	0	0	0	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	14	49	90	28	7	0	0	0	0	0	0	0	0	0	0	0	**188**
5:00 PM	7	30	91	85	25	2	0	0	0	0	0	0	0	0	0	0	0	**240**
6:00 PM	3	24	75	77	22	5	0	0	0	0	0	0	0	0	0	0	0	**206**
7:00 PM	5	20	63	94	30	5	0	0	0	0	0	0	0	0	0	0	0	**217**
8:00 PM	2	9	51	72	19	3	0	0	0	0	0	0	0	0	0	0	0	**156**
9:00 PM	0	8	35	58	19	2	0	0	0	0	0	0	0	0	0	0	0	**122**
10:00 PM	0	6	31	34	9	5	0	0	0	0	0	0	0	0	0	0	0	**85**
11:00 PM	0	2	7	8	5	2	0	0	0	0	0	0	0	0	0	0	0	**24**
Total	**63**	**245**	**774**	**1,171**	**476**	**78**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,812**
Percent	**2.2%**	**8.7%**	**27.5%**	**41.6%**	**16.9%**	**2.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	21.3	mph	Mean (Average) Speed	21.1	mph
85th Percentile	25.8	mph	10 mph Pace	15.8 - 25.8	mph
95th Percentile	29.0	mph	Percent in Pace	71.1	%

Location: Kerner Blvd, Canal & Bellam
Date Range: 4/24/2019 - 4/30/2019
Site Code: 24

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	25	10	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	10	35
1:00 AM	9	6	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	6	15
2:00 AM	8	6	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	6	14
3:00 AM	4	10	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	10	14
4:00 AM	9	21	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	21	30
5:00 AM	19	73	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	73	92
6:00 AM	78	**216**	294	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	**216**	294
7:00 AM	**106**	195	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**106**	195	301
8:00 AM	**106**	197	**303**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**106**	197	**303**
9:00 AM	76	128	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	128	204
10:00 AM	97	110	207	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	110	207
11:00 AM	86	92	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	92	178
12:00 PM	92	105	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	105	197
1:00 PM	118	128	246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	118	128	246
2:00 PM	156	118	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	118	274
3:00 PM	159	159	318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159	159	318
4:00 PM	256	188	444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	188	444
5:00 PM	**273**	**240**	**513**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**273**	**240**	**513**
6:00 PM	246	206	452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246	206	452
7:00 PM	212	217	429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	212	217	429
8:00 PM	174	156	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	174	156	330
9:00 PM	166	122	288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	122	288
10:00 PM	127	85	212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	127	85	212
11:00 PM	64	24	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	24	88
Total	2,666	2,812	5,478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,666	2,812	5,478
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	07:00	06:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	06:00	08:00
Vol.	106	216	303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	216	303
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	273	240	513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	240	513

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 25

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	7	3,262	398	0	127	2	0	1	1	0	0	0	0	3,798
Percent	0.2%	85.9%	10.5%	0.0%	3.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	7	2,850	582	1	216	1	0	1	0	0	0	0	0	3,658
Percent	0.2%	77.9%	15.9%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	14	6,112	980	1	343	3	0	2	1	0	0	0	0	7,456
Percent	0.2%	82.0%	13.1%	0.0%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	35	6	0	4	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	177	20	0	14	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	211	23	0	11	0	0	0	0	0	0	0	0	**245**
9:00 AM	0	129	20	0	7	0	0	0	0	0	0	0	0	**156**
10:00 AM	1	142	24	0	8	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	165	29	0	12	0	0	0	1	0	0	0	0	**207**
12:00 PM	0	182	26	0	9	0	0	0	0	0	0	0	0	**217**
1:00 PM	1	210	24	0	9	1	0	0	0	0	0	0	0	**245**
2:00 PM	0	323	44	0	13	0	0	0	0	0	0	0	0	**380**
3:00 PM	2	293	39	0	13	0	0	0	0	0	0	0	0	**347**
4:00 PM	1	328	42	0	11	0	0	0	0	0	0	0	0	**382**
5:00 PM	1	368	31	0	3	0	0	1	0	0	0	0	0	**404**
6:00 PM	0	247	20	0	5	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	171	19	0	5	0	0	0	0	0	0	0	0	**195**
8:00 PM	1	117	10	0	1	0	0	0	0	0	0	0	0	**129**
9:00 PM	0	95	13	0	2	0	0	0	0	0	0	0	0	**110**
10:00 PM	0	34	2	0	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**7**	**3,262**	**398**	**0**	**127**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.2%**	**85.9%**	**10.5%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	17	3	0	2	0	0	0	0	0	0	0	0	**22**
6:00 AM	1	80	10	0	9	0	0	0	0	0	0	0	0	**100**
7:00 AM	1	372	73	0	24	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	454	81	0	28	0	0	0	0	0	0	0	0	**563**
9:00 AM	1	194	42	1	17	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	107	24	0	18	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	117	20	0	12	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	130	33	0	11	0	0	0	0	0	0	0	0	**174**
1:00 PM	1	135	26	0	16	0	0	0	0	0	0	0	0	**178**
2:00 PM	1	182	42	0	10	1	0	0	0	0	0	0	0	**236**
3:00 PM	0	240	55	0	19	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	203	42	0	13	0	0	1	0	0	0	0	0	**259**
5:00 PM	1	270	56	0	12	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	127	32	0	9	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	99	16	0	7	0	0	0	0	0	0	0	0	**122**
8:00 PM	1	60	13	0	3	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	40	7	0	3	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
Total	**7**	**2,850**	**582**	**1**	**216**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.2%**	**77.9%**	**15.9%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	35	6	0	4	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	177	20	0	14	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	211	23	0	11	0	0	0	0	0	0	0	0	**245**
9:00 AM	0	129	20	0	7	0	0	0	0	0	0	0	0	**156**
10:00 AM	1	142	24	0	8	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	165	29	0	12	0	0	0	1	0	0	0	0	**207**
12:00 PM	0	182	26	0	9	0	0	0	0	0	0	0	0	**217**
1:00 PM	1	210	24	0	9	1	0	0	0	0	0	0	0	**245**
2:00 PM	0	323	44	0	13	0	0	0	0	0	0	0	0	**380**
3:00 PM	2	293	39	0	13	0	0	0	0	0	0	0	0	**347**
4:00 PM	1	328	42	0	11	0	0	0	0	0	0	0	0	**382**
5:00 PM	1	368	31	0	3	0	0	1	0	0	0	0	0	**404**
6:00 PM	0	247	20	0	5	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	171	19	0	5	0	0	0	0	0	0	0	0	**195**
8:00 PM	1	117	10	0	1	0	0	0	0	0	0	0	0	**129**
9:00 PM	0	95	13	0	2	0	0	0	0	0	0	0	0	**110**
10:00 PM	0	34	2	0	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**7**	**3,262**	**398**	**0**	**127**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.2%**	**85.9%**	**10.5%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	17	3	0	2	0	0	0	0	0	0	0	0	**22**
6:00 AM	1	80	10	0	9	0	0	0	0	0	0	0	0	**100**
7:00 AM	1	372	73	0	24	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	454	81	0	28	0	0	0	0	0	0	0	0	**563**
9:00 AM	1	194	42	1	17	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	107	24	0	18	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	117	20	0	12	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	130	33	0	11	0	0	0	0	0	0	0	0	**174**
1:00 PM	1	135	26	0	16	0	0	0	0	0	0	0	0	**178**
2:00 PM	1	182	42	0	10	1	0	0	0	0	0	0	0	**236**
3:00 PM	0	240	55	0	19	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	203	42	0	13	0	0	1	0	0	0	0	0	**259**
5:00 PM	1	270	56	0	12	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	127	32	0	9	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	99	16	0	7	0	0	0	0	0	0	0	0	**122**
8:00 PM	1	60	13	0	3	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	40	7	0	3	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
Total	**7**	**2,850**	**582**	**1**	**216**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.2%**	**77.9%**	**15.9%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	16	5	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	35	6	0	4	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	177	20	0	14	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	211	23	0	11	0	0	0	0	0	0	0	0	**245**
9:00 AM	0	129	20	0	7	0	0	0	0	0	0	0	0	**156**
10:00 AM	1	142	24	0	8	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	165	29	0	12	0	0	0	1	0	0	0	0	**207**
12:00 PM	0	182	26	0	9	0	0	0	0	0	0	0	0	**217**
1:00 PM	1	210	24	0	9	1	0	0	0	0	0	0	0	**245**
2:00 PM	0	323	44	0	13	0	0	0	0	0	0	0	0	**380**
3:00 PM	2	293	39	0	13	0	0	0	0	0	0	0	0	**347**
4:00 PM	1	328	42	0	11	0	0	0	0	0	0	0	0	**382**
5:00 PM	1	368	31	0	3	0	0	1	0	0	0	0	0	**404**
6:00 PM	0	247	20	0	5	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	171	19	0	5	0	0	0	0	0	0	0	0	**195**
8:00 PM	1	117	10	0	1	0	0	0	0	0	0	0	0	**129**
9:00 PM	0	95	13	0	2	0	0	0	0	0	0	0	0	**110**
10:00 PM	0	34	2	0	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	11	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**7**	**3,262**	**398**	**0**	**127**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.2%**	**85.9%**	**10.5%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	17	3	0	2	0	0	0	0	0	0	0	0	**22**
6:00 AM	1	80	10	0	9	0	0	0	0	0	0	0	0	**100**
7:00 AM	1	372	73	0	24	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	454	81	0	28	0	0	0	0	0	0	0	0	**563**
9:00 AM	1	194	42	1	17	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	107	24	0	18	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	117	20	0	12	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	130	33	0	11	0	0	0	0	0	0	0	0	**174**
1:00 PM	1	135	26	0	16	0	0	0	0	0	0	0	0	**178**
2:00 PM	1	182	42	0	10	1	0	0	0	0	0	0	0	**236**
3:00 PM	0	240	55	0	19	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	203	42	0	13	0	0	1	0	0	0	0	0	**259**
5:00 PM	1	270	56	0	12	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	127	32	0	9	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	99	16	0	7	0	0	0	0	0	0	0	0	**122**
8:00 PM	1	60	13	0	3	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	40	7	0	3	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
Total	**7**	**2,850**	**582**	**1**	**216**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.2%**	**77.9%**	**15.9%**	**0.0%**	**5.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 25

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	0	5	8	31	480	1,757	1,286	204	20	4	3	0	0	0	0	0	0	3,798
Percent	0.0%	0.1%	0.2%	0.8%	12.6%	46.3%	33.9%	5.4%	0.5%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	0	0	14	68	524	1,694	1,167	173	17	1	0	0	0	0	0	0	0	3,658
Percent	0.0%	0.0%	0.4%	1.9%	14.3%	46.3%	31.9%	4.7%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	0	5	22	99	1,004	3,451	2,453	377	37	5	3	0	0	0	0	0	0	7,456
Percent	0.0%	0.1%	0.3%	1.3%	13.5%	46.3%	32.9%	5.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	34.1	mph	Mean (Average) Speed	34.1	mph
85th Percentile	37.9	mph	10 mph Pace	28.9 - 38.9	mph
95th Percentile	40.4	mph	Percent in Pace	81.4	%
Southbound			**Southbound**		
50th Percentile (Median)	33.7	mph	Mean (Average) Speed	33.7	mph
85th Percentile	37.7	mph	10 mph Pace	28.6 - 38.6	mph
95th Percentile	40.0	mph	Percent in Pace	80.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	0	0	3	3	9	4	0	2	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	0	0	1	8	13	18	4	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	0	2	4	48	90	59	8	0	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	0	0	3	34	115	82	8	2	0	1	0	0	0	0	0	0	**245**
9:00 AM	0	0	0	0	17	71	59	8	0	1	0	0	0	0	0	0	0	**156**
10:00 AM	0	1	1	0	22	95	46	8	2	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	0	0	1	29	95	73	9	0	0	0	0	0	0	0	0	0	**207**
12:00 PM	0	1	1	2	16	88	91	16	1	1	0	0	0	0	0	0	0	**217**
1:00 PM	0	0	0	1	20	112	95	15	2	0	0	0	0	0	0	0	0	**245**
2:00 PM	0	1	0	2	39	181	132	23	1	0	1	0	0	0	0	0	0	**380**
3:00 PM	0	0	0	0	44	150	128	23	2	0	0	0	0	0	0	0	0	**347**
4:00 PM	0	0	0	2	42	197	128	11	2	0	0	0	0	0	0	0	0	**382**
5:00 PM	0	2	2	3	34	190	145	26	2	0	0	0	0	0	0	0	0	**404**
6:00 PM	0	0	0	3	36	125	91	17	0	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	0	1	1	33	89	60	9	2	0	0	0	0	0	0	0	0	**195**
8:00 PM	0	0	0	4	26	57	33	7	1	1	0	0	0	0	0	0	0	**129**
9:00 PM	0	0	0	1	20	57	23	8	0	0	1	0	0	0	0	0	0	**110**
10:00 PM	0	0	1	0	2	16	14	3	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	0	0	0	3	4	3	1	0	0	0	0	0	0	0	0	0	**11**
Total	**0**	**5**	**8**	**31**	**480**	**1,757**	**1,286**	**204**	**20**	**4**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.0%**	**0.1%**	**0.2%**	**0.8%**	**12.6%**	**46.3%**	**33.9%**	**5.4%**	**0.5%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	34.1	mph	Mean (Average) Speed	34.1	mph
85th Percentile	37.9	mph	10 mph Pace	28.9 - 38.9	mph
95th Percentile	40.4	mph	Percent in Pace	81.4	%

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	2	3	5	8	4	0	0	0	0	0	0	0	0	0	**22**
6:00 AM	0	0	0	1	13	57	24	5	0	0	0	0	0	0	0	0	0	**100**
7:00 AM	0	0	1	10	63	221	154	21	0	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	0	0	6	70	298	173	15	1	0	0	0	0	0	0	0	0	**563**
9:00 AM	0	0	1	10	44	104	87	8	1	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	0	2	3	26	71	44	2	1	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	0	1	7	19	78	36	8	0	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	0	2	1	35	75	45	12	3	1	0	0	0	0	0	0	0	**174**
1:00 PM	0	0	0	0	33	74	62	8	1	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	0	1	4	52	110	55	13	1	0	0	0	0	0	0	0	0	**236**
3:00 PM	0	0	4	10	42	148	96	13	1	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	0	0	6	32	106	93	21	1	0	0	0	0	0	0	0	0	**259**
5:00 PM	0	0	0	0	32	161	125	18	3	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	0	1	0	18	72	63	13	1	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	0	0	5	8	53	48	7	1	0	0	0	0	0	0	0	0	**122**
8:00 PM	0	0	1	0	16	34	24	2	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	0	0	2	13	17	16	2	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	0	0	1	2	6	8	1	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	**6**
Total	**0**	**0**	**14**	**68**	**524**	**1,694**	**1,167**	**173**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.0%**	**0.0%**	**0.4%**	**1.9%**	**14.3%**	**46.3%**	**31.9%**	**4.7%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	33.7	mph	Mean (Average) Speed	33.7	mph
85th Percentile	37.7	mph	10 mph Pace	28.6 - 38.6	mph
95th Percentile	40.0	mph	Percent in Pace	80.59	%

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	**4**
1:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
5:00 AM	0	0	0	3	3	9	4	0	2	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	0	0	1	8	13	18	4	1	0	0	0	0	0	0	0	0	**45**
7:00 AM	0	0	2	4	48	90	59	8	0	0	0	0	0	0	0	0	0	**211**
8:00 AM	0	0	0	3	34	115	82	8	2	0	1	0	0	0	0	0	0	**245**
9:00 AM	0	0	0	0	17	71	59	8	0	1	0	0	0	0	0	0	0	**156**
10:00 AM	0	1	1	0	22	95	46	8	2	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	0	0	1	29	95	73	9	0	0	0	0	0	0	0	0	0	**207**
12:00 PM	0	1	1	2	16	88	91	16	1	1	0	0	0	0	0	0	0	**217**
1:00 PM	0	0	0	1	20	112	95	15	2	0	0	0	0	0	0	0	0	**245**
2:00 PM	0	1	0	2	39	181	132	23	1	0	1	0	0	0	0	0	0	**380**
3:00 PM	0	0	0	0	44	150	128	23	2	0	0	0	0	0	0	0	0	**347**
4:00 PM	0	0	0	2	42	197	128	11	2	0	0	0	0	0	0	0	0	**382**
5:00 PM	0	2	2	3	34	190	145	26	2	0	0	0	0	0	0	0	0	**404**
6:00 PM	0	0	0	3	36	125	91	17	0	0	0	0	0	0	0	0	0	**272**
7:00 PM	0	0	1	1	33	89	60	9	2	0	0	0	0	0	0	0	0	**195**
8:00 PM	0	0	0	4	26	57	33	7	1	1	0	0	0	0	0	0	0	**129**
9:00 PM	0	0	0	1	20	57	23	8	0	0	1	0	0	0	0	0	0	**110**
10:00 PM	0	0	1	0	2	16	14	3	0	0	0	0	0	0	0	0	0	**36**
11:00 PM	0	0	0	0	3	4	3	1	0	0	0	0	0	0	0	0	0	**11**
Total	**0**	**5**	**8**	**31**	**480**	**1,757**	**1,286**	**204**	**20**	**4**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3,798**
Percent	**0.0%**	**0.1%**	**0.2%**	**0.8%**	**12.6%**	**46.3%**	**33.9%**	**5.4%**	**0.5%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	34.1	mph	Mean (Average) Speed	34.1	mph
85th Percentile	37.9	mph	10 mph Pace	28.9 - 38.9	mph
95th Percentile	40.4	mph	Percent in Pace	81.4	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 25

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	2	3	5	8	4	0	0	0	0	0	0	0	0	0	**22**
6:00 AM	0	0	0	1	13	57	24	5	0	0	0	0	0	0	0	0	0	**100**
7:00 AM	0	0	1	10	63	221	154	21	0	0	0	0	0	0	0	0	0	**470**
8:00 AM	0	0	0	6	70	298	173	15	1	0	0	0	0	0	0	0	0	**563**
9:00 AM	0	0	1	10	44	104	87	8	1	0	0	0	0	0	0	0	0	**255**
10:00 AM	0	0	2	3	26	71	44	2	1	0	0	0	0	0	0	0	0	**149**
11:00 AM	0	0	1	7	19	78	36	8	0	0	0	0	0	0	0	0	0	**149**
12:00 PM	0	0	2	1	35	75	45	12	3	1	0	0	0	0	0	0	0	**174**
1:00 PM	0	0	0	0	33	74	62	8	1	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	0	1	4	52	110	55	13	1	0	0	0	0	0	0	0	0	**236**
3:00 PM	0	0	4	10	42	148	96	13	1	0	0	0	0	0	0	0	0	**314**
4:00 PM	0	0	0	6	32	106	93	21	1	0	0	0	0	0	0	0	0	**259**
5:00 PM	0	0	0	0	32	161	125	18	3	0	0	0	0	0	0	0	0	**339**
6:00 PM	0	0	1	0	18	72	63	13	1	0	0	0	0	0	0	0	0	**168**
7:00 PM	0	0	0	5	8	53	48	7	1	0	0	0	0	0	0	0	0	**122**
8:00 PM	0	0	1	0	16	34	24	2	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	0	0	2	13	17	16	2	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	0	0	1	2	6	8	1	1	0	0	0	0	0	0	0	0	**19**
11:00 PM	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	**6**
Total	**0**	**0**	**14**	**68**	**524**	**1,694**	**1,167**	**173**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,658**
Percent	**0.0%**	**0.0%**	**0.4%**	**1.9%**	**14.3%**	**46.3%**	**31.9%**	**4.7%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	33.7	mph	Mean (Average) Speed	33.7	mph
85th Percentile	37.7	mph	10 mph Pace	28.6 - 38.6	mph
95th Percentile	40.0	mph	Percent in Pace	80.6	%

Location: Las Gallinas Ave, B/W Lucas Valley & Freitas
Date Range: 4/25/2019 - 5/1/2019
Site Code: 25

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	4	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	5
1:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
2:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	2	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6
5:00 AM	21	22	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	22	43
6:00 AM	45	100	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	100	145
7:00 AM	211	470	681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	470	681
8:00 AM	**245**	**563**	**808**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**245**	**563**	**808**
9:00 AM	156	255	411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	255	411
10:00 AM	175	149	324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	149	324
11:00 AM	207	149	356	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	207	149	356
12:00 PM	217	174	391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	217	174	391
1:00 PM	245	178	423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	178	423
2:00 PM	380	236	616	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	380	236	616
3:00 PM	347	314	661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	347	314	661
4:00 PM	382	259	641	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	382	259	641
5:00 PM	**404**	**339**	**743**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**404**	**339**	**743**
6:00 PM	272	168	440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	272	168	440
7:00 PM	195	122	317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	122	317
8:00 PM	129	77	206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	77	206
9:00 PM	110	50	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	50	160
10:00 PM	36	19	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	19	55
11:00 PM	11	6	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	6	17
Total	3,798	3,658	7,456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,798	3,658	7,456
Percent	51%	49%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51%	49%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	245	563	808	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	563	808
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	404	339	743	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	339	743

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Las Gallinas Ave, B/W Freitas & Northgate

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 26

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	55	3,429	359	17	99	163	0	2	3	3	0	0	4	4,134
Percent	1.3%	82.9%	8.7%	0.4%	2.4%	3.9%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%
Southbound	80	2,799	354	5	146	33	0	1	2	1	0	0	1	3,422
Percent	2.3%	81.8%	10.3%	0.1%	4.3%	1.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	135	6,228	713	22	245	196	0	3	5	4	0	0	5	7,556
Percent	1.8%	82.4%	9.4%	0.3%	3.2%	2.6%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	2	0	0	0	1	0	0	0	**19**
1:00 AM	0	3	2	0	1	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	7	1	0	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	34	4	0	1	1	0	0	0	0	0	0	0	**41**
6:00 AM	2	66	18	1	8	5	0	0	0	0	0	0	0	**100**
7:00 AM	8	222	27	4	7	13	0	0	0	0	0	0	0	**281**
8:00 AM	6	326	44	1	7	15	0	0	0	1	0	0	1	**401**
9:00 AM	2	225	31	2	6	10	0	1	0	0	0	0	0	**277**
10:00 AM	2	220	24	1	7	15	0	0	0	0	0	0	0	**269**
11:00 AM	0	235	24	0	14	9	0	0	0	0	0	0	1	**283**
12:00 PM	6	214	26	1	4	5	0	0	1	0	0	0	0	**257**
1:00 PM	4	186	29	1	7	4	0	0	0	0	0	0	0	**231**
2:00 PM	5	197	23	1	6	7	0	0	1	1	0	0	0	**241**
3:00 PM	4	321	29	1	8	8	0	0	0	0	0	0	0	**371**
4:00 PM	2	263	24	2	10	12	0	0	1	0	0	0	0	**314**
5:00 PM	6	291	18	1	5	24	0	0	0	0	0	0	2	**347**
6:00 PM	5	197	2	0	2	17	0	0	0	0	0	0	0	**223**
7:00 PM	0	163	14	1	1	5	0	1	0	0	0	0	0	**185**
8:00 PM	2	77	7	0	0	4	0	0	0	0	0	0	0	**90**
9:00 PM	0	74	5	0	2	4	0	0	0	0	0	0	0	**85**
10:00 PM	0	35	1	0	2	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	40	3	0	0	1	0	0	0	0	0	0	0	**44**
Total	**55**	**3,429**	**359**	**17**	**99**	**163**	**0**	**2**	**3**	**3**	**0**	**0**	**4**	**4,134**
Percent	**1.3%**	**82.9%**	**8.7%**	**0.4%**	**2.4%**	**3.9%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	24	2	0	2	2	0	0	0	0	0	0	0	**32**
6:00 AM	2	52	8	1	7	3	0	0	0	1	0	0	0	**74**
7:00 AM	2	111	15	0	7	3	0	0	0	0	0	0	0	**138**
8:00 AM	3	109	18	1	13	1	0	0	0	0	0	0	0	**145**
9:00 AM	3	143	16	0	7	1	0	0	0	0	0	0	0	**170**
10:00 AM	5	169	21	0	8	2	0	0	1	0	0	0	0	**206**
11:00 AM	5	188	29	1	13	3	0	0	0	0	0	0	0	**239**
12:00 PM	7	193	38	0	8	1	0	0	0	0	0	0	1	**248**
1:00 PM	3	231	26	0	11	2	0	1	0	0	0	0	0	**274**
2:00 PM	4	249	28	0	6	2	0	0	0	0	0	0	0	**289**
3:00 PM	6	249	29	0	16	1	0	0	0	0	0	0	0	**301**
4:00 PM	12	211	30	0	18	3	0	0	0	0	0	0	0	**274**
5:00 PM	11	231	35	1	11	2	0	0	1	0	0	0	0	**292**
6:00 PM	8	183	16	1	9	3	0	0	0	0	0	0	0	**220**
7:00 PM	5	157	16	0	3	0	0	0	0	0	0	0	0	**181**
8:00 PM	2	100	13	0	2	1	0	0	0	0	0	0	0	**118**
9:00 PM	0	90	8	0	2	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	52	1	0	2	1	0	0	0	0	0	0	0	**56**
11:00 PM	0	36	3	0	1	2	0	0	0	0	0	0	0	**42**
Total	**80**	**2,799**	**354**	**5**	**146**	**33**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**3,422**
Percent	**2.3%**	**81.8%**	**10.3%**	**0.1%**	**4.3%**	**1.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	2	0	0	0	1	0	0	0	**19**
1:00 AM	0	3	2	0	1	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	7	1	0	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	34	4	0	1	1	0	0	0	0	0	0	0	**41**
6:00 AM	2	66	18	1	8	5	0	0	0	0	0	0	0	**100**
7:00 AM	8	222	27	4	7	13	0	0	0	0	0	0	0	**281**
8:00 AM	6	326	44	1	7	15	0	0	0	1	0	0	1	**401**
9:00 AM	2	225	31	2	6	10	0	1	0	0	0	0	0	**277**
10:00 AM	2	220	24	1	7	15	0	0	0	0	0	0	0	**269**
11:00 AM	0	235	24	0	14	9	0	0	0	0	0	0	1	**283**
12:00 PM	6	214	26	1	4	5	0	0	1	0	0	0	0	**257**
1:00 PM	4	186	29	1	7	4	0	0	0	0	0	0	0	**231**
2:00 PM	5	197	23	1	6	7	0	0	1	1	0	0	0	**241**
3:00 PM	4	321	29	1	8	8	0	0	0	0	0	0	0	**371**
4:00 PM	2	263	24	2	10	12	0	0	1	0	0	0	0	**314**
5:00 PM	6	291	18	1	5	24	0	0	0	0	0	0	2	**347**
6:00 PM	5	197	2	0	2	17	0	0	0	0	0	0	0	**223**
7:00 PM	0	163	14	1	1	5	0	1	0	0	0	0	0	**185**
8:00 PM	2	77	7	0	0	4	0	0	0	0	0	0	0	**90**
9:00 PM	0	74	5	0	2	4	0	0	0	0	0	0	0	**85**
10:00 PM	0	35	1	0	2	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	40	3	0	0	1	0	0	0	0	0	0	0	**44**
Total	**55**	**3,429**	**359**	**17**	**99**	**163**	**0**	**2**	**3**	**3**	**0**	**0**	**4**	**4,134**
Percent	**1.3%**	**82.9%**	**8.7%**	**0.4%**	**2.4%**	**3.9%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	24	2	0	2	2	0	0	0	0	0	0	0	**32**
6:00 AM	2	52	8	1	7	3	0	0	0	1	0	0	0	**74**
7:00 AM	2	111	15	0	7	3	0	0	0	0	0	0	0	**138**
8:00 AM	3	109	18	1	13	1	0	0	0	0	0	0	0	**145**
9:00 AM	3	143	16	0	7	1	0	0	0	0	0	0	0	**170**
10:00 AM	5	169	21	0	8	2	0	0	1	0	0	0	0	**206**
11:00 AM	5	188	29	1	13	3	0	0	0	0	0	0	0	**239**
12:00 PM	7	193	38	0	8	1	0	0	0	0	0	0	1	**248**
1:00 PM	3	231	26	0	11	2	0	1	0	0	0	0	0	**274**
2:00 PM	4	249	28	0	6	2	0	0	0	0	0	0	0	**289**
3:00 PM	6	249	29	0	16	1	0	0	0	0	0	0	0	**301**
4:00 PM	12	211	30	0	18	3	0	0	0	0	0	0	0	**274**
5:00 PM	11	231	35	1	11	2	0	0	1	0	0	0	0	**292**
6:00 PM	8	183	16	1	9	3	0	0	0	0	0	0	0	**220**
7:00 PM	5	157	16	0	3	0	0	0	0	0	0	0	0	**181**
8:00 PM	2	100	13	0	2	1	0	0	0	0	0	0	0	**118**
9:00 PM	0	90	8	0	2	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	52	1	0	2	1	0	0	0	0	0	0	0	**56**
11:00 PM	0	36	3	0	1	2	0	0	0	0	0	0	0	**42**
Total	**80**	**2,799**	**354**	**5**	**146**	**33**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**3,422**
Percent	**2.3%**	**81.8%**	**10.3%**	**0.1%**	**4.3%**	**1.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	1	0	0	2	0	0	0	1	0	0	0	**19**
1:00 AM	0	3	2	0	1	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	7	1	0	1	1	0	0	0	0	0	0	0	**10**
4:00 AM	0	11	2	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	1	34	4	0	1	1	0	0	0	0	0	0	0	**41**
6:00 AM	2	66	18	1	8	5	0	0	0	0	0	0	0	**100**
7:00 AM	8	222	27	4	7	13	0	0	0	0	0	0	0	**281**
8:00 AM	6	326	44	1	7	15	0	0	0	1	0	0	1	**401**
9:00 AM	2	225	31	2	6	10	0	1	0	0	0	0	0	**277**
10:00 AM	2	220	24	1	7	15	0	0	0	0	0	0	0	**269**
11:00 AM	0	235	24	0	14	9	0	0	0	0	0	0	1	**283**
12:00 PM	6	214	26	1	4	5	0	0	1	0	0	0	0	**257**
1:00 PM	4	186	29	1	7	4	0	0	0	0	0	0	0	**231**
2:00 PM	5	197	23	1	6	7	0	0	1	1	0	0	0	**241**
3:00 PM	4	321	29	1	8	8	0	0	0	0	0	0	0	**371**
4:00 PM	2	263	24	2	10	12	0	0	1	0	0	0	0	**314**
5:00 PM	6	291	18	1	5	24	0	0	0	0	0	0	2	**347**
6:00 PM	5	197	2	0	2	17	0	0	0	0	0	0	0	**223**
7:00 PM	0	163	14	1	1	5	0	1	0	0	0	0	0	**185**
8:00 PM	2	77	7	0	0	4	0	0	0	0	0	0	0	**90**
9:00 PM	0	74	5	0	2	4	0	0	0	0	0	0	0	**85**
10:00 PM	0	35	1	0	2	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	40	3	0	0	1	0	0	0	0	0	0	0	**44**
Total	**55**	**3,429**	**359**	**17**	**99**	**163**	**0**	**2**	**3**	**3**	**0**	**0**	**4**	**4,134**
Percent	**1.3%**	**82.9%**	**8.7%**	**0.4%**	**2.4%**	**3.9%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	24	2	0	2	2	0	0	0	0	0	0	0	**32**
6:00 AM	2	52	8	1	7	3	0	0	0	1	0	0	0	**74**
7:00 AM	2	111	15	0	7	3	0	0	0	0	0	0	0	**138**
8:00 AM	3	109	18	1	13	1	0	0	0	0	0	0	0	**145**
9:00 AM	3	143	16	0	7	1	0	0	0	0	0	0	0	**170**
10:00 AM	5	169	21	0	8	2	0	0	1	0	0	0	0	**206**
11:00 AM	5	188	29	1	13	3	0	0	0	0	0	0	0	**239**
12:00 PM	7	193	38	0	8	1	0	0	0	0	0	0	1	**248**
1:00 PM	3	231	26	0	11	2	0	1	0	0	0	0	0	**274**
2:00 PM	4	249	28	0	6	2	0	0	0	0	0	0	0	**289**
3:00 PM	6	249	29	0	16	1	0	0	0	0	0	0	0	**301**
4:00 PM	12	211	30	0	18	3	0	0	0	0	0	0	0	**274**
5:00 PM	11	231	35	1	11	2	0	0	1	0	0	0	0	**292**
6:00 PM	8	183	16	1	9	3	0	0	0	0	0	0	0	**220**
7:00 PM	5	157	16	0	3	0	0	0	0	0	0	0	0	**181**
8:00 PM	2	100	13	0	2	1	0	0	0	0	0	0	0	**118**
9:00 PM	0	90	8	0	2	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	52	1	0	2	1	0	0	0	0	0	0	0	**56**
11:00 PM	0	36	3	0	1	2	0	0	0	0	0	0	0	**42**
Total	**80**	**2,799**	**354**	**5**	**146**	**33**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**3,422**
Percent	**2.3%**	**81.8%**	**10.3%**	**0.1%**	**4.3%**	**1.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Las Gallinas Ave, B/W Freitas & Northgate

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 26

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	18	67	169	1,337	2,105	403	32	2	1	0	0	0	0	0	0	0	0	4,134
Percent	0.4%	1.6%	4.1%	32.3%	50.9%	9.7%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	32	65	228	1,130	1,631	308	25	1	1	1	0	0	0	0	0	0	0	3,422
Percent	0.9%	1.9%	6.7%	33.0%	47.7%	9.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	50	132	397	2,467	3,736	711	57	3	2	1	0	0	0	0	0	0	0	7,556
Percent	0.7%	1.7%	5.3%	32.6%	49.4%	9.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	25.8	mph	Mean (Average) Speed	25.7	mph
85th Percentile	29.2	mph	10 mph Pace	21.1 - 31.1	mph
95th Percentile	31.3	mph	Percent in Pace	84.9	%
Southbound			**Southbound**		
50th Percentile (Median)	25.6	mph	Mean (Average) Speed	25.2	mph
85th Percentile	29.1	mph	10 mph Pace	20.5 - 30.5	mph
95th Percentile	31.4	mph	Percent in Pace	81.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	1	0	4	8	5	0	0	0	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	0	0	0	5	0	2	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	1	5	0	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	0	2	8	3	0	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	0	3	3	6	14	13	2	0	0	0	0	0	0	0	0	0	0	**41**
6:00 AM	0	1	3	30	58	8	0	0	0	0	0	0	0	0	0	0	0	**100**
7:00 AM	2	2	9	88	142	36	2	0	0	0	0	0	0	0	0	0	0	**281**
8:00 AM	5	9	26	137	189	33	2	0	0	0	0	0	0	0	0	0	0	**401**
9:00 AM	0	0	12	88	146	28	3	0	0	0	0	0	0	0	0	0	0	**277**
10:00 AM	2	9	21	94	122	18	3	0	0	0	0	0	0	0	0	0	0	**269**
11:00 AM	0	3	10	100	140	27	3	0	0	0	0	0	0	0	0	0	0	**283**
12:00 PM	1	3	8	82	139	22	2	0	0	0	0	0	0	0	0	0	0	**257**
1:00 PM	0	5	8	68	125	25	0	0	0	0	0	0	0	0	0	0	0	**231**
2:00 PM	0	2	7	84	125	21	1	1	0	0	0	0	0	0	0	0	0	**241**
3:00 PM	3	9	20	133	168	35	3	0	0	0	0	0	0	0	0	0	0	**371**
4:00 PM	0	2	8	94	182	25	2	1	0	0	0	0	0	0	0	0	0	**314**
5:00 PM	3	9	12	123	169	30	1	0	0	0	0	0	0	0	0	0	0	**347**
6:00 PM	0	3	9	68	126	16	1	0	0	0	0	0	0	0	0	0	0	**223**
7:00 PM	1	3	3	61	102	15	0	0	0	0	0	0	0	0	0	0	0	**185**
8:00 PM	0	1	4	36	39	10	0	0	0	0	0	0	0	0	0	0	0	**90**
9:00 PM	0	1	4	17	50	12	1	0	0	0	0	0	0	0	0	0	0	**85**
10:00 PM	0	1	1	16	16	3	1	0	0	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	0	1	4	23	13	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**18**	**67**	**169**	**1,337**	**2,105**	**403**	**32**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,134**
Percent	**0.4%**	**1.6%**	**4.1%**	**32.3%**	**50.9%**	**9.7%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	25.8	mph	Mean (Average) Speed	25.7	mph
85th Percentile	29.2	mph	10 mph Pace	21.1 - 31.1	mph
95th Percentile	31.3	mph	Percent in Pace	84.9	%

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	2	1	4	12	6	4	0	0	1	0	0	0	0	0	0	0	**32**
6:00 AM	3	0	5	12	38	16	0	0	0	0	0	0	0	0	0	0	0	**74**
7:00 AM	0	2	3	28	84	21	0	0	0	0	0	0	0	0	0	0	0	**138**
8:00 AM	0	0	7	45	71	18	4	0	0	0	0	0	0	0	0	0	0	**145**
9:00 AM	3	3	1	50	98	15	0	0	0	0	0	0	0	0	0	0	0	**170**
10:00 AM	1	4	12	68	102	18	1	0	0	0	0	0	0	0	0	0	0	**206**
11:00 AM	2	1	13	94	110	17	2	0	0	0	0	0	0	0	0	0	0	**239**
12:00 PM	0	1	18	79	128	19	3	0	0	0	0	0	0	0	0	0	0	**248**
1:00 PM	1	6	23	106	115	23	0	0	0	0	0	0	0	0	0	0	0	**274**
2:00 PM	3	7	21	87	146	22	3	0	0	0	0	0	0	0	0	0	0	**289**
3:00 PM	7	7	39	122	108	17	1	0	0	0	0	0	0	0	0	0	0	**301**
4:00 PM	0	11	26	78	116	42	1	0	0	0	0	0	0	0	0	0	0	**274**
5:00 PM	4	8	23	102	140	15	0	0	0	0	0	0	0	0	0	0	0	**292**
6:00 PM	2	5	11	72	108	21	1	0	0	0	0	0	0	0	0	0	0	**220**
7:00 PM	1	4	10	75	83	7	1	0	0	0	0	0	0	0	0	0	0	**181**
8:00 PM	1	1	7	42	60	6	1	0	0	0	0	0	0	0	0	0	0	**118**
9:00 PM	1	0	2	30	57	8	1	1	0	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	2	2	19	24	8	1	0	0	0	0	0	0	0	0	0	0	**56**
11:00 PM	1	1	2	15	21	2	0	0	0	0	0	0	0	0	0	0	0	**42**
Total	**32**	**65**	**228**	**1,130**	**1,631**	**308**	**25**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,422**
Percent	**0.9%**	**1.9%**	**6.7%**	**33.0%**	**47.7%**	**9.0%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	25.6	mph	Mean (Average) Speed	25.2	mph
85th Percentile	29.1	mph	10 mph Pace	20.5 - 30.5	mph
95th Percentile	31.4	mph	Percent in Pace	81.56	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	1	0	4	8	5	0	0	0	0	0	0	0	0	0	0	0	**19**
1:00 AM	0	0	0	0	5	0	2	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	1	5	0	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	0	2	8	3	0	0	0	0	0	0	0	0	0	0	0	**13**
5:00 AM	0	3	3	6	14	13	2	0	0	0	0	0	0	0	0	0	0	**41**
6:00 AM	0	1	3	30	58	8	0	0	0	0	0	0	0	0	0	0	0	**100**
7:00 AM	2	2	9	88	142	36	2	0	0	0	0	0	0	0	0	0	0	**281**
8:00 AM	5	9	26	137	189	33	2	0	0	0	0	0	0	0	0	0	0	**401**
9:00 AM	0	0	12	88	146	28	3	0	0	0	0	0	0	0	0	0	0	**277**
10:00 AM	2	9	21	94	122	18	3	0	0	0	0	0	0	0	0	0	0	**269**
11:00 AM	0	3	10	100	140	27	3	0	0	0	0	0	0	0	0	0	0	**283**
12:00 PM	1	3	8	82	139	22	2	0	0	0	0	0	0	0	0	0	0	**257**
1:00 PM	0	5	8	68	125	25	0	0	0	0	0	0	0	0	0	0	0	**231**
2:00 PM	0	2	7	84	125	21	1	1	0	0	0	0	0	0	0	0	0	**241**
3:00 PM	3	9	20	133	168	35	3	0	0	0	0	0	0	0	0	0	0	**371**
4:00 PM	0	2	8	94	182	25	2	1	0	0	0	0	0	0	0	0	0	**314**
5:00 PM	3	9	12	123	169	30	1	0	0	0	0	0	0	0	0	0	0	**347**
6:00 PM	0	3	9	68	126	16	1	0	0	0	0	0	0	0	0	0	0	**223**
7:00 PM	1	3	3	61	102	15	0	0	0	0	0	0	0	0	0	0	0	**185**
8:00 PM	0	1	4	36	39	10	0	0	0	0	0	0	0	0	0	0	0	**90**
9:00 PM	0	1	4	17	50	12	1	0	0	0	0	0	0	0	0	0	0	**85**
10:00 PM	0	1	1	16	16	3	1	0	0	0	0	0	0	0	0	0	0	**38**
11:00 PM	0	0	1	4	23	13	3	0	0	0	0	0	0	0	0	0	0	**44**
Total	**18**	**67**	**169**	**1,337**	**2,105**	**403**	**32**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,134**
Percent	**0.4%**	**1.6%**	**4.1%**	**32.3%**	**50.9%**	**9.7%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	25.8	mph	Mean (Average) Speed	25.7	mph
85th Percentile	29.2	mph	10 mph Pace	21.1 - 31.1	mph
95th Percentile	31.3	mph	Percent in Pace	84.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 to 4/25/2019
Site Code: 26

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	2	2	1	4	12	6	4	0	0	1	0	0	0	0	0	0	0	**32**
6:00 AM	3	0	5	12	38	16	0	0	0	0	0	0	0	0	0	0	0	**74**
7:00 AM	0	2	3	28	84	21	0	0	0	0	0	0	0	0	0	0	0	**138**
8:00 AM	0	0	7	45	71	18	4	0	0	0	0	0	0	0	0	0	0	**145**
9:00 AM	3	3	1	50	98	15	0	0	0	0	0	0	0	0	0	0	0	**170**
10:00 AM	1	4	12	68	102	18	1	0	0	0	0	0	0	0	0	0	0	**206**
11:00 AM	2	1	13	94	110	17	2	0	0	0	0	0	0	0	0	0	0	**239**
12:00 PM	0	1	18	79	128	19	3	0	0	0	0	0	0	0	0	0	0	**248**
1:00 PM	1	6	23	106	115	23	0	0	0	0	0	0	0	0	0	0	0	**274**
2:00 PM	3	7	21	87	146	22	3	0	0	0	0	0	0	0	0	0	0	**289**
3:00 PM	7	7	39	122	108	17	1	0	0	0	0	0	0	0	0	0	0	**301**
4:00 PM	0	11	26	78	116	42	1	0	0	0	0	0	0	0	0	0	0	**274**
5:00 PM	4	8	23	102	140	15	0	0	0	0	0	0	0	0	0	0	0	**292**
6:00 PM	2	5	11	72	108	21	1	0	0	0	0	0	0	0	0	0	0	**220**
7:00 PM	1	4	10	75	83	7	1	0	0	0	0	0	0	0	0	0	0	**181**
8:00 PM	1	1	7	42	60	6	1	0	0	0	0	0	0	0	0	0	0	**118**
9:00 PM	1	0	2	30	57	8	1	1	0	0	0	0	0	0	0	0	0	**100**
10:00 PM	0	2	2	19	24	8	1	0	0	0	0	0	0	0	0	0	0	**56**
11:00 PM	1	1	2	15	21	2	0	0	0	0	0	0	0	0	0	0	0	**42**
Total	**32**	**65**	**228**	**1,130**	**1,631**	**308**	**25**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,422**
Percent	**0.9%**	**1.9%**	**6.7%**	**33.0%**	**47.7%**	**9.0%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	25.6	mph	Mean (Average) Speed	25.2	mph
85th Percentile	29.1	mph	10 mph Pace	20.5 - 30.5	mph
95th Percentile	31.4	mph	Percent in Pace	81.6	%

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Location: Las Gallinas Ave, B/W Freitas & Northgate
Date Range: 4/25/2019 - 5/1/2019
Site Code: 26

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	19	9	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	9	28
1:00 AM	7	4	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	4	11
2:00 AM	7	4	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	4	11
3:00 AM	10	2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	2	12
4:00 AM	13	4	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	4	17
5:00 AM	41	32	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	32	73
6:00 AM	100	74	174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	74	174
7:00 AM	281	138	419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	281	138	419
8:00 AM	**401**	145	**546**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**401**	145	**546**
9:00 AM	277	170	447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	277	170	447
10:00 AM	269	206	475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	269	206	475
11:00 AM	283	**239**	522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	283	**239**	522
12:00 PM	257	248	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	257	248	505
1:00 PM	231	274	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	274	505
2:00 PM	241	289	530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241	289	530
3:00 PM	**371**	**301**	**672**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**371**	**301**	**672**
4:00 PM	314	274	588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	274	588
5:00 PM	347	292	639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	347	292	639
6:00 PM	223	220	443	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	220	443
7:00 PM	185	181	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	181	366
8:00 PM	90	118	208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	118	208
9:00 PM	85	100	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	100	185
10:00 PM	38	56	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	56	94
11:00 PM	44	42	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	42	86
Total	4,134	3,422	7,556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,134	3,422	7,556
Percent	55%	45%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55%	45%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	401	239	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	401	239	546
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	371	301	672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	371	301	672

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 27

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	39	5,175	757	0	214	10	0	2	4	1	0	0	0	6,202
Percent	0.6%	83.4%	12.2%	0.0%	3.5%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	56	5,938	981	0	300	7	0	1	1	1	0	0	0	7,285
Percent	0.8%	81.5%	13.5%	0.0%	4.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	95	11,113	1,738	0	514	17	0	3	5	2	0	0	0	13,487
Percent	0.7%	82.4%	12.9%	0.0%	3.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
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Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
5:00 AM	1	38	8	0	0	1	0	0	0	0	0	0	0	**48**
6:00 AM	2	90	20	0	6	1	0	0	0	0	0	0	0	**119**
7:00 AM	0	325	58	0	14	0	0	0	0	0	0	0	0	**397**
8:00 AM	1	367	39	0	15	2	0	0	1	0	0	0	0	**425**
9:00 AM	1	233	26	0	14	1	0	0	1	0	0	0	0	**276**
10:00 AM	2	208	42	0	11	1	0	0	1	0	0	0	0	**265**
11:00 AM	2	267	45	0	19	1	0	0	0	0	0	0	0	**334**
12:00 PM	4	296	33	0	11	1	0	0	0	0	0	0	0	**345**
1:00 PM	3	296	47	0	17	0	0	1	0	0	0	0	0	**364**
2:00 PM	2	387	64	0	18	1	0	0	0	0	0	0	0	**472**
3:00 PM	3	516	99	0	16	0	0	0	0	0	0	0	0	**634**
4:00 PM	3	495	76	0	19	0	0	0	1	0	0	0	0	**594**
5:00 PM	4	502	59	0	11	1	0	1	0	1	0	0	0	**579**
6:00 PM	3	309	44	0	14	0	0	0	0	0	0	0	0	**370**
7:00 PM	1	269	30	0	8	0	0	0	0	0	0	0	0	**308**
8:00 PM	3	205	16	0	9	0	0	0	0	0	0	0	0	**233**
9:00 PM	1	157	26	0	7	0	0	0	0	0	0	0	0	**191**
10:00 PM	2	107	11	0	3	0	0	0	0	0	0	0	0	**123**
11:00 PM	1	55	9	0	0	0	0	0	0	0	0	0	0	**65**
Total	**39**	**5,175**	**757**	**0**	**214**	**10**	**0**	**2**	**4**	**1**	**0**	**0**	**0**	**6,202**
Percent	**0.6%**	**83.4%**	**12.2%**	**0.0%**	**3.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
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Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	15	4	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	4	48	15	0	4	0	0	0	0	0	0	0	0	**71**
6:00 AM	3	135	52	0	18	0	0	0	0	0	0	0	0	**208**
7:00 AM	1	381	94	0	25	0	0	1	0	0	0	0	0	**502**
8:00 AM	5	489	90	0	37	1	0	0	0	0	0	0	0	**622**
9:00 AM	2	408	67	0	36	3	0	0	0	0	0	0	0	**516**
10:00 AM	6	345	39	0	22	1	0	0	0	0	0	0	0	**413**
11:00 AM	5	361	56	0	14	0	0	0	1	0	0	0	0	**437**
12:00 PM	3	385	66	0	14	0	0	0	0	0	0	0	0	**468**
1:00 PM	2	384	65	0	22	1	0	0	0	0	0	0	0	**474**
2:00 PM	7	426	62	0	20	0	0	0	0	0	0	0	0	**515**
3:00 PM	3	453	65	0	19	1	0	0	0	1	0	0	0	**542**
4:00 PM	5	479	75	0	15	0	0	0	0	0	0	0	0	**574**
5:00 PM	2	526	77	0	19	0	0	0	0	0	0	0	0	**624**
6:00 PM	2	421	56	0	10	0	0	0	0	0	0	0	0	**489**
7:00 PM	3	249	32	0	10	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	142	27	0	4	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	136	11	0	3	0	0	0	0	0	0	0	0	**150**
10:00 PM	1	88	21	0	3	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
Total	**56**	**5,938**	**981**	**0**	**300**	**7**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**7,285**
Percent	**0.8%**	**81.5%**	**13.5%**	**0.0%**	**4.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
5:00 AM	1	38	8	0	0	1	0	0	0	0	0	0	0	**48**
6:00 AM	2	90	20	0	6	1	0	0	0	0	0	0	0	**119**
7:00 AM	0	325	58	0	14	0	0	0	0	0	0	0	0	**397**
8:00 AM	1	367	39	0	15	2	0	0	1	0	0	0	0	**425**
9:00 AM	1	233	26	0	14	1	0	0	1	0	0	0	0	**276**
10:00 AM	2	208	42	0	11	1	0	0	1	0	0	0	0	**265**
11:00 AM	2	267	45	0	19	1	0	0	0	0	0	0	0	**334**
12:00 PM	4	296	33	0	11	1	0	0	0	0	0	0	0	**345**
1:00 PM	3	296	47	0	17	0	0	1	0	0	0	0	0	**364**
2:00 PM	2	387	64	0	18	1	0	0	0	0	0	0	0	**472**
3:00 PM	3	516	99	0	16	0	0	0	0	0	0	0	0	**634**
4:00 PM	3	495	76	0	19	0	0	0	1	0	0	0	0	**594**
5:00 PM	4	502	59	0	11	1	0	1	0	1	0	0	0	**579**
6:00 PM	3	309	44	0	14	0	0	0	0	0	0	0	0	**370**
7:00 PM	1	269	30	0	8	0	0	0	0	0	0	0	0	**308**
8:00 PM	3	205	16	0	9	0	0	0	0	0	0	0	0	**233**
9:00 PM	1	157	26	0	7	0	0	0	0	0	0	0	0	**191**
10:00 PM	2	107	11	0	3	0	0	0	0	0	0	0	0	**123**
11:00 PM	1	55	9	0	0	0	0	0	0	0	0	0	0	**65**
Total	**39**	**5,175**	**757**	**0**	**214**	**10**	**0**	**2**	**4**	**1**	**0**	**0**	**0**	**6,202**
Percent	**0.6%**	**83.4%**	**12.2%**	**0.0%**	**3.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	15	4	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	4	48	15	0	4	0	0	0	0	0	0	0	0	**71**
6:00 AM	3	135	52	0	18	0	0	0	0	0	0	0	0	**208**
7:00 AM	1	381	94	0	25	0	0	1	0	0	0	0	0	**502**
8:00 AM	5	489	90	0	37	1	0	0	0	0	0	0	0	**622**
9:00 AM	2	408	67	0	36	3	0	0	0	0	0	0	0	**516**
10:00 AM	6	345	39	0	22	1	0	0	0	0	0	0	0	**413**
11:00 AM	5	361	56	0	14	0	0	0	1	0	0	0	0	**437**
12:00 PM	3	385	66	0	14	0	0	0	0	0	0	0	0	**468**
1:00 PM	2	384	65	0	22	1	0	0	0	0	0	0	0	**474**
2:00 PM	7	426	62	0	20	0	0	0	0	0	0	0	0	**515**
3:00 PM	3	453	65	0	19	1	0	0	0	1	0	0	0	**542**
4:00 PM	5	479	75	0	15	0	0	0	0	0	0	0	0	**574**
5:00 PM	2	526	77	0	19	0	0	0	0	0	0	0	0	**624**
6:00 PM	2	421	56	0	10	0	0	0	0	0	0	0	0	**489**
7:00 PM	3	249	32	0	10	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	142	27	0	4	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	136	11	0	3	0	0	0	0	0	0	0	0	**150**
10:00 PM	1	88	21	0	3	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
Total	**56**	**5,938**	**981**	**0**	**300**	**7**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**7,285**
Percent	**0.8%**	**81.5%**	**13.5%**	**0.0%**	**4.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	14	2	0	1	0	0	0	0	0	0	0	0	**17**
5:00 AM	1	38	8	0	0	1	0	0	0	0	0	0	0	**48**
6:00 AM	2	90	20	0	6	1	0	0	0	0	0	0	0	**119**
7:00 AM	0	325	58	0	14	0	0	0	0	0	0	0	0	**397**
8:00 AM	1	367	39	0	15	2	0	0	1	0	0	0	0	**425**
9:00 AM	1	233	26	0	14	1	0	0	1	0	0	0	0	**276**
10:00 AM	2	208	42	0	11	1	0	0	1	0	0	0	0	**265**
11:00 AM	2	267	45	0	19	1	0	0	0	0	0	0	0	**334**
12:00 PM	4	296	33	0	11	1	0	0	0	0	0	0	0	**345**
1:00 PM	3	296	47	0	17	0	0	1	0	0	0	0	0	**364**
2:00 PM	2	387	64	0	18	1	0	0	0	0	0	0	0	**472**
3:00 PM	3	516	99	0	16	0	0	0	0	0	0	0	0	**634**
4:00 PM	3	495	76	0	19	0	0	0	1	0	0	0	0	**594**
5:00 PM	4	502	59	0	11	1	0	1	0	1	0	0	0	**579**
6:00 PM	3	309	44	0	14	0	0	0	0	0	0	0	0	**370**
7:00 PM	1	269	30	0	8	0	0	0	0	0	0	0	0	**308**
8:00 PM	3	205	16	0	9	0	0	0	0	0	0	0	0	**233**
9:00 PM	1	157	26	0	7	0	0	0	0	0	0	0	0	**191**
10:00 PM	2	107	11	0	3	0	0	0	0	0	0	0	0	**123**
11:00 PM	1	55	9	0	0	0	0	0	0	0	0	0	0	**65**
Total	**39**	**5,175**	**757**	**0**	**214**	**10**	**0**	**2**	**4**	**1**	**0**	**0**	**0**	**6,202**
Percent	**0.6%**	**83.4%**	**12.2%**	**0.0%**	**3.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	15	4	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	1	8	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	4	48	15	0	4	0	0	0	0	0	0	0	0	**71**
6:00 AM	3	135	52	0	18	0	0	0	0	0	0	0	0	**208**
7:00 AM	1	381	94	0	25	0	0	1	0	0	0	0	0	**502**
8:00 AM	5	489	90	0	37	1	0	0	0	0	0	0	0	**622**
9:00 AM	2	408	67	0	36	3	0	0	0	0	0	0	0	**516**
10:00 AM	6	345	39	0	22	1	0	0	0	0	0	0	0	**413**
11:00 AM	5	361	56	0	14	0	0	0	1	0	0	0	0	**437**
12:00 PM	3	385	66	0	14	0	0	0	0	0	0	0	0	**468**
1:00 PM	2	384	65	0	22	1	0	0	0	0	0	0	0	**474**
2:00 PM	7	426	62	0	20	0	0	0	0	0	0	0	0	**515**
3:00 PM	3	453	65	0	19	1	0	0	0	1	0	0	0	**542**
4:00 PM	5	479	75	0	15	0	0	0	0	0	0	0	0	**574**
5:00 PM	2	526	77	0	19	0	0	0	0	0	0	0	0	**624**
6:00 PM	2	421	56	0	10	0	0	0	0	0	0	0	0	**489**
7:00 PM	3	249	32	0	10	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	142	27	0	4	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	136	11	0	3	0	0	0	0	0	0	0	0	**150**
10:00 PM	1	88	21	0	3	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	42	5	0	4	0	0	0	0	0	0	0	0	**51**
Total	**56**	**5,938**	**981**	**0**	**300**	**7**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**7,285**
Percent	**0.8%**	**81.5%**	**13.5%**	**0.0%**	**4.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 27

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	26	100	328	1,577	2,991	1,029	130	19	2	0	0	0	0	0	0	0	0	6,202
Percent	0.4%	1.6%	5.3%	25.4%	48.2%	16.6%	2.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	25	128	353	1,288	3,475	1,760	234	21	1	0	0	0	0	0	0	0	0	7,285
Percent	0.3%	1.8%	4.8%	17.7%	47.7%	24.2%	3.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	51	228	681	2,865	6,466	2,789	364	40	3	0	0	0	0	0	0	0	0	13,487
Percent	0.4%	1.7%	5.0%	21.2%	47.9%	20.7%	2.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	26.7	mph	Mean (Average) Speed	26.5	mph
85th Percentile	30.6	mph	10 mph Pace	21.9 - 31.9	mph
95th Percentile	33.1	mph	Percent in Pace	78.7	%
Southbound			**Southbound**		
50th Percentile (Median)	27.7	mph	Mean (Average) Speed	27.4	mph
85th Percentile	31.8	mph	10 mph Pace	23.2 - 33.2	mph
95th Percentile	34.2	mph	Percent in Pace	77.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	4	7	2	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	2	5	2	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	3	2	9	0	0	0	0	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	0	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	0	3	6	7	1	0	0	0	0	0	0	0	0	0	0	**17**
5:00 AM	0	1	2	6	15	17	4	3	0	0	0	0	0	0	0	0	0	**48**
6:00 AM	0	0	3	12	57	34	11	2	0	0	0	0	0	0	0	0	0	**119**
7:00 AM	0	1	8	90	227	58	13	0	0	0	0	0	0	0	0	0	0	**397**
8:00 AM	10	35	50	112	158	58	1	1	0	0	0	0	0	0	0	0	0	**425**
9:00 AM	0	2	8	54	169	36	7	0	0	0	0	0	0	0	0	0	0	**276**
10:00 AM	4	10	31	51	115	45	8	1	0	0	0	0	0	0	0	0	0	**265**
11:00 AM	2	4	16	78	146	80	8	0	0	0	0	0	0	0	0	0	0	**334**
12:00 PM	0	0	5	94	170	67	6	3	0	0	0	0	0	0	0	0	0	**345**
1:00 PM	0	6	15	81	183	67	11	0	1	0	0	0	0	0	0	0	0	**364**
2:00 PM	4	3	18	131	227	81	6	2	0	0	0	0	0	0	0	0	0	**472**
3:00 PM	1	9	55	194	298	76	1	0	0	0	0	0	0	0	0	0	0	**634**
4:00 PM	0	14	39	161	293	81	6	0	0	0	0	0	0	0	0	0	0	**594**
5:00 PM	0	2	15	172	309	77	4	0	0	0	0	0	0	0	0	0	0	**579**
6:00 PM	3	2	13	110	181	53	4	4	0	0	0	0	0	0	0	0	0	**370**
7:00 PM	0	2	8	90	135	55	18	0	0	0	0	0	0	0	0	0	0	**308**
8:00 PM	0	3	15	50	121	40	3	0	1	0	0	0	0	0	0	0	0	**233**
9:00 PM	2	4	10	38	94	38	4	1	0	0	0	0	0	0	0	0	0	**191**
10:00 PM	0	1	9	27	43	36	6	1	0	0	0	0	0	0	0	0	0	**123**
11:00 PM	0	1	5	16	25	14	4	0	0	0	0	0	0	0	0	0	0	**65**
Total	**26**	**100**	**328**	**1,577**	**2,991**	**1,029**	**130**	**19**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,202**
Percent	**0.4%**	**1.6%**	**5.3%**	**25.4%**	**48.2%**	**16.6%**	**2.1%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	26.7	mph	Mean (Average) Speed	26.5	mph
85th Percentile	30.6	mph	10 mph Pace	21.9 - 31.9	mph
95th Percentile	33.1	mph	Percent in Pace	78.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	0	6	9	5	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	0	0	2	2	5	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	4	1	2	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	0	5	6	19	30	10	1	0	0	0	0	0	0	0	0	0	**71**
6:00 AM	0	0	2	14	88	85	18	1	0	0	0	0	0	0	0	0	0	**208**
7:00 AM	0	2	5	91	256	132	11	5	0	0	0	0	0	0	0	0	0	**502**
8:00 AM	2	32	89	187	228	76	7	1	0	0	0	0	0	0	0	0	0	**622**
9:00 AM	7	16	38	133	230	81	11	0	0	0	0	0	0	0	0	0	0	**516**
10:00 AM	1	10	22	78	209	79	13	1	0	0	0	0	0	0	0	0	0	**413**
11:00 AM	1	5	31	74	197	123	6	0	0	0	0	0	0	0	0	0	0	**437**
12:00 PM	0	0	2	68	227	150	17	4	0	0	0	0	0	0	0	0	0	**468**
1:00 PM	1	8	10	63	246	137	9	0	0	0	0	0	0	0	0	0	0	**474**
2:00 PM	5	11	28	81	246	135	8	1	0	0	0	0	0	0	0	0	0	**515**
3:00 PM	4	10	25	84	318	94	7	0	0	0	0	0	0	0	0	0	0	**542**
4:00 PM	1	0	34	138	292	99	9	1	0	0	0	0	0	0	0	0	0	**574**
5:00 PM	3	24	37	119	296	130	15	0	0	0	0	0	0	0	0	0	0	**624**
6:00 PM	0	1	12	74	224	151	26	1	0	0	0	0	0	0	0	0	0	**489**
7:00 PM	0	0	5	20	158	85	23	2	1	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	1	3	17	87	51	14	0	0	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	3	2	20	72	48	5	0	0	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	3	2	13	49	32	12	2	0	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	1	0	4	17	24	4	1	0	0	0	0	0	0	0	0	0	**51**
Total	**25**	**128**	**353**	**1,288**	**3,475**	**1,760**	**234**	**21**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7,285**
Percent	**0.3%**	**1.8%**	**4.8%**	**17.7%**	**47.7%**	**24.2%**	**3.2%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.7	mph	Mean (Average) Speed	27.4	mph
85th Percentile	31.8	mph	10 mph Pace	23.2 - 33.2	mph
95th Percentile	34.2	mph	Percent in Pace	76.98	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	4	7	2	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	2	5	2	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	3	2	9	0	0	0	0	0	0	0	0	0	0	0	0	**14**
3:00 AM	0	0	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	0	3	6	7	1	0	0	0	0	0	0	0	0	0	0	**17**
5:00 AM	0	1	2	6	15	17	4	3	0	0	0	0	0	0	0	0	0	**48**
6:00 AM	0	0	3	12	57	34	11	2	0	0	0	0	0	0	0	0	0	**119**
7:00 AM	0	1	8	90	227	58	13	0	0	0	0	0	0	0	0	0	0	**397**
8:00 AM	10	35	50	112	158	58	1	1	0	0	0	0	0	0	0	0	0	**425**
9:00 AM	0	2	8	54	169	36	7	0	0	0	0	0	0	0	0	0	0	**276**
10:00 AM	4	10	31	51	115	45	8	1	0	0	0	0	0	0	0	0	0	**265**
11:00 AM	2	4	16	78	146	80	8	0	0	0	0	0	0	0	0	0	0	**334**
12:00 PM	0	0	5	94	170	67	6	3	0	0	0	0	0	0	0	0	0	**345**
1:00 PM	0	6	15	81	183	67	11	0	1	0	0	0	0	0	0	0	0	**364**
2:00 PM	4	3	18	131	227	81	6	2	0	0	0	0	0	0	0	0	0	**472**
3:00 PM	1	9	55	194	298	76	1	0	0	0	0	0	0	0	0	0	0	**634**
4:00 PM	0	14	39	161	293	81	6	0	0	0	0	0	0	0	0	0	0	**594**
5:00 PM	0	2	15	172	309	77	4	0	0	0	0	0	0	0	0	0	0	**579**
6:00 PM	3	2	13	110	181	53	4	4	0	0	0	0	0	0	0	0	0	**370**
7:00 PM	0	2	8	90	135	55	18	0	0	0	0	0	0	0	0	0	0	**308**
8:00 PM	0	3	15	50	121	40	3	0	1	0	0	0	0	0	0	0	0	**233**
9:00 PM	2	4	10	38	94	38	4	1	0	0	0	0	0	0	0	0	0	**191**
10:00 PM	0	1	9	27	43	36	6	1	0	0	0	0	0	0	0	0	0	**123**
11:00 PM	0	1	5	16	25	14	4	0	0	0	0	0	0	0	0	0	0	**65**
Total	**26**	**100**	**328**	**1,577**	**2,991**	**1,029**	**130**	**19**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,202**
Percent	**0.4%**	**1.6%**	**5.3%**	**25.4%**	**48.2%**	**16.6%**	**2.1%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	26.7	mph	Mean (Average) Speed	26.5	mph
85th Percentile	30.6	mph	10 mph Pace	21.9 - 31.9	mph
95th Percentile	33.1	mph	Percent in Pace	78.7	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 27

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	0	6	9	5	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	0	0	2	2	5	1	0	0	0	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	4	1	2	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	0	5	6	19	30	10	1	0	0	0	0	0	0	0	0	0	**71**
6:00 AM	0	0	2	14	88	85	18	1	0	0	0	0	0	0	0	0	0	**208**
7:00 AM	0	2	5	91	256	132	11	5	0	0	0	0	0	0	0	0	0	**502**
8:00 AM	2	32	89	187	228	76	7	1	0	0	0	0	0	0	0	0	0	**622**
9:00 AM	7	16	38	133	230	81	11	0	0	0	0	0	0	0	0	0	0	**516**
10:00 AM	1	10	22	78	209	79	13	1	0	0	0	0	0	0	0	0	0	**413**
11:00 AM	1	5	31	74	197	123	6	0	0	0	0	0	0	0	0	0	0	**437**
12:00 PM	0	0	2	68	227	150	17	4	0	0	0	0	0	0	0	0	0	**468**
1:00 PM	1	8	10	63	246	137	9	0	0	0	0	0	0	0	0	0	0	**474**
2:00 PM	5	11	28	81	246	135	8	1	0	0	0	0	0	0	0	0	0	**515**
3:00 PM	4	10	25	84	318	94	7	0	0	0	0	0	0	0	0	0	0	**542**
4:00 PM	1	0	34	138	292	99	9	1	0	0	0	0	0	0	0	0	0	**574**
5:00 PM	3	24	37	119	296	130	15	0	0	0	0	0	0	0	0	0	0	**624**
6:00 PM	0	1	12	74	224	151	26	1	0	0	0	0	0	0	0	0	0	**489**
7:00 PM	0	0	5	20	158	85	23	2	1	0	0	0	0	0	0	0	0	**294**
8:00 PM	0	1	3	17	87	51	14	0	0	0	0	0	0	0	0	0	0	**173**
9:00 PM	0	3	2	20	72	48	5	0	0	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	3	2	13	49	32	12	2	0	0	0	0	0	0	0	0	0	**113**
11:00 PM	0	1	0	4	17	24	4	1	0	0	0	0	0	0	0	0	0	**51**
Total	**25**	**128**	**353**	**1,288**	**3,475**	**1,760**	**234**	**21**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7,285**
Percent	**0.3%**	**1.8%**	**4.8%**	**17.7%**	**47.7%**	**24.2%**	**3.2%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.7	mph	Mean (Average) Speed	27.4	mph
85th Percentile	31.8	mph	10 mph Pace	23.2 - 33.2	mph
95th Percentile	34.2	mph	Percent in Pace	77.0	%

Project Manager: (415) 310-6469
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Location: Lincoln Ave, B/W 101 SB - Hammondale Ct & Mission Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 27

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	14	21	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	21	35
1:00 AM	10	10	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	20
2:00 AM	14	9	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	9	23
3:00 AM	5	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2	7
4:00 AM	17	7	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	7	24
5:00 AM	48	71	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	71	119
6:00 AM	119	208	327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119	208	327
7:00 AM	397	502	899	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	397	502	899
8:00 AM	**425**	**622**	**1,047**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**425**	**622**	**1,047**
9:00 AM	276	516	792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276	516	792
10:00 AM	265	413	678	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265	413	678
11:00 AM	334	437	771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	334	437	771
12:00 PM	345	468	813	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	345	468	813
1:00 PM	364	474	838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	364	474	838
2:00 PM	472	515	987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	472	515	987
3:00 PM	**634**	542	1,176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**634**	542	1,176
4:00 PM	594	574	1,168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	594	574	1,168
5:00 PM	579	**624**	**1,203**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	579	**624**	**1,203**
6:00 PM	370	489	859	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	370	489	859
7:00 PM	308	294	602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	308	294	602
8:00 PM	233	173	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	173	406
9:00 PM	191	150	341	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	191	150	341
10:00 PM	123	113	236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	113	236
11:00 PM	65	51	116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	51	116
Total	6,202	7,285	13,487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,202	7,285	13,487
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	425	622	1,047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	425	622	1,047
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	634	624	1,203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	634	624	1,203

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lincoln Ave, B/W Mission Ave & 3rd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 28

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	34	2,777	382	2	86	5	0	2	1	0	0	0	0	3,289
Percent	1.0%	84.4%	11.6%	0.1%	2.6%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	93	3,590	608	2	177	70	0	0	3	8	0	0	4	4,555
Percent	2.0%	78.8%	13.3%	0.0%	3.9%	1.5%	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	0.1%	100%
Total	127	6,367	990	4	263	75	0	2	4	8	0	0	4	7,844
Percent	1.6%	81.2%	12.6%	0.1%	3.4%	1.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
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Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	2	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	14	2	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	32	15	0	6	0	0	0	0	0	0	0	0	**53**
7:00 AM	1	113	21	0	3	0	0	0	0	0	0	0	0	**138**
8:00 AM	2	152	19	0	7	0	0	1	0	0	0	0	0	**181**
9:00 AM	1	126	11	1	7	1	0	0	1	0	0	0	0	**148**
10:00 AM	1	141	29	0	4	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	172	32	0	7	0	0	0	0	0	0	0	0	**211**
12:00 PM	3	200	19	0	8	0	0	0	0	0	0	0	0	**230**
1:00 PM	2	188	26	0	6	2	0	0	0	0	0	0	0	**224**
2:00 PM	3	191	26	0	9	0	0	0	0	0	0	0	0	**229**
3:00 PM	6	245	28	1	4	0	0	0	0	0	0	0	0	**284**
4:00 PM	0	212	39	0	4	0	0	0	0	0	0	0	0	**255**
5:00 PM	0	200	24	0	5	0	0	1	0	0	0	0	0	**230**
6:00 PM	5	217	20	0	2	1	0	0	0	0	0	0	0	**245**
7:00 PM	3	167	23	0	1	0	0	0	0	0	0	0	0	**194**
8:00 PM	3	159	13	0	5	0	0	0	0	0	0	0	0	**180**
9:00 PM	1	108	16	0	3	0	0	0	0	0	0	0	0	**128**
10:00 PM	1	77	9	0	1	1	0	0	0	0	0	0	0	**89**
11:00 PM	1	41	3	0	1	0	0	0	0	0	0	0	0	**46**
Total	**34**	**2,777**	**382**	**2**	**86**	**5**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3,289**
Percent	**1.0%**	**84.4%**	**11.6%**	**0.1%**	**2.6%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	1	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
4:00 AM	1	7	2	0	4	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	25	14	0	8	0	0	0	0	0	0	0	0	**50**
6:00 AM	4	99	30	0	12	2	0	0	0	0	0	0	0	**147**
7:00 AM	13	253	56	0	14	8	0	0	0	1	0	0	0	**345**
8:00 AM	15	257	56	0	19	5	0	0	0	0	0	0	0	**352**
9:00 AM	2	232	42	0	23	4	0	0	0	0	0	0	1	**304**
10:00 AM	5	199	36	0	9	5	0	0	0	1	0	0	0	**255**
11:00 AM	1	204	39	1	15	3	0	0	0	0	0	0	0	**263**
12:00 PM	3	263	36	0	11	3	0	0	1	0	0	0	0	**317**
1:00 PM	5	224	22	0	13	5	0	0	0	1	0	0	1	**271**
2:00 PM	6	213	34	0	3	6	0	0	1	1	0	0	0	**264**
3:00 PM	7	242	26	1	8	5	0	0	0	0	0	0	0	**289**
4:00 PM	7	267	56	0	8	5	0	0	0	3	0	0	0	**346**
5:00 PM	6	299	56	0	13	4	0	0	1	0	0	0	2	**381**
6:00 PM	5	257	27	0	6	6	0	0	0	0	0	0	0	**301**
7:00 PM	4	201	25	0	4	3	0	0	0	1	0	0	0	**238**
8:00 PM	1	115	21	0	1	3	0	0	0	0	0	0	0	**141**
9:00 PM	1	108	14	0	1	2	0	0	0	0	0	0	0	**126**
10:00 PM	2	69	14	0	2	1	0	0	0	0	0	0	0	**88**
11:00 PM	0	32	1	0	1	0	0	0	0	0	0	0	0	**34**
Total	**93**	**3,590**	**608**	**2**	**177**	**70**	**0**	**0**	**3**	**8**	**0**	**0**	**4**	**4,555**
Percent	**2.0%**	**78.8%**	**13.3%**	**0.0%**	**3.9%**	**1.5%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	2	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	14	2	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	32	15	0	6	0	0	0	0	0	0	0	0	**53**
7:00 AM	1	113	21	0	3	0	0	0	0	0	0	0	0	**138**
8:00 AM	2	152	19	0	7	0	0	1	0	0	0	0	0	**181**
9:00 AM	1	126	11	1	7	1	0	0	1	0	0	0	0	**148**
10:00 AM	1	141	29	0	4	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	172	32	0	7	0	0	0	0	0	0	0	0	**211**
12:00 PM	3	200	19	0	8	0	0	0	0	0	0	0	0	**230**
1:00 PM	2	188	26	0	6	2	0	0	0	0	0	0	0	**224**
2:00 PM	3	191	26	0	9	0	0	0	0	0	0	0	0	**229**
3:00 PM	6	245	28	1	4	0	0	0	0	0	0	0	0	**284**
4:00 PM	0	212	39	0	4	0	0	0	0	0	0	0	0	**255**
5:00 PM	0	200	24	0	5	0	0	1	0	0	0	0	0	**230**
6:00 PM	5	217	20	0	2	1	0	0	0	0	0	0	0	**245**
7:00 PM	3	167	23	0	1	0	0	0	0	0	0	0	0	**194**
8:00 PM	3	159	13	0	5	0	0	0	0	0	0	0	0	**180**
9:00 PM	1	108	16	0	3	0	0	0	0	0	0	0	0	**128**
10:00 PM	1	77	9	0	1	1	0	0	0	0	0	0	0	**89**
11:00 PM	1	41	3	0	1	0	0	0	0	0	0	0	0	**46**
Total	**34**	**2,777**	**382**	**2**	**86**	**5**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3,289**
Percent	**1.0%**	**84.4%**	**11.6%**	**0.1%**	**2.6%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	1	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
4:00 AM	1	7	2	0	4	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	25	14	0	8	0	0	0	0	0	0	0	0	**50**
6:00 AM	4	99	30	0	12	2	0	0	0	0	0	0	0	**147**
7:00 AM	13	253	56	0	14	8	0	0	0	1	0	0	0	**345**
8:00 AM	15	257	56	0	19	5	0	0	0	0	0	0	0	**352**
9:00 AM	2	232	42	0	23	4	0	0	0	0	0	0	1	**304**
10:00 AM	5	199	36	0	9	5	0	0	0	1	0	0	0	**255**
11:00 AM	1	204	39	1	15	3	0	0	0	0	0	0	0	**263**
12:00 PM	3	263	36	0	11	3	0	0	1	0	0	0	0	**317**
1:00 PM	5	224	22	0	13	5	0	0	0	1	0	0	1	**271**
2:00 PM	6	213	34	0	3	6	0	0	1	1	0	0	0	**264**
3:00 PM	7	242	26	1	8	5	0	0	0	0	0	0	0	**289**
4:00 PM	7	267	56	0	8	5	0	0	0	3	0	0	0	**346**
5:00 PM	6	299	56	0	13	4	0	0	1	0	0	0	2	**381**
6:00 PM	5	257	27	0	6	6	0	0	0	0	0	0	0	**301**
7:00 PM	4	201	25	0	4	3	0	0	0	1	0	0	0	**238**
8:00 PM	1	115	21	0	1	3	0	0	0	0	0	0	0	**141**
9:00 PM	1	108	14	0	1	2	0	0	0	0	0	0	0	**126**
10:00 PM	2	69	14	0	2	1	0	0	0	0	0	0	0	**88**
11:00 PM	0	32	1	0	1	0	0	0	0	0	0	0	0	**34**
Total	**93**	**3,590**	**608**	**2**	**177**	**70**	**0**	**0**	**3**	**8**	**0**	**0**	**4**	**4,555**
Percent	**2.0%**	**78.8%**	**13.3%**	**0.0%**	**3.9%**	**1.5%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	2	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	6	2	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	14	2	0	3	0	0	0	0	0	0	0	0	**19**
6:00 AM	0	32	15	0	6	0	0	0	0	0	0	0	0	**53**
7:00 AM	1	113	21	0	3	0	0	0	0	0	0	0	0	**138**
8:00 AM	2	152	19	0	7	0	0	1	0	0	0	0	0	**181**
9:00 AM	1	126	11	1	7	1	0	0	1	0	0	0	0	**148**
10:00 AM	1	141	29	0	4	0	0	0	0	0	0	0	0	**175**
11:00 AM	0	172	32	0	7	0	0	0	0	0	0	0	0	**211**
12:00 PM	3	200	19	0	8	0	0	0	0	0	0	0	0	**230**
1:00 PM	2	188	26	0	6	2	0	0	0	0	0	0	0	**224**
2:00 PM	3	191	26	0	9	0	0	0	0	0	0	0	0	**229**
3:00 PM	6	245	28	1	4	0	0	0	0	0	0	0	0	**284**
4:00 PM	0	212	39	0	4	0	0	0	0	0	0	0	0	**255**
5:00 PM	0	200	24	0	5	0	0	1	0	0	0	0	0	**230**
6:00 PM	5	217	20	0	2	1	0	0	0	0	0	0	0	**245**
7:00 PM	3	167	23	0	1	0	0	0	0	0	0	0	0	**194**
8:00 PM	3	159	13	0	5	0	0	0	0	0	0	0	0	**180**
9:00 PM	1	108	16	0	3	0	0	0	0	0	0	0	0	**128**
10:00 PM	1	77	9	0	1	1	0	0	0	0	0	0	0	**89**
11:00 PM	1	41	3	0	1	0	0	0	0	0	0	0	0	**46**
Total	**34**	**2,777**	**382**	**2**	**86**	**5**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3,289**
Percent	**1.0%**	**84.4%**	**11.6%**	**0.1%**	**2.6%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	0	0	1	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	1	5	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	**6**
4:00 AM	1	7	2	0	4	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	25	14	0	8	0	0	0	0	0	0	0	0	**50**
6:00 AM	4	99	30	0	12	2	0	0	0	0	0	0	0	**147**
7:00 AM	13	253	56	0	14	8	0	0	0	1	0	0	0	**345**
8:00 AM	15	257	56	0	19	5	0	0	0	0	0	0	0	**352**
9:00 AM	2	232	42	0	23	4	0	0	0	0	0	0	1	**304**
10:00 AM	5	199	36	0	9	5	0	0	0	1	0	0	0	**255**
11:00 AM	1	204	39	1	15	3	0	0	0	0	0	0	0	**263**
12:00 PM	3	263	36	0	11	3	0	0	1	0	0	0	0	**317**
1:00 PM	5	224	22	0	13	5	0	0	0	1	0	0	1	**271**
2:00 PM	6	213	34	0	3	6	0	0	1	1	0	0	0	**264**
3:00 PM	7	242	26	1	8	5	0	0	0	0	0	0	0	**289**
4:00 PM	7	267	56	0	8	5	0	0	0	3	0	0	0	**346**
5:00 PM	6	299	56	0	13	4	0	0	1	0	0	0	2	**381**
6:00 PM	5	257	27	0	6	6	0	0	0	0	0	0	0	**301**
7:00 PM	4	201	25	0	4	3	0	0	0	1	0	0	0	**238**
8:00 PM	1	115	21	0	1	3	0	0	0	0	0	0	0	**141**
9:00 PM	1	108	14	0	1	2	0	0	0	0	0	0	0	**126**
10:00 PM	2	69	14	0	2	1	0	0	0	0	0	0	0	**88**
11:00 PM	0	32	1	0	1	0	0	0	0	0	0	0	0	**34**
Total	**93**	**3,590**	**608**	**2**	**177**	**70**	**0**	**0**	**3**	**8**	**0**	**0**	**4**	**4,555**
Percent	**2.0%**	**78.8%**	**13.3%**	**0.0%**	**3.9%**	**1.5%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	

Vehicle Speed Report Summary

Location: Lincoln Ave, B/W Mission Ave & 3rd St

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 28

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	312	894	1,142	745	169	23	1	2	0	0	1	0	0	0	0	0	0	3,289
Percent	9.5%	27.2%	34.7%	22.7%	5.1%	0.7%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	911	1,669	1,305	557	96	11	1	2	0	0	0	0	3	0	0	0	0	4,555
Percent	20.0%	36.6%	28.6%	12.2%	2.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	1,223	2,563	2,447	1,302	265	34	2	4	0	0	1	0	3	0	0	0	0	7,844
Percent	15.6%	32.7%	31.2%	16.6%	3.4%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	17.0	mph	Mean (Average) Speed	16.9	mph
85th Percentile	22.4	mph	10 mph Pace	12.0 - 22.0	mph
95th Percentile	25.4	mph	Percent in Pace	65.4	%
Southbound			**Southbound**		
50th Percentile (Median)	14.2	mph	Mean (Average) Speed	14.5	mph
85th Percentile	19.9	mph	10 mph Pace	8.5 - 18.5	mph
95th Percentile	23.4	mph	Percent in Pace	66.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	0	3	6	1	0	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	0	1	6	1	0	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	4	5	5	2	3	0	0	0	0	0	0	0	0	0	0	0	0	**19**
6:00 AM	5	12	14	13	6	3	0	0	0	0	0	0	0	0	0	0	0	**53**
7:00 AM	11	32	56	36	3	0	0	0	0	0	0	0	0	0	0	0	0	**138**
8:00 AM	3	28	68	68	12	2	0	0	0	0	0	0	0	0	0	0	0	**181**
9:00 AM	6	29	63	38	9	0	0	2	0	0	1	0	0	0	0	0	0	**148**
10:00 AM	23	37	64	42	9	0	0	0	0	0	0	0	0	0	0	0	0	**175**
11:00 AM	23	77	66	36	9	0	0	0	0	0	0	0	0	0	0	0	0	**211**
12:00 PM	24	69	96	35	5	1	0	0	0	0	0	0	0	0	0	0	0	**230**
1:00 PM	32	80	66	40	4	2	0	0	0	0	0	0	0	0	0	0	0	**224**
2:00 PM	25	72	67	58	7	0	0	0	0	0	0	0	0	0	0	0	0	**229**
3:00 PM	52	109	84	33	6	0	0	0	0	0	0	0	0	0	0	0	0	**284**
4:00 PM	16	41	75	94	25	4	0	0	0	0	0	0	0	0	0	0	0	**255**
5:00 PM	5	38	71	74	36	5	1	0	0	0	0	0	0	0	0	0	0	**230**
6:00 PM	22	97	83	32	11	0	0	0	0	0	0	0	0	0	0	0	0	**245**
7:00 PM	23	62	80	24	5	0	0	0	0	0	0	0	0	0	0	0	0	**194**
8:00 PM	14	58	68	36	3	1	0	0	0	0	0	0	0	0	0	0	0	**180**
9:00 PM	13	22	58	28	6	1	0	0	0	0	0	0	0	0	0	0	0	**128**
10:00 PM	6	18	33	25	5	2	0	0	0	0	0	0	0	0	0	0	0	**89**
11:00 PM	2	6	19	14	3	2	0	0	0	0	0	0	0	0	0	0	0	**46**
Total	**312**	**894**	**1,142**	**745**	**169**	**23**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3,289**
Percent	**9.5%**	**27.2%**	**34.7%**	**22.7%**	**5.1%**	**0.7%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	17.0	mph	Mean (Average) Speed	16.9	mph
85th Percentile	22.4	mph	10 mph Pace	12.0 - 22.0	mph
95th Percentile	25.4	mph	Percent in Pace	65.4	%

Project Manager: (415) 310-6469
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Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	3	4	1	1	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	3	4	2	1	3	1	0	0	0	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	17	11	13	5	1	0	0	0	0	0	0	0	0	0	0	0	**50**
6:00 AM	20	57	34	30	6	0	0	0	0	0	0	0	0	0	0	0	0	**147**
7:00 AM	138	109	60	34	3	1	0	0	0	0	0	0	0	0	0	0	0	**345**
8:00 AM	45	154	117	30	5	1	0	0	0	0	0	0	0	0	0	0	0	**352**
9:00 AM	19	68	139	64	13	1	0	0	0	0	0	0	0	0	0	0	0	**304**
10:00 AM	45	89	77	36	8	0	0	0	0	0	0	0	0	0	0	0	0	**255**
11:00 AM	61	112	64	24	2	0	0	0	0	0	0	0	0	0	0	0	0	**263**
12:00 PM	122	150	41	4	0	0	0	0	0	0	0	0	0	0	0	0	0	**317**
1:00 PM	74	135	50	6	1	0	0	2	0	0	0	0	3	0	0	0	0	**271**
2:00 PM	93	71	78	21	1	0	0	0	0	0	0	0	0	0	0	0	0	**264**
3:00 PM	50	131	81	25	1	1	0	0	0	0	0	0	0	0	0	0	0	**289**
4:00 PM	39	109	119	70	7	1	1	0	0	0	0	0	0	0	0	0	0	**346**
5:00 PM	43	112	147	68	9	2	0	0	0	0	0	0	0	0	0	0	0	**381**
6:00 PM	71	150	63	16	1	0	0	0	0	0	0	0	0	0	0	0	0	**301**
7:00 PM	40	113	65	18	2	0	0	0	0	0	0	0	0	0	0	0	0	**238**
8:00 PM	11	40	50	34	6	0	0	0	0	0	0	0	0	0	0	0	0	**141**
9:00 PM	19	30	59	14	4	0	0	0	0	0	0	0	0	0	0	0	0	**126**
10:00 PM	13	14	28	25	7	1	0	0	0	0	0	0	0	0	0	0	0	**88**
11:00 PM	1	2	11	14	6	0	0	0	0	0	0	0	0	0	0	0	0	**34**
Total	**911**	**1,669**	**1,305**	**557**	**96**	**11**	**1**	**2**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**4,555**
Percent	**20.0%**	**36.6%**	**28.6%**	**12.2%**	**2.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	14.2	mph	Mean (Average) Speed	14.5	mph
85th Percentile	19.9	mph	10 mph Pace	8.5 - 18.5	mph
95th Percentile	23.4	mph	Percent in Pace	66.87	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	0	3	6	1	0	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	0	1	6	1	0	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	4	5	5	2	3	0	0	0	0	0	0	0	0	0	0	0	0	**19**
6:00 AM	5	12	14	13	6	3	0	0	0	0	0	0	0	0	0	0	0	**53**
7:00 AM	11	32	56	36	3	0	0	0	0	0	0	0	0	0	0	0	0	**138**
8:00 AM	3	28	68	68	12	2	0	0	0	0	0	0	0	0	0	0	0	**181**
9:00 AM	6	29	63	38	9	0	0	2	0	0	1	0	0	0	0	0	0	**148**
10:00 AM	23	37	64	42	9	0	0	0	0	0	0	0	0	0	0	0	0	**175**
11:00 AM	23	77	66	36	9	0	0	0	0	0	0	0	0	0	0	0	0	**211**
12:00 PM	24	69	96	35	5	1	0	0	0	0	0	0	0	0	0	0	0	**230**
1:00 PM	32	80	66	40	4	2	0	0	0	0	0	0	0	0	0	0	0	**224**
2:00 PM	25	72	67	58	7	0	0	0	0	0	0	0	0	0	0	0	0	**229**
3:00 PM	52	109	84	33	6	0	0	0	0	0	0	0	0	0	0	0	0	**284**
4:00 PM	16	41	75	94	25	4	0	0	0	0	0	0	0	0	0	0	0	**255**
5:00 PM	5	38	71	74	36	5	1	0	0	0	0	0	0	0	0	0	0	**230**
6:00 PM	22	97	83	32	11	0	0	0	0	0	0	0	0	0	0	0	0	**245**
7:00 PM	23	62	80	24	5	0	0	0	0	0	0	0	0	0	0	0	0	**194**
8:00 PM	14	58	68	36	3	1	0	0	0	0	0	0	0	0	0	0	0	**180**
9:00 PM	13	22	58	28	6	1	0	0	0	0	0	0	0	0	0	0	0	**128**
10:00 PM	6	18	33	25	5	2	0	0	0	0	0	0	0	0	0	0	0	**89**
11:00 PM	2	6	19	14	3	2	0	0	0	0	0	0	0	0	0	0	0	**46**
Total	**312**	**894**	**1,142**	**745**	**169**	**23**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3,289**
Percent	**9.5%**	**27.2%**	**34.7%**	**22.7%**	**5.1%**	**0.7%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	17.0	mph	Mean (Average) Speed	16.9	mph
85th Percentile	22.4	mph	10 mph Pace	12.0 - 22.0	mph
95th Percentile	25.4	mph	Percent in Pace	65.4	%

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 to 5/8/2019
Site Code: 28

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	3	4	1	1	0	0	0	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	3	4	2	1	3	1	0	0	0	0	0	0	0	0	0	0	0	**14**
5:00 AM	3	17	11	13	5	1	0	0	0	0	0	0	0	0	0	0	0	**50**
6:00 AM	20	57	34	30	6	0	0	0	0	0	0	0	0	0	0	0	0	**147**
7:00 AM	138	109	60	34	3	1	0	0	0	0	0	0	0	0	0	0	0	**345**
8:00 AM	45	154	117	30	5	1	0	0	0	0	0	0	0	0	0	0	0	**352**
9:00 AM	19	68	139	64	13	1	0	0	0	0	0	0	0	0	0	0	0	**304**
10:00 AM	45	89	77	36	8	0	0	0	0	0	0	0	0	0	0	0	0	**255**
11:00 AM	61	112	64	24	2	0	0	0	0	0	0	0	0	0	0	0	0	**263**
12:00 PM	122	150	41	4	0	0	0	0	0	0	0	0	0	0	0	0	0	**317**
1:00 PM	74	135	50	6	1	0	0	2	0	0	0	0	3	0	0	0	0	**271**
2:00 PM	93	71	78	21	1	0	0	0	0	0	0	0	0	0	0	0	0	**264**
3:00 PM	50	131	81	25	1	1	0	0	0	0	0	0	0	0	0	0	0	**289**
4:00 PM	39	109	119	70	7	1	1	0	0	0	0	0	0	0	0	0	0	**346**
5:00 PM	43	112	147	68	9	2	0	0	0	0	0	0	0	0	0	0	0	**381**
6:00 PM	71	150	63	16	1	0	0	0	0	0	0	0	0	0	0	0	0	**301**
7:00 PM	40	113	65	18	2	0	0	0	0	0	0	0	0	0	0	0	0	**238**
8:00 PM	11	40	50	34	6	0	0	0	0	0	0	0	0	0	0	0	0	**141**
9:00 PM	19	30	59	14	4	0	0	0	0	0	0	0	0	0	0	0	0	**126**
10:00 PM	13	14	28	25	7	1	0	0	0	0	0	0	0	0	0	0	0	**88**
11:00 PM	1	2	11	14	6	0	0	0	0	0	0	0	0	0	0	0	0	**34**
Total	**911**	**1,669**	**1,305**	**557**	**96**	**11**	**1**	**2**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**4,555**
Percent	**20.0%**	**36.6%**	**28.6%**	**12.2%**	**2.1%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	14.2	mph	Mean (Average) Speed	14.5	mph
85th Percentile	19.9	mph	10 mph Pace	8.5 - 18.5	mph
95th Percentile	23.4	mph	Percent in Pace	66.9	%

Location: Lincoln Ave, B/W Mission Ave & 3rd St
Date Range: 5/8/2019 - 5/14/2019
Site Code: 28

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	11	10	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	10	21
1:00 AM	8	7	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	7	15
2:00 AM	4	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10
3:00 AM	5	6	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	11
4:00 AM	2	14	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	14	16
5:00 AM	19	50	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	50	69
6:00 AM	53	147	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	147	200
7:00 AM	138	345	483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138	345	483
8:00 AM	181	**352**	**533**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	**352**	**533**
9:00 AM	148	304	452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	304	452
10:00 AM	175	255	430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	255	430
11:00 AM	**211**	263	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**211**	263	474
12:00 PM	230	317	547	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230	317	547
1:00 PM	224	271	495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	224	271	495
2:00 PM	229	264	493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	264	493
3:00 PM	**284**	289	573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**284**	289	573
4:00 PM	255	346	601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255	346	601
5:00 PM	230	**381**	**611**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230	**381**	**611**
6:00 PM	245	301	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	301	546
7:00 PM	194	238	432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	238	432
8:00 PM	180	141	321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	141	321
9:00 PM	128	126	254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128	126	254
10:00 PM	89	88	177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	88	177
11:00 PM	46	34	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	34	80
Total	3,289	4,555	7,844	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,289	4,555	7,844
Percent	42%	58%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42%	58%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	211	352	533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	352	533
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	284	381	611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	284	381	611

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lindaro St, B/W 3rd St & Andersen Dr

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 29

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	34	2,862	514	5	227	16	0	2	0	2	0	0	1	3,663
Percent	0.9%	78.1%	14.0%	0.1%	6.2%	0.4%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Southbound	22	2,120	390	3	181	5	0	0	1	2	0	0	0	2,724
Percent	0.8%	77.8%	14.3%	0.1%	6.6%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	56	4,982	904	8	408	21	0	2	1	4	0	0	1	6,387
Percent	0.9%	78.0%	14.2%	0.1%	6.4%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Wednesday, May 8, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	12	6	0	2	1	0	0	0	0	0	0	0	**21**
6:00 AM	0	44	20	0	20	1	0	0	0	0	0	0	0	**85**
7:00 AM	1	254	49	3	17	5	0	0	0	0	0	0	0	**329**
8:00 AM	1	154	28	0	15	3	0	1	0	0	0	0	0	**202**
9:00 AM	4	138	37	0	17	0	0	0	0	1	0	0	0	**197**
10:00 AM	0	125	35	1	22	1	0	0	0	0	0	0	0	**184**
11:00 AM	6	196	29	0	16	2	0	0	0	0	0	0	0	**249**
12:00 PM	0	171	40	0	26	0	0	0	0	0	0	0	0	**237**
1:00 PM	1	188	52	0	17	0	0	0	0	0	0	0	0	**258**
2:00 PM	4	264	46	0	14	0	0	0	0	0	0	0	0	**328**
3:00 PM	4	242	35	1	15	2	0	1	0	1	0	0	0	**301**
4:00 PM	1	259	45	0	9	0	0	0	0	0	0	0	0	**314**
5:00 PM	6	289	32	0	11	0	0	0	0	0	0	0	1	**339**
6:00 PM	1	195	24	0	11	0	0	0	0	0	0	0	0	**231**
7:00 PM	3	119	13	0	4	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	77	8	0	4	0	0	0	0	0	0	0	0	**89**
9:00 PM	0	68	9	0	4	1	0	0	0	0	0	0	0	**82**
10:00 PM	1	26	2	0	2	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	22	0	0	1	0	0	0	0	0	0	0	0	**23**
Total	**34**	**2,862**	**514**	**5**	**227**	**16**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**3,663**
Percent	**0.9%**	**78.1%**	**14.0%**	**0.1%**	**6.2%**	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Wednesday, May 8, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	1	31	8	0	1	1	0	0	0	0	0	0	0	**42**
6:00 AM	2	128	29	0	15	0	0	0	0	0	0	0	0	**174**
7:00 AM	1	250	50	0	10	0	0	0	1	1	0	0	0	**313**
8:00 AM	3	177	35	0	12	0	0	0	0	0	0	0	0	**227**
9:00 AM	3	159	31	1	15	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	114	28	0	18	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	100	24	0	18	0	0	0	0	0	0	0	0	**142**
12:00 PM	0	118	15	1	12	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	131	33	1	9	1	0	0	0	1	0	0	0	**176**
2:00 PM	4	154	23	0	8	1	0	0	0	0	0	0	0	**190**
3:00 PM	2	118	21	0	16	2	0	0	0	0	0	0	0	**159**
4:00 PM	1	171	27	0	14	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	122	17	0	9	0	0	0	0	0	0	0	0	**150**
6:00 PM	2	98	14	0	5	0	0	0	0	0	0	0	0	**119**
7:00 PM	1	87	15	0	9	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	42	7	0	4	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	22	6	0	3	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	18	0	0	1	0	0	0	0	0	0	0	0	**19**
Total	**22**	**2,120**	**390**	**3**	**181**	**5**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2,724**
Percent	**0.8%**	**77.8%**	**14.3%**	**0.1%**	**6.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	12	6	0	2	1	0	0	0	0	0	0	0	**21**
6:00 AM	0	44	20	0	20	1	0	0	0	0	0	0	0	**85**
7:00 AM	1	254	49	3	17	5	0	0	0	0	0	0	0	**329**
8:00 AM	1	154	28	0	15	3	0	1	0	0	0	0	0	**202**
9:00 AM	4	138	37	0	17	0	0	0	0	1	0	0	0	**197**
10:00 AM	0	125	35	1	22	1	0	0	0	0	0	0	0	**184**
11:00 AM	6	196	29	0	16	2	0	0	0	0	0	0	0	**249**
12:00 PM	0	171	40	0	26	0	0	0	0	0	0	0	0	**237**
1:00 PM	1	188	52	0	17	0	0	0	0	0	0	0	0	**258**
2:00 PM	4	264	46	0	14	0	0	0	0	0	0	0	0	**328**
3:00 PM	4	242	35	1	15	2	0	1	0	1	0	0	0	**301**
4:00 PM	1	259	45	0	9	0	0	0	0	0	0	0	0	**314**
5:00 PM	6	289	32	0	11	0	0	0	0	0	0	0	1	**339**
6:00 PM	1	195	24	0	11	0	0	0	0	0	0	0	0	**231**
7:00 PM	3	119	13	0	4	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	77	8	0	4	0	0	0	0	0	0	0	0	**89**
9:00 PM	0	68	9	0	4	1	0	0	0	0	0	0	0	**82**
10:00 PM	1	26	2	0	2	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	22	0	0	1	0	0	0	0	0	0	0	0	**23**
Total	**34**	**2,862**	**514**	**5**	**227**	**16**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**3,663**
Percent	**0.9%**	**78.1%**	**14.0%**	**0.1%**	**6.2%**	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	1	31	8	0	1	1	0	0	0	0	0	0	0	**42**
6:00 AM	2	128	29	0	15	0	0	0	0	0	0	0	0	**174**
7:00 AM	1	250	50	0	10	0	0	0	1	1	0	0	0	**313**
8:00 AM	3	177	35	0	12	0	0	0	0	0	0	0	0	**227**
9:00 AM	3	159	31	1	15	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	114	28	0	18	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	100	24	0	18	0	0	0	0	0	0	0	0	**142**
12:00 PM	0	118	15	1	12	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	131	33	1	9	1	0	0	0	1	0	0	0	**176**
2:00 PM	4	154	23	0	8	1	0	0	0	0	0	0	0	**190**
3:00 PM	2	118	21	0	16	2	0	0	0	0	0	0	0	**159**
4:00 PM	1	171	27	0	14	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	122	17	0	9	0	0	0	0	0	0	0	0	**150**
6:00 PM	2	98	14	0	5	0	0	0	0	0	0	0	0	**119**
7:00 PM	1	87	15	0	9	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	42	7	0	4	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	22	6	0	3	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	18	0	0	1	0	0	0	0	0	0	0	0	**19**
Total	**22**	**2,120**	**390**	**3**	**181**	**5**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2,724**
Percent	**0.8%**	**77.8%**	**14.3%**	**0.1%**	**6.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	12	6	0	2	1	0	0	0	0	0	0	0	**21**
6:00 AM	0	44	20	0	20	1	0	0	0	0	0	0	0	**85**
7:00 AM	1	254	49	3	17	5	0	0	0	0	0	0	0	**329**
8:00 AM	1	154	28	0	15	3	0	1	0	0	0	0	0	**202**
9:00 AM	4	138	37	0	17	0	0	0	0	1	0	0	0	**197**
10:00 AM	0	125	35	1	22	1	0	0	0	0	0	0	0	**184**
11:00 AM	6	196	29	0	16	2	0	0	0	0	0	0	0	**249**
12:00 PM	0	171	40	0	26	0	0	0	0	0	0	0	0	**237**
1:00 PM	1	188	52	0	17	0	0	0	0	0	0	0	0	**258**
2:00 PM	4	264	46	0	14	0	0	0	0	0	0	0	0	**328**
3:00 PM	4	242	35	1	15	2	0	1	0	1	0	0	0	**301**
4:00 PM	1	259	45	0	9	0	0	0	0	0	0	0	0	**314**
5:00 PM	6	289	32	0	11	0	0	0	0	0	0	0	1	**339**
6:00 PM	1	195	24	0	11	0	0	0	0	0	0	0	0	**231**
7:00 PM	3	119	13	0	4	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	77	8	0	4	0	0	0	0	0	0	0	0	**89**
9:00 PM	0	68	9	0	4	1	0	0	0	0	0	0	0	**82**
10:00 PM	1	26	2	0	2	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	22	0	0	1	0	0	0	0	0	0	0	0	**23**
Total	**34**	**2,862**	**514**	**5**	**227**	**16**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**3,663**
Percent	**0.9%**	**78.1%**	**14.0%**	**0.1%**	**6.2%**	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	1	31	8	0	1	1	0	0	0	0	0	0	0	**42**
6:00 AM	2	128	29	0	15	0	0	0	0	0	0	0	0	**174**
7:00 AM	1	250	50	0	10	0	0	0	1	1	0	0	0	**313**
8:00 AM	3	177	35	0	12	0	0	0	0	0	0	0	0	**227**
9:00 AM	3	159	31	1	15	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	114	28	0	18	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	100	24	0	18	0	0	0	0	0	0	0	0	**142**
12:00 PM	0	118	15	1	12	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	131	33	1	9	1	0	0	0	1	0	0	0	**176**
2:00 PM	4	154	23	0	8	1	0	0	0	0	0	0	0	**190**
3:00 PM	2	118	21	0	16	2	0	0	0	0	0	0	0	**159**
4:00 PM	1	171	27	0	14	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	122	17	0	9	0	0	0	0	0	0	0	0	**150**
6:00 PM	2	98	14	0	5	0	0	0	0	0	0	0	0	**119**
7:00 PM	1	87	15	0	9	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	42	7	0	4	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	22	6	0	3	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	18	0	0	1	0	0	0	0	0	0	0	0	**19**
Total	**22**	**2,120**	**390**	**3**	**181**	**5**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2,724**
Percent	**0.8%**	**77.8%**	**14.3%**	**0.1%**	**6.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Lindaro St, B/W 3rd St & Andersen Dr

Count Direction: Northbound / Southbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 29

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	150	447	968	1,344	642	101	8	0	0	3	0	0	0	0	0	0	0	3,663
Percent	4.1%	12.2%	26.4%	36.7%	17.5%	2.8%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	16	40	320	1,239	913	178	15	2	1	0	0	0	0	0	0	0	0	2,724
Percent	0.6%	1.5%	11.7%	45.5%	33.5%	6.5%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	166	487	1,288	2,583	1,555	279	23	2	1	3	0	0	0	0	0	0	0	6,387
Percent	2.6%	7.6%	20.2%	40.4%	24.3%	4.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Northbound		
50th Percentile (Median)	20.9	mph
85th Percentile	25.9	mph
95th Percentile	29.0	mph
Southbound		
50th Percentile (Median)	24.2	mph
85th Percentile	28.3	mph
95th Percentile	30.8	mph

Total Study Speed Statistics		
Northbound		
Mean (Average) Speed	20.5	mph
10 mph Pace	16.6 - 26.6	mph
Percent in Pace	65.6	%
Southbound		
Mean (Average) Speed	24.1	mph
10 mph Pace	19.6 - 29.6	mph
Percent in Pace	80.3	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Wednesday, May 8, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	1	5	12	3	0	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	3	18	36	18	8	0	0	0	0	0	0	0	0	0	0	0	**85**
7:00 AM	34	82	103	79	26	2	0	0	0	3	0	0	0	0	0	0	0	**329**
8:00 AM	5	25	64	72	32	4	0	0	0	0	0	0	0	0	0	0	0	**202**
9:00 AM	1	14	47	95	32	8	0	0	0	0	0	0	0	0	0	0	0	**197**
10:00 AM	0	6	51	80	40	6	1	0	0	0	0	0	0	0	0	0	0	**184**
11:00 AM	6	27	56	94	56	9	1	0	0	0	0	0	0	0	0	0	0	**249**
12:00 PM	5	21	76	99	29	6	1	0	0	0	0	0	0	0	0	0	0	**237**
1:00 PM	6	23	71	113	38	7	0	0	0	0	0	0	0	0	0	0	0	**258**
2:00 PM	29	45	91	110	49	4	0	0	0	0	0	0	0	0	0	0	0	**328**
3:00 PM	14	54	77	103	45	7	1	0	0	0	0	0	0	0	0	0	0	**301**
4:00 PM	13	47	97	104	47	5	1	0	0	0	0	0	0	0	0	0	0	**314**
5:00 PM	29	74	109	84	35	7	1	0	0	0	0	0	0	0	0	0	0	**339**
6:00 PM	4	14	51	101	52	9	0	0	0	0	0	0	0	0	0	0	0	**231**
7:00 PM	1	3	20	68	42	4	1	0	0	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	2	13	33	37	4	0	0	0	0	0	0	0	0	0	0	0	**89**
9:00 PM	1	5	13	39	21	2	1	0	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	2	12	14	3	0	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	1	1	12	8	1	0	0	0	0	0	0	0	0	0	0	0	**23**
Total	**150**	**447**	**968**	**1,344**	**642**	**101**	**8**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,663**
Percent	**4.1%**	**12.2%**	**26.4%**	**36.7%**	**17.5%**	**2.8%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	20.9	mph	Mean (Average) Speed	20.5	mph
85th Percentile	25.9	mph	10 mph Pace	16.6 - 26.6	mph
95th Percentile	29.0	mph	Percent in Pace	65.6	%

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Wednesday, May 8, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	1	4	18	17	2	0	0	0	0	0	0	0	0	0	0	0	**42**
6:00 AM	0	2	13	94	53	11	1	0	0	0	0	0	0	0	0	0	0	**174**
7:00 AM	8	13	80	150	53	9	0	0	0	0	0	0	0	0	0	0	0	**313**
8:00 AM	1	3	29	118	62	13	1	0	0	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	5	27	106	61	9	0	1	0	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	0	18	74	50	17	1	0	0	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	0	13	60	58	11	0	0	0	0	0	0	0	0	0	0	0	**142**
12:00 PM	1	0	11	62	64	8	0	0	0	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	4	24	82	54	11	1	0	0	0	0	0	0	0	0	0	0	**176**
2:00 PM	2	0	25	80	59	22	2	0	0	0	0	0	0	0	0	0	0	**190**
3:00 PM	2	1	17	52	72	13	1	1	0	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	7	29	109	55	12	1	0	0	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	0	12	79	51	4	2	0	0	0	0	0	0	0	0	0	0	**150**
6:00 PM	0	2	5	50	51	9	2	0	0	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	0	1	43	56	11	1	0	0	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	1	6	19	32	7	0	0	0	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	1	2	21	26	2	1	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	0	0	9	21	1	0	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	0	2	5	7	4	1	0	0	0	0	0	0	0	0	0	0	**19**
Total	**16**	**40**	**320**	**1,239**	**913**	**178**	**15**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,724**
Percent	**0.6%**	**1.5%**	**11.7%**	**45.5%**	**33.5%**	**6.5%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	24.2	mph	Mean (Average) Speed	24.1	mph
85th Percentile	28.3	mph	10 mph Pace	19.6 - 29.6	mph
95th Percentile	30.8	mph	Percent in Pace	80.29	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	1	5	12	3	0	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	2	3	18	36	18	8	0	0	0	0	0	0	0	0	0	0	0	**85**
7:00 AM	34	82	103	79	26	2	0	0	0	3	0	0	0	0	0	0	0	**329**
8:00 AM	5	25	64	72	32	4	0	0	0	0	0	0	0	0	0	0	0	**202**
9:00 AM	1	14	47	95	32	8	0	0	0	0	0	0	0	0	0	0	0	**197**
10:00 AM	0	6	51	80	40	6	1	0	0	0	0	0	0	0	0	0	0	**184**
11:00 AM	6	27	56	94	56	9	1	0	0	0	0	0	0	0	0	0	0	**249**
12:00 PM	5	21	76	99	29	6	1	0	0	0	0	0	0	0	0	0	0	**237**
1:00 PM	6	23	71	113	38	7	0	0	0	0	0	0	0	0	0	0	0	**258**
2:00 PM	29	45	91	110	49	4	0	0	0	0	0	0	0	0	0	0	0	**328**
3:00 PM	14	54	77	103	45	7	1	0	0	0	0	0	0	0	0	0	0	**301**
4:00 PM	13	47	97	104	47	5	1	0	0	0	0	0	0	0	0	0	0	**314**
5:00 PM	29	74	109	84	35	7	1	0	0	0	0	0	0	0	0	0	0	**339**
6:00 PM	4	14	51	101	52	9	0	0	0	0	0	0	0	0	0	0	0	**231**
7:00 PM	1	3	20	68	42	4	1	0	0	0	0	0	0	0	0	0	0	**139**
8:00 PM	0	2	13	33	37	4	0	0	0	0	0	0	0	0	0	0	0	**89**
9:00 PM	1	5	13	39	21	2	1	0	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	2	12	14	3	0	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	1	1	12	8	1	0	0	0	0	0	0	0	0	0	0	0	**23**
Total	**150**	**447**	**968**	**1,344**	**642**	**101**	**8**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,663**
Percent	**4.1%**	**12.2%**	**26.4%**	**36.7%**	**17.5%**	**2.8%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	20.9	mph	Mean (Average) Speed	20.5	mph
85th Percentile	25.9	mph	10 mph Pace	16.6 - 26.6	mph
95th Percentile	29.0	mph	Percent in Pace	65.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 to 5/8/2019
Site Code: 29

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	**7**
5:00 AM	0	1	4	18	17	2	0	0	0	0	0	0	0	0	0	0	0	**42**
6:00 AM	0	2	13	94	53	11	1	0	0	0	0	0	0	0	0	0	0	**174**
7:00 AM	8	13	80	150	53	9	0	0	0	0	0	0	0	0	0	0	0	**313**
8:00 AM	1	3	29	118	62	13	1	0	0	0	0	0	0	0	0	0	0	**227**
9:00 AM	0	5	27	106	61	9	0	1	0	0	0	0	0	0	0	0	0	**209**
10:00 AM	0	0	18	74	50	17	1	0	0	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	0	13	60	58	11	0	0	0	0	0	0	0	0	0	0	0	**142**
12:00 PM	1	0	11	62	64	8	0	0	0	0	0	0	0	0	0	0	0	**146**
1:00 PM	0	4	24	82	54	11	1	0	0	0	0	0	0	0	0	0	0	**176**
2:00 PM	2	0	25	80	59	22	2	0	0	0	0	0	0	0	0	0	0	**190**
3:00 PM	2	1	17	52	72	13	1	1	0	0	0	0	0	0	0	0	0	**159**
4:00 PM	0	7	29	109	55	12	1	0	0	0	0	0	0	0	0	0	0	**213**
5:00 PM	2	0	12	79	51	4	2	0	0	0	0	0	0	0	0	0	0	**150**
6:00 PM	0	2	5	50	51	9	2	0	0	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	0	1	43	56	11	1	0	0	0	0	0	0	0	0	0	0	**112**
8:00 PM	0	1	6	19	32	7	0	0	0	0	0	0	0	0	0	0	0	**65**
9:00 PM	0	1	2	21	26	2	1	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	0	0	9	21	1	0	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	0	2	5	7	4	1	0	0	0	0	0	0	0	0	0	0	**19**
Total	**16**	**40**	**320**	**1,239**	**913**	**178**	**15**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,724**
Percent	**0.6%**	**1.5%**	**11.7%**	**45.5%**	**33.5%**	**6.5%**	**0.6%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	24.2	mph	Mean (Average) Speed	24.1	mph
85th Percentile	28.3	mph	10 mph Pace	19.6 - 29.6	mph
95th Percentile	30.8	mph	Percent in Pace	80.3	%

Project Manager: (415) 310-6469
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Location: Lindaro St, B/W 3rd St & Andersen Dr
Date Range: 5/8/2019 - 5/14/2019
Site Code: 29

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	5	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10
1:00 AM	6	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	11
2:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
3:00 AM	5	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	8
4:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
5:00 AM	21	42	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	42	63
6:00 AM	85	174	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	174	259
7:00 AM	**329**	**313**	**642**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**329**	**313**	**642**
8:00 AM	202	227	429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	202	227	429
9:00 AM	197	209	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	209	406
10:00 AM	184	160	344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	184	160	344
11:00 AM	249	142	391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	249	142	391
12:00 PM	237	146	383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	237	146	383
1:00 PM	258	176	434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	258	176	434
2:00 PM	328	190	518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	328	190	518
3:00 PM	301	159	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	301	159	460
4:00 PM	314	**213**	**527**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	**213**	**527**
5:00 PM	**339**	150	489	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**339**	150	489
6:00 PM	231	119	350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	119	350
7:00 PM	139	112	251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139	112	251
8:00 PM	89	65	154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	65	154
9:00 PM	82	53	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	53	135
10:00 PM	31	31	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	31	62
11:00 PM	23	19	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	19	42
Total	3,663	2,724	6,387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,663	2,724	6,387
Percent	57%	43%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57%	43%	-
AM Peak	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	07:00	07:00
Vol.	329	313	642	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	329	313	642
PM Peak	17:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	16:00
Vol.	339	213	527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	339	213	527

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Los Ranchitos Rd, Northgate & N San Pedro

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 30

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	20	3,461	415	4	102	7	0	0	0	1	0	0	0	4,010
Percent	0.5%	86.3%	10.3%	0.1%	2.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	66	5,165	511	4	105	7	0	1	0	1	0	0	0	5,860
Percent	1.1%	88.1%	8.7%	0.1%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	86	8,626	926	8	207	14	0	1	0	2	0	0	0	9,870
Percent	0.9%	87.4%	9.4%	0.1%	2.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	17	4	0	2	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	46	9	0	2	0	0	0	0	0	0	0	0	**57**
7:00 AM	0	242	38	0	4	1	0	0	0	0	0	0	0	**285**
8:00 AM	0	208	26	0	11	2	0	0	0	0	0	0	0	**247**
9:00 AM	0	217	25	0	4	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	193	27	0	11	0	0	0	0	0	0	0	0	**232**
11:00 AM	3	212	31	0	9	1	0	0	0	0	0	0	0	**256**
12:00 PM	1	258	35	0	9	0	0	0	0	0	0	0	0	**303**
1:00 PM	1	275	26	0	6	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	269	37	0	12	1	0	0	0	0	0	0	0	**320**
3:00 PM	3	282	34	1	8	1	0	0	0	0	0	0	0	**329**
4:00 PM	5	259	33	0	8	0	0	0	0	0	0	0	0	**305**
5:00 PM	3	283	27	1	3	0	0	0	0	0	0	0	0	**317**
6:00 PM	0	225	21	2	6	1	0	0	0	0	0	0	0	**255**
7:00 PM	1	182	17	0	3	0	0	0	0	1	0	0	0	**204**
8:00 PM	0	118	12	0	2	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	81	2	0	1	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	63	4	0	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**20**	**3,461**	**415**	**4**	**102**	**7**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4,010**
Percent	**0.5%**	**86.3%**	**10.3%**	**0.1%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	22	7	0	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	4	101	10	0	7	0	0	0	0	0	0	0	0	**122**
7:00 AM	6	338	39	4	5	3	0	0	0	0	0	0	0	**395**
8:00 AM	4	463	48	0	12	0	0	0	0	0	0	0	0	**527**
9:00 AM	4	282	42	0	10	1	0	0	0	0	0	0	0	**339**
10:00 AM	4	252	26	0	9	1	0	1	0	0	0	0	0	**293**
11:00 AM	3	268	27	0	9	0	0	0	0	0	0	0	0	**307**
12:00 PM	6	320	37	0	5	0	0	0	0	0	0	0	0	**368**
1:00 PM	5	321	46	0	10	0	0	0	0	0	0	0	0	**382**
2:00 PM	2	365	39	0	6	0	0	0	0	0	0	0	0	**412**
3:00 PM	5	474	45	0	6	2	0	0	0	0	0	0	0	**532**
4:00 PM	7	451	34	0	8	0	0	0	0	0	0	0	0	**500**
5:00 PM	4	533	33	0	3	0	0	0	0	1	0	0	0	**574**
6:00 PM	5	337	21	0	6	0	0	0	0	0	0	0	0	**369**
7:00 PM	4	203	18	0	3	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	161	18	0	2	0	0	0	0	0	0	0	0	**181**
9:00 PM	2	146	13	0	2	0	0	0	0	0	0	0	0	**163**
10:00 PM	0	57	3	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	36	1	0	0	0	0	0	0	0	0	0	0	**37**
Total	**66**	**5,165**	**511**	**4**	**105**	**7**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5,860**
Percent	**1.1%**	**88.1%**	**8.7%**	**0.1%**	**1.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	17	4	0	2	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	46	9	0	2	0	0	0	0	0	0	0	0	**57**
7:00 AM	0	242	38	0	4	1	0	0	0	0	0	0	0	**285**
8:00 AM	0	208	26	0	11	2	0	0	0	0	0	0	0	**247**
9:00 AM	0	217	25	0	4	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	193	27	0	11	0	0	0	0	0	0	0	0	**232**
11:00 AM	3	212	31	0	9	1	0	0	0	0	0	0	0	**256**
12:00 PM	1	258	35	0	9	0	0	0	0	0	0	0	0	**303**
1:00 PM	1	275	26	0	6	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	269	37	0	12	1	0	0	0	0	0	0	0	**320**
3:00 PM	3	282	34	1	8	1	0	0	0	0	0	0	0	**329**
4:00 PM	5	259	33	0	8	0	0	0	0	0	0	0	0	**305**
5:00 PM	3	283	27	1	3	0	0	0	0	0	0	0	0	**317**
6:00 PM	0	225	21	2	6	1	0	0	0	0	0	0	0	**255**
7:00 PM	1	182	17	0	3	0	0	0	0	1	0	0	0	**204**
8:00 PM	0	118	12	0	2	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	81	2	0	1	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	63	4	0	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**20**	**3,461**	**415**	**4**	**102**	**7**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4,010**
Percent	**0.5%**	**86.3%**	**10.3%**	**0.1%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	22	7	0	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	4	101	10	0	7	0	0	0	0	0	0	0	0	**122**
7:00 AM	6	338	39	4	5	3	0	0	0	0	0	0	0	**395**
8:00 AM	4	463	48	0	12	0	0	0	0	0	0	0	0	**527**
9:00 AM	4	282	42	0	10	1	0	0	0	0	0	0	0	**339**
10:00 AM	4	252	26	0	9	1	0	1	0	0	0	0	0	**293**
11:00 AM	3	268	27	0	9	0	0	0	0	0	0	0	0	**307**
12:00 PM	6	320	37	0	5	0	0	0	0	0	0	0	0	**368**
1:00 PM	5	321	46	0	10	0	0	0	0	0	0	0	0	**382**
2:00 PM	2	365	39	0	6	0	0	0	0	0	0	0	0	**412**
3:00 PM	5	474	45	0	6	2	0	0	0	0	0	0	0	**532**
4:00 PM	7	451	34	0	8	0	0	0	0	0	0	0	0	**500**
5:00 PM	4	533	33	0	3	0	0	0	0	1	0	0	0	**574**
6:00 PM	5	337	21	0	6	0	0	0	0	0	0	0	0	**369**
7:00 PM	4	203	18	0	3	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	161	18	0	2	0	0	0	0	0	0	0	0	**181**
9:00 PM	2	146	13	0	2	0	0	0	0	0	0	0	0	**163**
10:00 PM	0	57	3	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	36	1	0	0	0	0	0	0	0	0	0	0	**37**
Total	**66**	**5,165**	**511**	**4**	**105**	**7**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5,860**
Percent	**1.1%**	**88.1%**	**8.7%**	**0.1%**	**1.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	17	4	0	2	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	46	9	0	2	0	0	0	0	0	0	0	0	**57**
7:00 AM	0	242	38	0	4	1	0	0	0	0	0	0	0	**285**
8:00 AM	0	208	26	0	11	2	0	0	0	0	0	0	0	**247**
9:00 AM	0	217	25	0	4	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	193	27	0	11	0	0	0	0	0	0	0	0	**232**
11:00 AM	3	212	31	0	9	1	0	0	0	0	0	0	0	**256**
12:00 PM	1	258	35	0	9	0	0	0	0	0	0	0	0	**303**
1:00 PM	1	275	26	0	6	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	269	37	0	12	1	0	0	0	0	0	0	0	**320**
3:00 PM	3	282	34	1	8	1	0	0	0	0	0	0	0	**329**
4:00 PM	5	259	33	0	8	0	0	0	0	0	0	0	0	**305**
5:00 PM	3	283	27	1	3	0	0	0	0	0	0	0	0	**317**
6:00 PM	0	225	21	2	6	1	0	0	0	0	0	0	0	**255**
7:00 PM	1	182	17	0	3	0	0	0	0	1	0	0	0	**204**
8:00 PM	0	118	12	0	2	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	81	2	0	1	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	63	4	0	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**20**	**3,461**	**415**	**4**	**102**	**7**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4,010**
Percent	**0.5%**	**86.3%**	**10.3%**	**0.1%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	1	22	7	0	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	4	101	10	0	7	0	0	0	0	0	0	0	0	**122**
7:00 AM	6	338	39	4	5	3	0	0	0	0	0	0	0	**395**
8:00 AM	4	463	48	0	12	0	0	0	0	0	0	0	0	**527**
9:00 AM	4	282	42	0	10	1	0	0	0	0	0	0	0	**339**
10:00 AM	4	252	26	0	9	1	0	1	0	0	0	0	0	**293**
11:00 AM	3	268	27	0	9	0	0	0	0	0	0	0	0	**307**
12:00 PM	6	320	37	0	5	0	0	0	0	0	0	0	0	**368**
1:00 PM	5	321	46	0	10	0	0	0	0	0	0	0	0	**382**
2:00 PM	2	365	39	0	6	0	0	0	0	0	0	0	0	**412**
3:00 PM	5	474	45	0	6	2	0	0	0	0	0	0	0	**532**
4:00 PM	7	451	34	0	8	0	0	0	0	0	0	0	0	**500**
5:00 PM	4	533	33	0	3	0	0	0	0	1	0	0	0	**574**
6:00 PM	5	337	21	0	6	0	0	0	0	0	0	0	0	**369**
7:00 PM	4	203	18	0	3	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	161	18	0	2	0	0	0	0	0	0	0	0	**181**
9:00 PM	2	146	13	0	2	0	0	0	0	0	0	0	0	**163**
10:00 PM	0	57	3	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	36	1	0	0	0	0	0	0	0	0	0	0	**37**
Total	**66**	**5,165**	**511**	**4**	**105**	**7**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5,860**
Percent	**1.1%**	**88.1%**	**8.7%**	**0.1%**	**1.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Los Ranchitos Rd, Northgate & N San Pedro

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 30

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	8	6	15	81	841	2,077	890	87	3	1	1	0	0	0	0	0	0	4,010
Percent	0.2%	0.1%	0.4%	2.0%	21.0%	51.8%	22.2%	2.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	19	36	20	169	1,638	2,901	961	95	16	2	3	0	0	0	0	0	0	5,860
Percent	0.3%	0.6%	0.3%	2.9%	28.0%	49.5%	16.4%	1.6%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	27	42	35	250	2,479	4,978	1,851	182	19	3	4	0	0	0	0	0	0	9,870
Percent	0.3%	0.4%	0.4%	2.5%	25.1%	50.4%	18.8%	1.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	32.5	mph	Mean (Average) Speed	32.5	mph
85th Percentile	36.4	mph	10 mph Pace	27.8 - 37.8	mph
95th Percentile	38.6	mph	Percent in Pace	83.0	%
Southbound			**Southbound**		
50th Percentile (Median)	31.7	mph	Mean (Average) Speed	31.6	mph
85th Percentile	35.5	mph	10 mph Pace	26.6 - 36.6	mph
95th Percentile	38.0	mph	Percent in Pace	82.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

idax DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	2	2	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	0	0	1	2	9	8	3	0	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	0	0	2	6	35	13	1	0	0	0	0	0	0	0	0	0	**57**
7:00 AM	1	1	0	2	67	150	60	3	0	1	0	0	0	0	0	0	0	**285**
8:00 AM	1	0	0	12	54	123	53	3	1	0	0	0	0	0	0	0	0	**247**
9:00 AM	1	0	0	8	44	122	61	10	0	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	0	2	5	40	130	46	8	0	0	0	0	0	0	0	0	0	**232**
11:00 AM	1	1	1	3	60	142	47	1	0	0	0	0	0	0	0	0	0	**256**
12:00 PM	0	0	0	5	52	159	79	8	0	0	0	0	0	0	0	0	0	**303**
1:00 PM	0	0	0	1	44	165	88	10	0	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	0	2	3	48	187	73	6	0	0	0	0	0	0	0	0	0	**320**
3:00 PM	0	0	3	3	67	172	73	10	1	0	0	0	0	0	0	0	0	**329**
4:00 PM	1	1	3	12	66	150	69	3	0	0	0	0	0	0	0	0	0	**305**
5:00 PM	0	0	2	10	73	162	61	8	1	0	0	0	0	0	0	0	0	**317**
6:00 PM	1	1	0	2	74	122	51	3	0	0	1	0	0	0	0	0	0	**255**
7:00 PM	0	0	0	5	56	94	47	2	0	0	0	0	0	0	0	0	0	**204**
8:00 PM	0	1	0	2	37	66	23	3	0	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	1	0	4	22	37	17	3	0	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	0	0	1	16	36	13	1	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	0	1	0	7	9	4	0	0	0	0	0	0	0	0	0	0	**21**
Total	**8**	**6**	**15**	**81**	**841**	**2,077**	**890**	**87**	**3**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4,010**
Percent	**0.2%**	**0.1%**	**0.4%**	**2.0%**	**21.0%**	**51.8%**	**22.2%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.5	mph	Mean (Average) Speed	32.5	mph
85th Percentile	36.4	mph	10 mph Pace	27.8 - 37.8	mph
95th Percentile	38.6	mph	Percent in Pace	83.0	%

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	5	7	2	1	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	0	0	0	2	1	1	0	1	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	3	0	2	1	1	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	0	1	1	6	1	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	0	1	0	9	10	9	1	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	0	3	3	5	38	50	20	2	1	0	0	0	0	0	0	0	0	**122**
7:00 AM	0	5	1	11	86	213	71	7	1	0	0	0	0	0	0	0	0	**395**
8:00 AM	2	1	2	25	135	272	84	6	0	0	0	0	0	0	0	0	0	**527**
9:00 AM	1	4	0	16	89	161	61	6	1	0	0	0	0	0	0	0	0	**339**
10:00 AM	1	3	0	6	92	153	34	3	1	0	0	0	0	0	0	0	0	**293**
11:00 AM	2	1	1	7	82	162	49	2	1	0	0	0	0	0	0	0	0	**307**
12:00 PM	0	2	0	7	105	187	56	9	2	0	0	0	0	0	0	0	0	**368**
1:00 PM	1	2	0	15	103	189	60	11	1	0	0	0	0	0	0	0	0	**382**
2:00 PM	3	0	0	4	126	200	74	4	1	0	0	0	0	0	0	0	0	**412**
3:00 PM	3	3	1	11	176	266	70	2	0	0	0	0	0	0	0	0	0	**532**
4:00 PM	2	4	4	13	150	245	75	7	0	0	0	0	0	0	0	0	0	**500**
5:00 PM	3	2	0	9	144	291	113	9	2	1	0	0	0	0	0	0	0	**574**
6:00 PM	0	4	3	11	76	197	66	9	1	0	2	0	0	0	0	0	0	**369**
7:00 PM	1	1	1	10	73	101	36	5	0	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	0	0	9	66	77	26	3	0	0	0	0	0	0	0	0	0	**181**
9:00 PM	0	1	2	5	49	67	32	4	1	1	1	0	0	0	0	0	0	**163**
10:00 PM	0	0	0	3	21	30	6	2	0	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	0	1	0	7	20	8	0	1	0	0	0	0	0	0	0	0	**37**
Total	**19**	**36**	**20**	**169**	**1,638**	**2,901**	**961**	**95**	**16**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**5,860**
Percent	**0.3%**	**0.6%**	**0.3%**	**2.9%**	**28.0%**	**49.5%**	**16.4%**	**1.6%**	**0.3%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	31.7	mph	Mean (Average) Speed	31.6	mph
85th Percentile	35.5	mph	10 mph Pace	26.6 - 36.6	mph
95th Percentile	38.0	mph	Percent in Pace	82.54	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	2	2	1	0	0	0	0	0	0	0	0	0	0	**6**
1:00 AM	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	0	0	1	2	9	8	3	0	0	0	0	0	0	0	0	0	**23**
6:00 AM	0	0	0	2	6	35	13	1	0	0	0	0	0	0	0	0	0	**57**
7:00 AM	1	1	0	2	67	150	60	3	0	1	0	0	0	0	0	0	0	**285**
8:00 AM	1	0	0	12	54	123	53	3	1	0	0	0	0	0	0	0	0	**247**
9:00 AM	1	0	0	8	44	122	61	10	0	0	0	0	0	0	0	0	0	**246**
10:00 AM	1	0	2	5	40	130	46	8	0	0	0	0	0	0	0	0	0	**232**
11:00 AM	1	1	1	3	60	142	47	1	0	0	0	0	0	0	0	0	0	**256**
12:00 PM	0	0	0	5	52	159	79	8	0	0	0	0	0	0	0	0	0	**303**
1:00 PM	0	0	0	1	44	165	88	10	0	0	0	0	0	0	0	0	0	**308**
2:00 PM	1	0	2	3	48	187	73	6	0	0	0	0	0	0	0	0	0	**320**
3:00 PM	0	0	3	3	67	172	73	10	1	0	0	0	0	0	0	0	0	**329**
4:00 PM	1	1	3	12	66	150	69	3	0	0	0	0	0	0	0	0	0	**305**
5:00 PM	0	0	2	10	73	162	61	8	1	0	0	0	0	0	0	0	0	**317**
6:00 PM	1	1	0	2	74	122	51	3	0	0	1	0	0	0	0	0	0	**255**
7:00 PM	0	0	0	5	56	94	47	2	0	0	0	0	0	0	0	0	0	**204**
8:00 PM	0	1	0	2	37	66	23	3	0	0	0	0	0	0	0	0	0	**132**
9:00 PM	0	1	0	4	22	37	17	3	0	0	0	0	0	0	0	0	0	**84**
10:00 PM	0	0	0	1	16	36	13	1	0	0	0	0	0	0	0	0	0	**67**
11:00 PM	0	0	1	0	7	9	4	0	0	0	0	0	0	0	0	0	0	**21**
Total	**8**	**6**	**15**	**81**	**841**	**2,077**	**890**	**87**	**3**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4,010**
Percent	**0.2%**	**0.1%**	**0.4%**	**2.0%**	**21.0%**	**51.8%**	**22.2%**	**2.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.5	mph	Mean (Average) Speed	32.5	mph
85th Percentile	36.4	mph	10 mph Pace	27.8 - 37.8	mph
95th Percentile	38.6	mph	Percent in Pace	83.0	%

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 to 4/25/2019
Site Code: 30

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	5	7	2	1	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	0	0	0	2	1	1	0	1	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	3	0	2	1	1	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	0	1	1	6	1	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	0	1	0	9	10	9	1	0	0	0	0	0	0	0	0	0	**30**
6:00 AM	0	3	3	5	38	50	20	2	1	0	0	0	0	0	0	0	0	**122**
7:00 AM	0	5	1	11	86	213	71	7	1	0	0	0	0	0	0	0	0	**395**
8:00 AM	2	1	2	25	135	272	84	6	0	0	0	0	0	0	0	0	0	**527**
9:00 AM	1	4	0	16	89	161	61	6	1	0	0	0	0	0	0	0	0	**339**
10:00 AM	1	3	0	6	92	153	34	3	1	0	0	0	0	0	0	0	0	**293**
11:00 AM	2	1	1	7	82	162	49	2	1	0	0	0	0	0	0	0	0	**307**
12:00 PM	0	2	0	7	105	187	56	9	2	0	0	0	0	0	0	0	0	**368**
1:00 PM	1	2	0	15	103	189	60	11	1	0	0	0	0	0	0	0	0	**382**
2:00 PM	3	0	0	4	126	200	74	4	1	0	0	0	0	0	0	0	0	**412**
3:00 PM	3	3	1	11	176	266	70	2	0	0	0	0	0	0	0	0	0	**532**
4:00 PM	2	4	4	13	150	245	75	7	0	0	0	0	0	0	0	0	0	**500**
5:00 PM	3	2	0	9	144	291	113	9	2	1	0	0	0	0	0	0	0	**574**
6:00 PM	0	4	3	11	76	197	66	9	1	0	2	0	0	0	0	0	0	**369**
7:00 PM	1	1	1	10	73	101	36	5	0	0	0	0	0	0	0	0	0	**228**
8:00 PM	0	0	0	9	66	77	26	3	0	0	0	0	0	0	0	0	0	**181**
9:00 PM	0	1	2	5	49	67	32	4	1	1	1	0	0	0	0	0	0	**163**
10:00 PM	0	0	0	3	21	30	6	2	0	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	0	1	0	7	20	8	0	1	0	0	0	0	0	0	0	0	**37**
Total	**19**	**36**	**20**	**169**	**1,638**	**2,901**	**961**	**95**	**16**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**5,860**
Percent	**0.3%**	**0.6%**	**0.3%**	**2.9%**	**28.0%**	**49.5%**	**16.4%**	**1.6%**	**0.3%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	31.7	mph	Mean (Average) Speed	31.6	mph
85th Percentile	35.5	mph	10 mph Pace	26.6 - 36.6	mph
95th Percentile	38.0	mph	Percent in Pace	82.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, Northgate & N San Pedro
Date Range: 4/25/2019 - 5/1/2019
Site Code: 30

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	6	16	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	16	22
1:00 AM	5	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10
2:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
3:00 AM	3	7	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	10
4:00 AM	2	9	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	9	11
5:00 AM	23	30	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	30	53
6:00 AM	57	122	179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	122	179
7:00 AM	**285**	395	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**285**	395	680
8:00 AM	247	**527**	**774**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	**527**	**774**
9:00 AM	246	339	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246	339	585
10:00 AM	232	293	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	293	525
11:00 AM	256	307	563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	307	563
12:00 PM	303	368	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	303	368	671
1:00 PM	308	382	690	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	308	382	690
2:00 PM	320	412	732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	320	412	732
3:00 PM	**329**	532	861	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**329**	532	861
4:00 PM	305	500	805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305	500	805
5:00 PM	317	**574**	**891**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	317	**574**	**891**
6:00 PM	255	369	624	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255	369	624
7:00 PM	204	228	432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	228	432
8:00 PM	132	181	313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	181	313
9:00 PM	84	163	247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	163	247
10:00 PM	67	62	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	62	129
11:00 PM	21	37	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	37	58
Total	4,010	5,860	9,870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,010	5,860	9,870
Percent	41%	59%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41%	59%	-
AM Peak	07:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	08:00	08:00
Vol.	285	527	774	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	285	527	774
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	329	574	891	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	329	574	891

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 31

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	80	1,865	293	0	97	1	0	1	0	0	0	0	0	2,337
Percent	3.4%	79.8%	12.5%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	15	5,389	698	0	144	20	0	0	1	0	0	0	0	6,267
Percent	0.2%	86.0%	11.1%	0.0%	2.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	95	7,254	991	0	241	21	0	1	1	0	0	0	0	8,604
Percent	1.1%	84.3%	11.5%	0.0%	2.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	1	22	1	0	1	0	0	0	0	0	0	0	0	**25**
7:00 AM	4	109	20	0	4	0	0	0	0	0	0	0	0	**137**
8:00 AM	3	112	25	0	6	0	0	0	0	0	0	0	0	**146**
9:00 AM	3	99	16	0	4	0	0	0	0	0	0	0	0	**122**
10:00 AM	3	98	31	0	9	0	0	0	0	0	0	0	0	**141**
11:00 AM	7	127	17	0	11	0	0	0	0	0	0	0	0	**162**
12:00 PM	7	128	28	0	5	0	0	0	0	0	0	0	0	**168**
1:00 PM	4	150	13	0	7	1	0	0	0	0	0	0	0	**175**
2:00 PM	8	132	16	0	8	0	0	0	0	0	0	0	0	**164**
3:00 PM	5	154	28	0	10	0	0	0	0	0	0	0	0	**197**
4:00 PM	7	150	31	0	10	0	0	0	0	0	0	0	0	**198**
5:00 PM	9	162	23	0	4	0	0	0	0	0	0	0	0	**198**
6:00 PM	6	130	16	0	5	0	0	0	0	0	0	0	0	**157**
7:00 PM	7	99	11	0	5	0	0	1	0	0	0	0	0	**123**
8:00 PM	2	80	6	0	4	0	0	0	0	0	0	0	0	**92**
9:00 PM	1	46	3	0	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	1	37	3	0	2	0	0	0	0	0	0	0	0	**43**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**80**	**1,865**	**293**	**0**	**97**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**3.4%**	**79.8%**	**12.5%**	**0.0%**	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	20	1	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	**40**
6:00 AM	0	108	17	0	11	2	0	0	0	0	0	0	0	**138**
7:00 AM	1	349	60	0	13	2	0	0	0	0	0	0	0	**425**
8:00 AM	2	511	61	0	12	2	0	0	1	0	0	0	0	**589**
9:00 AM	0	323	52	0	19	4	0	0	0	0	0	0	0	**398**
10:00 AM	0	270	39	0	9	0	0	0	0	0	0	0	0	**318**
11:00 AM	0	271	45	0	11	0	0	0	0	0	0	0	0	**327**
12:00 PM	3	302	42	0	7	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	297	54	0	10	1	0	0	0	0	0	0	0	**362**
2:00 PM	2	352	49	0	11	1	0	0	0	0	0	0	0	**415**
3:00 PM	2	436	61	0	7	0	0	0	0	0	0	0	0	**506**
4:00 PM	3	478	46	0	8	1	0	0	0	0	0	0	0	**536**
5:00 PM	0	566	54	0	8	0	0	0	0	0	0	0	0	**628**
6:00 PM	1	368	35	0	4	0	0	0	0	0	0	0	0	**408**
7:00 PM	0	203	24	0	5	3	0	0	0	0	0	0	0	**235**
8:00 PM	1	178	23	0	5	1	0	0	0	0	0	0	0	**208**
9:00 PM	0	176	14	0	1	1	0	0	0	0	0	0	0	**192**
10:00 PM	0	79	6	0	3	0	0	0	0	0	0	0	0	**88**
11:00 PM	0	45	1	0	0	2	0	0	0	0	0	0	0	**48**
Total	**15**	**5,389**	**698**	**0**	**144**	**20**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.2%**	**86.0%**	**11.1%**	**0.0%**	**2.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	1	22	1	0	1	0	0	0	0	0	0	0	0	**25**
7:00 AM	4	109	20	0	4	0	0	0	0	0	0	0	0	**137**
8:00 AM	3	112	25	0	6	0	0	0	0	0	0	0	0	**146**
9:00 AM	3	99	16	0	4	0	0	0	0	0	0	0	0	**122**
10:00 AM	3	98	31	0	9	0	0	0	0	0	0	0	0	**141**
11:00 AM	7	127	17	0	11	0	0	0	0	0	0	0	0	**162**
12:00 PM	7	128	28	0	5	0	0	0	0	0	0	0	0	**168**
1:00 PM	4	150	13	0	7	1	0	0	0	0	0	0	0	**175**
2:00 PM	8	132	16	0	8	0	0	0	0	0	0	0	0	**164**
3:00 PM	5	154	28	0	10	0	0	0	0	0	0	0	0	**197**
4:00 PM	7	150	31	0	10	0	0	0	0	0	0	0	0	**198**
5:00 PM	9	162	23	0	4	0	0	0	0	0	0	0	0	**198**
6:00 PM	6	130	16	0	5	0	0	0	0	0	0	0	0	**157**
7:00 PM	7	99	11	0	5	0	0	1	0	0	0	0	0	**123**
8:00 PM	2	80	6	0	4	0	0	0	0	0	0	0	0	**92**
9:00 PM	1	46	3	0	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	1	37	3	0	2	0	0	0	0	0	0	0	0	**43**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**80**	**1,865**	**293**	**0**	**97**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**3.4%**	**79.8%**	**12.5%**	**0.0%**	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	20	1	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	**40**
6:00 AM	0	108	17	0	11	2	0	0	0	0	0	0	0	**138**
7:00 AM	1	349	60	0	13	2	0	0	0	0	0	0	0	**425**
8:00 AM	2	511	61	0	12	2	0	0	1	0	0	0	0	**589**
9:00 AM	0	323	52	0	19	4	0	0	0	0	0	0	0	**398**
10:00 AM	0	270	39	0	9	0	0	0	0	0	0	0	0	**318**
11:00 AM	0	271	45	0	11	0	0	0	0	0	0	0	0	**327**
12:00 PM	3	302	42	0	7	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	297	54	0	10	1	0	0	0	0	0	0	0	**362**
2:00 PM	2	352	49	0	11	1	0	0	0	0	0	0	0	**415**
3:00 PM	2	436	61	0	7	0	0	0	0	0	0	0	0	**506**
4:00 PM	3	478	46	0	8	1	0	0	0	0	0	0	0	**536**
5:00 PM	0	566	54	0	8	0	0	0	0	0	0	0	0	**628**
6:00 PM	1	368	35	0	4	0	0	0	0	0	0	0	0	**408**
7:00 PM	0	203	24	0	5	3	0	0	0	0	0	0	0	**235**
8:00 PM	1	178	23	0	5	1	0	0	0	0	0	0	0	**208**
9:00 PM	0	176	14	0	1	1	0	0	0	0	0	0	0	**192**
10:00 PM	0	79	6	0	3	0	0	0	0	0	0	0	0	**88**
11:00 PM	0	45	1	0	0	2	0	0	0	0	0	0	0	**48**
Total	**15**	**5,389**	**698**	**0**	**144**	**20**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.2%**	**86.0%**	**11.1%**	**0.0%**	**2.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	11	2	0	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	1	22	1	0	1	0	0	0	0	0	0	0	0	**25**
7:00 AM	4	109	20	0	4	0	0	0	0	0	0	0	0	**137**
8:00 AM	3	112	25	0	6	0	0	0	0	0	0	0	0	**146**
9:00 AM	3	99	16	0	4	0	0	0	0	0	0	0	0	**122**
10:00 AM	3	98	31	0	9	0	0	0	0	0	0	0	0	**141**
11:00 AM	7	127	17	0	11	0	0	0	0	0	0	0	0	**162**
12:00 PM	7	128	28	0	5	0	0	0	0	0	0	0	0	**168**
1:00 PM	4	150	13	0	7	1	0	0	0	0	0	0	0	**175**
2:00 PM	8	132	16	0	8	0	0	0	0	0	0	0	0	**164**
3:00 PM	5	154	28	0	10	0	0	0	0	0	0	0	0	**197**
4:00 PM	7	150	31	0	10	0	0	0	0	0	0	0	0	**198**
5:00 PM	9	162	23	0	4	0	0	0	0	0	0	0	0	**198**
6:00 PM	6	130	16	0	5	0	0	0	0	0	0	0	0	**157**
7:00 PM	7	99	11	0	5	0	0	1	0	0	0	0	0	**123**
8:00 PM	2	80	6	0	4	0	0	0	0	0	0	0	0	**92**
9:00 PM	1	46	3	0	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	1	37	3	0	2	0	0	0	0	0	0	0	0	**43**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**80**	**1,865**	**293**	**0**	**97**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**3.4%**	**79.8%**	**12.5%**	**0.0%**	**4.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	20	1	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	33	7	0	0	0	0	0	0	0	0	0	0	**40**
6:00 AM	0	108	17	0	11	2	0	0	0	0	0	0	0	**138**
7:00 AM	1	349	60	0	13	2	0	0	0	0	0	0	0	**425**
8:00 AM	2	511	61	0	12	2	0	0	1	0	0	0	0	**589**
9:00 AM	0	323	52	0	19	4	0	0	0	0	0	0	0	**398**
10:00 AM	0	270	39	0	9	0	0	0	0	0	0	0	0	**318**
11:00 AM	0	271	45	0	11	0	0	0	0	0	0	0	0	**327**
12:00 PM	3	302	42	0	7	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	297	54	0	10	1	0	0	0	0	0	0	0	**362**
2:00 PM	2	352	49	0	11	1	0	0	0	0	0	0	0	**415**
3:00 PM	2	436	61	0	7	0	0	0	0	0	0	0	0	**506**
4:00 PM	3	478	46	0	8	1	0	0	0	0	0	0	0	**536**
5:00 PM	0	566	54	0	8	0	0	0	0	0	0	0	0	**628**
6:00 PM	1	368	35	0	4	0	0	0	0	0	0	0	0	**408**
7:00 PM	0	203	24	0	5	3	0	0	0	0	0	0	0	**235**
8:00 PM	1	178	23	0	5	1	0	0	0	0	0	0	0	**208**
9:00 PM	0	176	14	0	1	1	0	0	0	0	0	0	0	**192**
10:00 PM	0	79	6	0	3	0	0	0	0	0	0	0	0	**88**
11:00 PM	0	45	1	0	0	2	0	0	0	0	0	0	0	**48**
Total	**15**	**5,389**	**698**	**0**	**144**	**20**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.2%**	**86.0%**	**11.1%**	**0.0%**	**2.3%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 31

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	5	26	21	88	412	974	671	123	15	1	1	0	0	0	0	0	0	2,337
Percent	0.2%	1.1%	0.9%	3.8%	17.6%	41.7%	28.7%	5.3%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	27	21	76	350	1,574	2,682	1,254	246	26	11	0	0	0	0	0	0	0	6,267
Percent	0.4%	0.3%	1.2%	5.6%	25.1%	42.8%	20.0%	3.9%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	32	47	97	438	1,986	3,656	1,925	369	41	12	1	0	0	0	0	0	0	8,604
Percent	0.4%	0.5%	1.1%	5.1%	23.1%	42.5%	22.4%	4.3%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	33.1	mph	Mean (Average) Speed	32.9	mph
85th Percentile	37.7	mph	10 mph Pace	28.4 - 38.4	mph
95th Percentile	40.6	mph	Percent in Pace	73.5	%
Southbound			**Southbound**		
50th Percentile (Median)	32.0	mph	Mean (Average) Speed	31.8	mph
85th Percentile	36.7	mph	10 mph Pace	27.0 - 37.0	mph
95th Percentile	39.7	mph	Percent in Pace	73.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	1	0	2	1	3	3	3	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	0	0	0	1	3	9	9	3	0	0	0	0	0	0	0	0	0	**25**
7:00 AM	0	0	3	11	26	54	39	4	0	0	0	0	0	0	0	0	0	**137**
8:00 AM	0	1	1	9	36	63	32	4	0	0	0	0	0	0	0	0	0	**146**
9:00 AM	2	1	0	1	23	49	33	11	2	0	0	0	0	0	0	0	0	**122**
10:00 AM	0	1	1	3	22	67	39	7	1	0	0	0	0	0	0	0	0	**141**
11:00 AM	1	1	0	3	27	75	44	11	0	0	0	0	0	0	0	0	0	**162**
12:00 PM	0	0	4	10	28	62	58	6	0	0	0	0	0	0	0	0	0	**168**
1:00 PM	0	3	1	5	30	48	72	14	2	0	0	0	0	0	0	0	0	**175**
2:00 PM	1	1	1	7	19	77	52	5	1	0	0	0	0	0	0	0	0	**164**
3:00 PM	0	4	1	5	39	100	41	4	3	0	0	0	0	0	0	0	0	**197**
4:00 PM	0	0	2	5	34	84	61	11	1	0	0	0	0	0	0	0	0	**198**
5:00 PM	0	4	1	5	33	92	50	11	1	0	1	0	0	0	0	0	0	**198**
6:00 PM	0	2	1	5	29	61	52	7	0	0	0	0	0	0	0	0	0	**157**
7:00 PM	0	2	2	9	20	49	32	9	0	0	0	0	0	0	0	0	0	**123**
8:00 PM	1	2	3	3	16	37	23	6	1	0	0	0	0	0	0	0	0	**92**
9:00 PM	0	2	0	0	13	17	15	3	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	0	0	1	11	17	11	1	1	1	0	0	0	0	0	0	0	**43**
11:00 PM	0	1	0	1	1	5	3	1	0	0	0	0	0	0	0	0	0	**12**
Total	**5**	**26**	**21**	**88**	**412**	**974**	**671**	**123**	**15**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**0.2%**	**1.1%**	**0.9%**	**3.8%**	**17.6%**	**41.7%**	**28.7%**	**5.3%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	33.1	mph	Mean (Average) Speed	32.9	mph
85th Percentile	37.7	mph	10 mph Pace	28.4 - 38.4	mph
95th Percentile	40.6	mph	Percent in Pace	73.5	%

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	3	7	8	1	0	1	0	0	0	0	0	0	0	**21**
1:00 AM	0	0	1	0	2	1	1	1	0	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	1	5	7	3	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	1	1	1	6	10	9	6	5	1	0	0	0	0	0	0	0	**40**
6:00 AM	2	0	1	8	29	49	36	10	2	1	0	0	0	0	0	0	0	**138**
7:00 AM	3	3	2	13	87	185	101	26	4	1	0	0	0	0	0	0	0	**425**
8:00 AM	3	2	1	17	173	265	116	11	0	1	0	0	0	0	0	0	0	**589**
9:00 AM	4	1	4	18	108	162	86	13	1	1	0	0	0	0	0	0	0	**398**
10:00 AM	2	0	1	14	87	144	66	3	1	0	0	0	0	0	0	0	0	**318**
11:00 AM	1	1	2	15	96	135	67	9	1	0	0	0	0	0	0	0	0	**327**
12:00 PM	0	0	2	11	76	183	65	16	1	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	1	3	21	92	149	82	14	0	0	0	0	0	0	0	0	0	**362**
2:00 PM	1	3	5	19	85	190	94	18	0	0	0	0	0	0	0	0	0	**415**
3:00 PM	0	1	7	27	127	228	93	19	2	2	0	0	0	0	0	0	0	**506**
4:00 PM	0	2	17	32	143	255	69	16	2	0	0	0	0	0	0	0	0	**536**
5:00 PM	0	0	2	42	151	286	121	23	2	1	0	0	0	0	0	0	0	**628**
6:00 PM	0	1	8	34	107	152	89	16	0	1	0	0	0	0	0	0	0	**408**
7:00 PM	2	3	7	22	55	81	47	16	2	0	0	0	0	0	0	0	0	**235**
8:00 PM	6	0	5	22	65	65	38	7	0	0	0	0	0	0	0	0	0	**208**
9:00 PM	1	1	4	15	58	75	30	7	1	0	0	0	0	0	0	0	0	**192**
10:00 PM	1	0	3	11	14	37	18	4	0	0	0	0	0	0	0	0	0	**88**
11:00 PM	1	1	0	7	8	14	11	5	1	0	0	0	0	0	0	0	0	**48**
Total	**27**	**21**	**76**	**350**	**1,574**	**2,682**	**1,254**	**246**	**26**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.4%**	**0.3%**	**1.2%**	**5.6%**	**25.1%**	**42.8%**	**20.0%**	**3.9%**	**0.4%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.0	mph	Mean (Average) Speed	31.8	mph
85th Percentile	36.7	mph	10 mph Pace	27.0 - 37.0	mph
95th Percentile	39.7	mph	Percent in Pace	73.22	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

DATA SOLUTIONS

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	1	0	2	1	3	3	3	1	0	0	0	0	0	0	0	0	**14**
6:00 AM	0	0	0	1	3	9	9	3	0	0	0	0	0	0	0	0	0	**25**
7:00 AM	0	0	3	11	26	54	39	4	0	0	0	0	0	0	0	0	0	**137**
8:00 AM	0	1	1	9	36	63	32	4	0	0	0	0	0	0	0	0	0	**146**
9:00 AM	2	1	0	1	23	49	33	11	2	0	0	0	0	0	0	0	0	**122**
10:00 AM	0	1	1	3	22	67	39	7	1	0	0	0	0	0	0	0	0	**141**
11:00 AM	1	1	0	3	27	75	44	11	0	0	0	0	0	0	0	0	0	**162**
12:00 PM	0	0	4	10	28	62	58	6	0	0	0	0	0	0	0	0	0	**168**
1:00 PM	0	3	1	5	30	48	72	14	2	0	0	0	0	0	0	0	0	**175**
2:00 PM	1	1	1	7	19	77	52	5	1	0	0	0	0	0	0	0	0	**164**
3:00 PM	0	4	1	5	39	100	41	4	3	0	0	0	0	0	0	0	0	**197**
4:00 PM	0	0	2	5	34	84	61	11	1	0	0	0	0	0	0	0	0	**198**
5:00 PM	0	4	1	5	33	92	50	11	1	0	1	0	0	0	0	0	0	**198**
6:00 PM	0	2	1	5	29	61	52	7	0	0	0	0	0	0	0	0	0	**157**
7:00 PM	0	2	2	9	20	49	32	9	0	0	0	0	0	0	0	0	0	**123**
8:00 PM	1	2	3	3	16	37	23	6	1	0	0	0	0	0	0	0	0	**92**
9:00 PM	0	2	0	0	13	17	15	3	0	0	0	0	0	0	0	0	0	**50**
10:00 PM	0	0	0	1	11	17	11	1	1	1	0	0	0	0	0	0	0	**43**
11:00 PM	0	1	0	1	1	5	3	1	0	0	0	0	0	0	0	0	0	**12**
Total	**5**	**26**	**21**	**88**	**412**	**974**	**671**	**123**	**15**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2,337**
Percent	**0.2%**	**1.1%**	**0.9%**	**3.8%**	**17.6%**	**41.7%**	**28.7%**	**5.3%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	33.1	mph	Mean (Average) Speed	32.9	mph
85th Percentile	37.7	mph	10 mph Pace	28.4 - 38.4	mph
95th Percentile	40.6	mph	Percent in Pace	73.5	%

Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 to 4/25/2019
Site Code: 31

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	3	7	8	1	0	1	0	0	0	0	0	0	0	**21**
1:00 AM	0	0	1	0	2	1	1	1	0	1	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	1	5	7	3	0	0	0	0	0	0	0	0	0	**16**
5:00 AM	0	1	1	1	6	10	9	6	5	1	0	0	0	0	0	0	0	**40**
6:00 AM	2	0	1	8	29	49	36	10	2	1	0	0	0	0	0	0	0	**138**
7:00 AM	3	3	2	13	87	185	101	26	4	1	0	0	0	0	0	0	0	**425**
8:00 AM	3	2	1	17	173	265	116	11	0	1	0	0	0	0	0	0	0	**589**
9:00 AM	4	1	4	18	108	162	86	13	1	1	0	0	0	0	0	0	0	**398**
10:00 AM	2	0	1	14	87	144	66	3	1	0	0	0	0	0	0	0	0	**318**
11:00 AM	1	1	2	15	96	135	67	9	1	0	0	0	0	0	0	0	0	**327**
12:00 PM	0	0	2	11	76	183	65	16	1	0	0	0	0	0	0	0	0	**354**
1:00 PM	0	1	3	21	92	149	82	14	0	0	0	0	0	0	0	0	0	**362**
2:00 PM	1	3	5	19	85	190	94	18	0	0	0	0	0	0	0	0	0	**415**
3:00 PM	0	1	7	27	127	228	93	19	2	2	0	0	0	0	0	0	0	**506**
4:00 PM	0	2	17	32	143	255	69	16	2	0	0	0	0	0	0	0	0	**536**
5:00 PM	0	0	2	42	151	286	121	23	2	1	0	0	0	0	0	0	0	**628**
6:00 PM	0	1	8	34	107	152	89	16	0	1	0	0	0	0	0	0	0	**408**
7:00 PM	2	3	7	22	55	81	47	16	2	0	0	0	0	0	0	0	0	**235**
8:00 PM	6	0	5	22	65	65	38	7	0	0	0	0	0	0	0	0	0	**208**
9:00 PM	1	1	4	15	58	75	30	7	1	0	0	0	0	0	0	0	0	**192**
10:00 PM	1	0	3	11	14	37	18	4	0	0	0	0	0	0	0	0	0	**88**
11:00 PM	1	1	0	7	8	14	11	5	1	0	0	0	0	0	0	0	0	**48**
Total	**27**	**21**	**76**	**350**	**1,574**	**2,682**	**1,254**	**246**	**26**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,267**
Percent	**0.4%**	**0.3%**	**1.2%**	**5.6%**	**25.1%**	**42.8%**	**20.0%**	**3.9%**	**0.4%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.0	mph	Mean (Average) Speed	31.8	mph
85th Percentile	36.7	mph	10 mph Pace	27.0 - 37.0	mph
95th Percentile	39.7	mph	Percent in Pace	73.2	%

Project Manager: (415) 310-6469
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Location: Los Ranchitos Rd, B/W N San Pedro & Lincoln
Date Range: 4/25/2019 - 5/1/2019
Site Code: 31

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	3	21	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	21	24
1:00 AM	3	7	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	10
2:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
3:00 AM	2	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6
4:00 AM	2	16	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	16	18
5:00 AM	14	40	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	40	54
6:00 AM	25	138	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	138	163
7:00 AM	137	425	562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	425	562
8:00 AM	146	**589**	**735**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	**589**	**735**
9:00 AM	122	398	520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	398	520
10:00 AM	141	318	459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	141	318	459
11:00 AM	**162**	327	489	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**162**	327	489
12:00 PM	168	354	522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	168	354	522
1:00 PM	175	362	537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	362	537
2:00 PM	164	415	579	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	415	579
3:00 PM	197	506	703	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	506	703
4:00 PM	**198**	536	734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**198**	536	734
5:00 PM	**198**	**628**	**826**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**198**	**628**	**826**
6:00 PM	157	408	565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157	408	565
7:00 PM	123	235	358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	235	358
8:00 PM	92	208	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	208	300
9:00 PM	50	192	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	192	242
10:00 PM	43	88	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	88	131
11:00 PM	12	48	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	48	60
Total	2,337	6,267	8,604	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,337	6,267	8,604
Percent	27%	73%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27%	73%	-
AM Peak	11:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	08:00
Vol.	162	589	735	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162	589	735
PM Peak	16:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	17:00	17:00
Vol.	198	628	826	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	198	628	826

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 32

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	33	6,170	1,108	14	416	15	0	2	6	0	0	0	0	7,764
Percent	0.4%	79.5%	14.3%	0.2%	5.4%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	52	5,712	601	0	154	77	0	1	1	3	0	0	0	6,601
Percent	0.8%	86.5%	9.1%	0.0%	2.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	85	11,882	1,709	14	570	92	0	3	7	3	0	0	0	14,365
Percent	0.6%	82.7%	11.9%	0.1%	4.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
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Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	4	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	9	3	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	20	6	0	3	1	0	0	0	0	0	0	0	**30**
5:00 AM	0	93	23	0	4	0	0	0	0	0	0	0	0	**120**
6:00 AM	0	202	42	0	12	0	0	0	0	0	0	0	0	**256**
7:00 AM	1	511	82	0	25	0	0	0	0	0	0	0	0	**619**
8:00 AM	3	669	126	1	42	4	0	0	1	0	0	0	0	**846**
9:00 AM	2	479	81	1	39	1	0	0	1	0	0	0	0	**604**
10:00 AM	2	386	78	2	33	0	0	0	0	0	0	0	0	**501**
11:00 AM	2	391	68	3	31	2	0	0	1	0	0	0	0	**498**
12:00 PM	1	368	72	0	41	0	0	0	2	0	0	0	0	**484**
1:00 PM	3	349	76	3	36	2	0	1	0	0	0	0	0	**470**
2:00 PM	4	415	89	2	32	1	0	0	0	0	0	0	0	**543**
3:00 PM	5	461	77	0	31	1	0	0	0	0	0	0	0	**575**
4:00 PM	3	485	77	2	26	1	0	1	0	0	0	0	0	**595**
5:00 PM	3	446	83	0	23	1	0	0	1	0	0	0	0	**557**
6:00 PM	1	307	36	0	17	1	0	0	0	0	0	0	0	**362**
7:00 PM	3	198	37	0	3	0	0	0	0	0	0	0	0	**241**
8:00 PM	0	168	21	0	5	0	0	0	0	0	0	0	0	**194**
9:00 PM	0	112	16	0	1	0	0	0	0	0	0	0	0	**129**
10:00 PM	0	59	7	0	6	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	26	3	0	1	0	0	0	0	0	0	0	0	**30**
Total	**33**	**6,170**	**1,108**	**14**	**416**	**15**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**7,764**
Percent	**0.4%**	**79.5%**	**14.3%**	**0.2%**	**5.4%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
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Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	38	4	0	1	1	0	0	0	0	0	0	0	**44**
6:00 AM	0	87	20	0	6	4	0	0	0	0	0	0	0	**117**
7:00 AM	1	279	50	0	17	9	0	0	0	0	0	0	0	**356**
8:00 AM	2	350	37	0	12	11	0	0	0	0	0	0	0	**412**
9:00 AM	3	296	43	0	12	4	0	0	0	0	0	0	0	**358**
10:00 AM	7	293	42	0	11	2	0	0	0	1	0	0	0	**356**
11:00 AM	2	358	55	0	14	2	0	0	1	0	0	0	0	**432**
12:00 PM	5	375	43	0	13	3	0	0	0	1	0	0	0	**440**
1:00 PM	2	398	35	0	11	3	0	0	0	0	0	0	0	**449**
2:00 PM	5	467	43	0	14	7	0	0	0	0	0	0	0	**536**
3:00 PM	0	441	35	0	15	8	0	0	0	0	0	0	0	**499**
4:00 PM	7	441	56	0	9	5	0	1	0	1	0	0	0	**520**
5:00 PM	4	517	43	0	7	5	0	0	0	0	0	0	0	**576**
6:00 PM	8	435	37	0	5	6	0	0	0	0	0	0	0	**491**
7:00 PM	4	287	19	0	2	2	0	0	0	0	0	0	0	**314**
8:00 PM	0	256	13	0	2	1	0	0	0	0	0	0	0	**272**
9:00 PM	2	193	18	0	0	3	0	0	0	0	0	0	0	**216**
10:00 PM	0	103	4	0	1	0	0	0	0	0	0	0	0	**108**
11:00 PM	0	58	2	0	2	1	0	0	0	0	0	0	0	**63**
Total	**52**	**5,712**	**601**	**0**	**154**	**77**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**6,601**
Percent	**0.8%**	**86.5%**	**9.1%**	**0.0%**	**2.3%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	4	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	9	3	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	20	6	0	3	1	0	0	0	0	0	0	0	**30**
5:00 AM	0	93	23	0	4	0	0	0	0	0	0	0	0	**120**
6:00 AM	0	202	42	0	12	0	0	0	0	0	0	0	0	**256**
7:00 AM	1	511	82	0	25	0	0	0	0	0	0	0	0	**619**
8:00 AM	3	669	126	1	42	4	0	0	1	0	0	0	0	**846**
9:00 AM	2	479	81	1	39	1	0	0	1	0	0	0	0	**604**
10:00 AM	2	386	78	2	33	0	0	0	0	0	0	0	0	**501**
11:00 AM	2	391	68	3	31	2	0	0	1	0	0	0	0	**498**
12:00 PM	1	368	72	0	41	0	0	0	2	0	0	0	0	**484**
1:00 PM	3	349	76	3	36	2	0	1	0	0	0	0	0	**470**
2:00 PM	4	415	89	2	32	1	0	0	0	0	0	0	0	**543**
3:00 PM	5	461	77	0	31	1	0	0	0	0	0	0	0	**575**
4:00 PM	3	485	77	2	26	1	0	1	0	0	0	0	0	**595**
5:00 PM	3	446	83	0	23	1	0	0	1	0	0	0	0	**557**
6:00 PM	1	307	36	0	17	1	0	0	0	0	0	0	0	**362**
7:00 PM	3	198	37	0	3	0	0	0	0	0	0	0	0	**241**
8:00 PM	0	168	21	0	5	0	0	0	0	0	0	0	0	**194**
9:00 PM	0	112	16	0	1	0	0	0	0	0	0	0	0	**129**
10:00 PM	0	59	7	0	6	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	26	3	0	1	0	0	0	0	0	0	0	0	**30**
Total	**33**	**6,170**	**1,108**	**14**	**416**	**15**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**7,764**
Percent	**0.4%**	**79.5%**	**14.3%**	**0.2%**	**5.4%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	38	4	0	1	1	0	0	0	0	0	0	0	**44**
6:00 AM	0	87	20	0	6	4	0	0	0	0	0	0	0	**117**
7:00 AM	1	279	50	0	17	9	0	0	0	0	0	0	0	**356**
8:00 AM	2	350	37	0	12	11	0	0	0	0	0	0	0	**412**
9:00 AM	3	296	43	0	12	4	0	0	0	0	0	0	0	**358**
10:00 AM	7	293	42	0	11	2	0	0	0	1	0	0	0	**356**
11:00 AM	2	358	55	0	14	2	0	0	1	0	0	0	0	**432**
12:00 PM	5	375	43	0	13	3	0	0	0	1	0	0	0	**440**
1:00 PM	2	398	35	0	11	3	0	0	0	0	0	0	0	**449**
2:00 PM	5	467	43	0	14	7	0	0	0	0	0	0	0	**536**
3:00 PM	0	441	35	0	15	8	0	0	0	0	0	0	0	**499**
4:00 PM	7	441	56	0	9	5	0	1	0	1	0	0	0	**520**
5:00 PM	4	517	43	0	7	5	0	0	0	0	0	0	0	**576**
6:00 PM	8	435	37	0	5	6	0	0	0	0	0	0	0	**491**
7:00 PM	4	287	19	0	2	2	0	0	0	0	0	0	0	**314**
8:00 PM	0	256	13	0	2	1	0	0	0	0	0	0	0	**272**
9:00 PM	2	193	18	0	0	3	0	0	0	0	0	0	0	**216**
10:00 PM	0	103	4	0	1	0	0	0	0	0	0	0	0	**108**
11:00 PM	0	58	2	0	2	1	0	0	0	0	0	0	0	**63**
Total	**52**	**5,712**	**601**	**0**	**154**	**77**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**6,601**
Percent	**0.8%**	**86.5%**	**9.1%**	**0.0%**	**2.3%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	4	0	0	0	0	0	0	0	0	**10**
1:00 AM	0	9	3	0	1	0	0	0	0	0	0	0	0	**13**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	20	6	0	3	1	0	0	0	0	0	0	0	**30**
5:00 AM	0	93	23	0	4	0	0	0	0	0	0	0	0	**120**
6:00 AM	0	202	42	0	12	0	0	0	0	0	0	0	0	**256**
7:00 AM	1	511	82	0	25	0	0	0	0	0	0	0	0	**619**
8:00 AM	3	669	126	1	42	4	0	0	1	0	0	0	0	**846**
9:00 AM	2	479	81	1	39	1	0	0	1	0	0	0	0	**604**
10:00 AM	2	386	78	2	33	0	0	0	0	0	0	0	0	**501**
11:00 AM	2	391	68	3	31	2	0	0	1	0	0	0	0	**498**
12:00 PM	1	368	72	0	41	0	0	0	2	0	0	0	0	**484**
1:00 PM	3	349	76	3	36	2	0	1	0	0	0	0	0	**470**
2:00 PM	4	415	89	2	32	1	0	0	0	0	0	0	0	**543**
3:00 PM	5	461	77	0	31	1	0	0	0	0	0	0	0	**575**
4:00 PM	3	485	77	2	26	1	0	1	0	0	0	0	0	**595**
5:00 PM	3	446	83	0	23	1	0	0	1	0	0	0	0	**557**
6:00 PM	1	307	36	0	17	1	0	0	0	0	0	0	0	**362**
7:00 PM	3	198	37	0	3	0	0	0	0	0	0	0	0	**241**
8:00 PM	0	168	21	0	5	0	0	0	0	0	0	0	0	**194**
9:00 PM	0	112	16	0	1	0	0	0	0	0	0	0	0	**129**
10:00 PM	0	59	7	0	6	0	0	0	0	0	0	0	0	**72**
11:00 PM	0	26	3	0	1	0	0	0	0	0	0	0	0	**30**
Total	**33**	**6,170**	**1,108**	**14**	**416**	**15**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**7,764**
Percent	**0.4%**	**79.5%**	**14.3%**	**0.2%**	**5.4%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	38	4	0	1	1	0	0	0	0	0	0	0	**44**
6:00 AM	0	87	20	0	6	4	0	0	0	0	0	0	0	**117**
7:00 AM	1	279	50	0	17	9	0	0	0	0	0	0	0	**356**
8:00 AM	2	350	37	0	12	11	0	0	0	0	0	0	0	**412**
9:00 AM	3	296	43	0	12	4	0	0	0	0	0	0	0	**358**
10:00 AM	7	293	42	0	11	2	0	0	0	1	0	0	0	**356**
11:00 AM	2	358	55	0	14	2	0	0	1	0	0	0	0	**432**
12:00 PM	5	375	43	0	13	3	0	0	0	1	0	0	0	**440**
1:00 PM	2	398	35	0	11	3	0	0	0	0	0	0	0	**449**
2:00 PM	5	467	43	0	14	7	0	0	0	0	0	0	0	**536**
3:00 PM	0	441	35	0	15	8	0	0	0	0	0	0	0	**499**
4:00 PM	7	441	56	0	9	5	0	1	0	1	0	0	0	**520**
5:00 PM	4	517	43	0	7	5	0	0	0	0	0	0	0	**576**
6:00 PM	8	435	37	0	5	6	0	0	0	0	0	0	0	**491**
7:00 PM	4	287	19	0	2	2	0	0	0	0	0	0	0	**314**
8:00 PM	0	256	13	0	2	1	0	0	0	0	0	0	0	**272**
9:00 PM	2	193	18	0	0	3	0	0	0	0	0	0	0	**216**
10:00 PM	0	103	4	0	1	0	0	0	0	0	0	0	0	**108**
11:00 PM	0	58	2	0	2	1	0	0	0	0	0	0	0	**63**
Total	**52**	**5,712**	**601**	**0**	**154**	**77**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**6,601**
Percent	**0.8%**	**86.5%**	**9.1%**	**0.0%**	**2.3%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 32

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	1	2	6	4	43	456	2,164	3,092	1,530	380	66	17	2	1	0	0	0	7,764
Percent	0.0%	0.0%	0.1%	0.1%	0.6%	5.9%	27.9%	39.8%	19.7%	4.9%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	4	17	27	13	32	321	1,828	3,102	1,096	151	8	1	1	0	0	0	0	6,601
Percent	0.1%	0.3%	0.4%	0.2%	0.5%	4.9%	27.7%	47.0%	16.6%	2.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	5	19	33	17	75	777	3,992	6,194	2,626	531	74	18	3	1	0	0	0	14,365
Percent	0.0%	0.1%	0.2%	0.1%	0.5%	5.4%	27.8%	43.1%	18.3%	3.7%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	41.8	mph	Mean (Average) Speed	42.1	mph
85th Percentile	47.0	mph	10 mph Pace	37.0 - 47.0	mph
95th Percentile	50.7	mph	Percent in Pace	70.8	%
Westbound			**Westbound**		
50th Percentile (Median)	41.6	mph	Mean (Average) Speed	41.4	mph
85th Percentile	45.6	mph	10 mph Pace	36.9 - 46.9	mph
95th Percentile	48.5	mph	Percent in Pace	77.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	2	1	4	3	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	0	0	0	0	1	3	6	2	0	1	0	0	0	0	0	**13**
2:00 AM	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	0	0	0	2	4	2	2	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	0	0	0	1	2	8	5	9	5	0	0	0	0	0	0	**30**
5:00 AM	0	0	0	0	1	5	15	33	36	23	6	1	0	0	0	0	0	**120**
6:00 AM	0	0	0	0	0	10	40	85	84	28	8	1	0	0	0	0	0	**256**
7:00 AM	0	0	1	0	0	26	175	275	107	29	5	1	0	0	0	0	0	**619**
8:00 AM	0	0	0	0	11	105	318	312	88	8	3	1	0	0	0	0	0	**846**
9:00 AM	0	0	1	0	1	22	210	270	77	21	2	0	0	0	0	0	0	**604**
10:00 AM	0	0	1	1	1	20	121	212	115	28	1	1	0	0	0	0	0	**501**
11:00 AM	0	0	0	0	5	31	141	203	93	22	2	0	1	0	0	0	0	**498**
12:00 PM	0	0	2	0	1	30	143	191	93	21	3	0	0	0	0	0	0	**484**
1:00 PM	0	0	0	0	5	25	122	190	102	21	5	0	0	0	0	0	0	**470**
2:00 PM	0	2	1	2	3	35	134	211	122	28	3	2	0	0	0	0	0	**543**
3:00 PM	1	0	0	0	4	46	174	232	95	20	3	0	0	0	0	0	0	**575**
4:00 PM	0	0	0	0	0	43	170	230	128	19	3	2	0	0	0	0	0	**595**
5:00 PM	0	0	0	1	6	26	182	204	110	24	3	0	1	0	0	0	0	**557**
6:00 PM	0	0	0	0	0	5	53	168	101	28	7	0	0	0	0	0	0	**362**
7:00 PM	0	0	0	0	0	10	51	91	68	17	2	2	0	0	0	0	0	**241**
8:00 PM	0	0	0	0	0	2	61	78	38	12	1	1	0	1	0	0	0	**194**
9:00 PM	0	0	0	0	1	10	29	51	26	9	1	2	0	0	0	0	0	**129**
10:00 PM	0	0	0	0	2	3	12	28	22	4	0	1	0	0	0	0	0	**72**
11:00 PM	0	0	0	0	1	0	5	11	8	1	3	1	0	0	0	0	0	**30**
Total	**1**	**2**	**6**	**4**	**43**	**456**	**2,164**	**3,092**	**1,530**	**380**	**66**	**17**	**2**	**1**	**0**	**0**	**0**	**7,764**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.6%**	**5.9%**	**27.9%**	**39.8%**	**19.7%**	**4.9%**	**0.9%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	41.8	mph	Mean (Average) Speed	42.1	mph
85th Percentile	47.0	mph	10 mph Pace	37.0 - 47.0	mph
95th Percentile	50.7	mph	Percent in Pace	70.8	%

Project Manager: (415) 310-6469
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Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	3	7	6	1	0	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	0	0	0	2	5	1	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	0	0	2	1	3	0	1	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	1	0	0	0	0	2	2	1	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	1	0	3	3	11	14	8	4	0	0	0	0	0	0	0	**44**
6:00 AM	0	0	2	0	0	4	35	48	23	4	1	0	0	0	0	0	0	**117**
7:00 AM	0	1	1	0	5	30	127	146	38	8	0	0	0	0	0	0	0	**356**
8:00 AM	0	0	0	0	0	34	128	210	36	4	0	0	0	0	0	0	0	**412**
9:00 AM	0	2	1	0	0	20	103	179	49	3	1	0	0	0	0	0	0	**358**
10:00 AM	0	0	3	0	0	9	112	154	64	14	0	0	0	0	0	0	0	**356**
11:00 AM	1	0	3	0	4	18	124	208	67	7	0	0	0	0	0	0	0	**432**
12:00 PM	1	3	3	1	1	29	128	209	54	11	0	0	0	0	0	0	0	**440**
1:00 PM	0	0	0	5	6	30	94	194	102	17	1	0	0	0	0	0	0	**449**
2:00 PM	0	1	2	0	2	29	139	245	101	16	1	0	0	0	0	0	0	**536**
3:00 PM	0	0	0	1	0	22	137	231	103	5	0	0	0	0	0	0	0	**499**
4:00 PM	1	2	1	3	2	16	145	270	70	10	0	0	0	0	0	0	0	**520**
5:00 PM	0	1	3	0	0	20	177	276	90	9	0	0	0	0	0	0	0	**576**
6:00 PM	1	4	3	0	2	17	108	247	93	16	0	0	0	0	0	0	0	**491**
7:00 PM	0	3	0	1	1	2	67	157	75	8	0	0	0	0	0	0	0	**314**
8:00 PM	0	0	2	1	2	21	84	125	35	2	0	0	0	0	0	0	0	**272**
9:00 PM	0	0	0	1	4	10	61	93	40	3	2	1	1	0	0	0	0	**216**
10:00 PM	0	0	1	0	0	5	27	50	22	3	0	0	0	0	0	0	0	**108**
11:00 PM	0	0	0	0	0	2	13	31	12	4	1	0	0	0	0	0	0	**63**
Total	**4**	**17**	**27**	**13**	**32**	**321**	**1,828**	**3,102**	**1,096**	**151**	**8**	**1**	**1**	**0**	**0**	**0**	**0**	**6,601**
Percent	**0.1%**	**0.3%**	**0.4%**	**0.2%**	**0.5%**	**4.9%**	**27.7%**	**47.0%**	**16.6%**	**2.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	41.6	mph	Mean (Average) Speed	41.4	mph
85th Percentile	45.6	mph	10 mph Pace	36.9 - 46.9	mph
95th Percentile	48.5	mph	Percent in Pace	77.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	2	1	4	3	0	0	0	0	0	0	0	**10**
1:00 AM	0	0	0	0	0	0	1	3	6	2	0	1	0	0	0	0	0	**13**
2:00 AM	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	0	0	0	2	4	2	2	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	0	0	0	1	2	8	5	9	5	0	0	0	0	0	0	**30**
5:00 AM	0	0	0	0	1	5	15	33	36	23	6	1	0	0	0	0	0	**120**
6:00 AM	0	0	0	0	0	10	40	85	84	28	8	1	0	0	0	0	0	**256**
7:00 AM	0	0	1	0	0	26	175	275	107	29	5	1	0	0	0	0	0	**619**
8:00 AM	0	0	0	0	11	105	318	312	88	8	3	1	0	0	0	0	0	**846**
9:00 AM	0	0	1	0	1	22	210	270	77	21	2	0	0	0	0	0	0	**604**
10:00 AM	0	0	1	1	1	20	121	212	115	28	1	1	0	0	0	0	0	**501**
11:00 AM	0	0	0	0	5	31	141	203	93	22	2	0	1	0	0	0	0	**498**
12:00 PM	0	0	2	0	1	30	143	191	93	21	3	0	0	0	0	0	0	**484**
1:00 PM	0	0	0	0	5	25	122	190	102	21	5	0	0	0	0	0	0	**470**
2:00 PM	0	2	1	2	3	35	134	211	122	28	3	2	0	0	0	0	0	**543**
3:00 PM	1	0	0	0	4	46	174	232	95	20	3	0	0	0	0	0	0	**575**
4:00 PM	0	0	0	0	0	43	170	230	128	19	3	2	0	0	0	0	0	**595**
5:00 PM	0	0	0	1	6	26	182	204	110	24	3	0	1	0	0	0	0	**557**
6:00 PM	0	0	0	0	0	5	53	168	101	28	7	0	0	0	0	0	0	**362**
7:00 PM	0	0	0	0	0	10	51	91	68	17	2	2	0	0	0	0	0	**241**
8:00 PM	0	0	0	0	0	2	61	78	38	12	1	1	0	1	0	0	0	**194**
9:00 PM	0	0	0	0	1	10	29	51	26	9	1	2	0	0	0	0	0	**129**
10:00 PM	0	0	0	0	2	3	12	28	22	4	0	1	0	0	0	0	0	**72**
11:00 PM	0	0	0	0	1	0	5	11	8	1	3	1	0	0	0	0	0	**30**
Total	**1**	**2**	**6**	**4**	**43**	**456**	**2,164**	**3,092**	**1,530**	**380**	**66**	**17**	**2**	**1**	**0**	**0**	**0**	**7,764**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.6%**	**5.9%**	**27.9%**	**39.8%**	**19.7%**	**4.9%**	**0.9%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	41.8	mph	Mean (Average) Speed	42.1	mph
85th Percentile	47.0	mph	10 mph Pace	37.0 - 47.0	mph
95th Percentile	50.7	mph	Percent in Pace	70.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 to 4/25/2019
Site Code: 32

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	3	7	6	1	0	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	0	0	0	2	5	1	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	0	0	2	1	3	0	1	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	1	0	0	0	0	2	2	1	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	1	0	3	3	11	14	8	4	0	0	0	0	0	0	0	**44**
6:00 AM	0	0	2	0	0	4	35	48	23	4	1	0	0	0	0	0	0	**117**
7:00 AM	0	1	1	0	5	30	127	146	38	8	0	0	0	0	0	0	0	**356**
8:00 AM	0	0	0	0	0	34	128	210	36	4	0	0	0	0	0	0	0	**412**
9:00 AM	0	2	1	0	0	20	103	179	49	3	1	0	0	0	0	0	0	**358**
10:00 AM	0	0	3	0	0	9	112	154	64	14	0	0	0	0	0	0	0	**356**
11:00 AM	1	0	3	0	4	18	124	208	67	7	0	0	0	0	0	0	0	**432**
12:00 PM	1	3	3	1	1	29	128	209	54	11	0	0	0	0	0	0	0	**440**
1:00 PM	0	0	0	5	6	30	94	194	102	17	1	0	0	0	0	0	0	**449**
2:00 PM	0	1	2	0	2	29	139	245	101	16	1	0	0	0	0	0	0	**536**
3:00 PM	0	0	0	1	0	22	137	231	103	5	0	0	0	0	0	0	0	**499**
4:00 PM	1	2	1	3	2	16	145	270	70	10	0	0	0	0	0	0	0	**520**
5:00 PM	0	1	3	0	0	20	177	276	90	9	0	0	0	0	0	0	0	**576**
6:00 PM	1	4	3	0	2	17	108	247	93	16	0	0	0	0	0	0	0	**491**
7:00 PM	0	3	0	1	1	2	67	157	75	8	0	0	0	0	0	0	0	**314**
8:00 PM	0	0	2	1	2	21	84	125	35	2	0	0	0	0	0	0	0	**272**
9:00 PM	0	0	0	1	4	10	61	93	40	3	2	1	1	0	0	0	0	**216**
10:00 PM	0	0	1	0	0	5	27	50	22	3	0	0	0	0	0	0	0	**108**
11:00 PM	0	0	0	0	0	2	13	31	12	4	1	0	0	0	0	0	0	**63**
Total	**4**	**17**	**27**	**13**	**32**	**321**	**1,828**	**3,102**	**1,096**	**151**	**8**	**1**	**1**	**0**	**0**	**0**	**0**	**6,601**
Percent	**0.1%**	**0.3%**	**0.4%**	**0.2%**	**0.5%**	**4.9%**	**27.7%**	**47.0%**	**16.6%**	**2.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	41.6	mph	Mean (Average) Speed	41.4	mph
85th Percentile	45.6	mph	10 mph Pace	36.9 - 46.9	mph
95th Percentile	48.5	mph	Percent in Pace	77.9	%

Project Manager: (415) 310-6469
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Location: Lucas Valley Rd, B/W Las Gallinas & 101 SB Ramps
Date Range: 4/25/2019 - 5/1/2019
Site Code: 32

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	10	17	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	17	27
1:00 AM	13	8	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	8	21
2:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
3:00 AM	10	4	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4	14
4:00 AM	30	6	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	6	36
5:00 AM	120	44	164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	44	164
6:00 AM	256	117	373	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	117	373
7:00 AM	619	356	975	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619	356	975
8:00 AM	**846**	412	**1,258**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**846**	412	**1,258**
9:00 AM	604	358	962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	604	358	962
10:00 AM	501	356	857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	501	356	857
11:00 AM	498	**432**	930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	498	**432**	930
12:00 PM	484	440	924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	484	440	924
1:00 PM	470	449	919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	470	449	919
2:00 PM	543	536	1,079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	543	536	1,079
3:00 PM	575	499	1,074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	575	499	1,074
4:00 PM	**595**	520	1,115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**595**	520	1,115
5:00 PM	557	**576**	**1,133**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	557	**576**	**1,133**
6:00 PM	362	491	853	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	362	491	853
7:00 PM	241	314	555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241	314	555
8:00 PM	194	272	466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	272	466
9:00 PM	129	216	345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	216	345
10:00 PM	72	108	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	108	180
11:00 PM	30	63	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	63	93
Total	7,764	6,601	14,365	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,764	6,601	14,365
Percent	54%	46%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54%	46%	-
AM Peak	08:00	11:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	11:00	08:00
Vol.	846	432	1,258	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	432	1,258
PM Peak	16:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:00	17:00	17:00
Vol.	595	576	1,133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	595	576	1,133

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Mission Ave, B/W H St & Lincoln Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 33

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	26	2,204	285	0	44	3	0	0	0	0	0	0	0	2,562
Percent	1.0%	86.0%	11.1%	0.0%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	21	3,483	415	0	76	2	0	0	0	2	0	0	0	3,999
Percent	0.5%	87.1%	10.4%	0.0%	1.9%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	47	5,687	700	0	120	5	0	0	0	2	0	0	0	6,561
Percent	0.7%	86.7%	10.7%	0.0%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	11	0	0	1	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	41	9	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	171	12	0	4	0	0	0	0	0	0	0	0	**188**
8:00 AM	3	188	14	0	3	1	0	0	0	0	0	0	0	**209**
9:00 AM	3	137	19	0	3	0	0	0	0	0	0	0	0	**162**
10:00 AM	1	100	18	0	3	1	0	0	0	0	0	0	0	**123**
11:00 AM	1	125	21	0	4	0	0	0	0	0	0	0	0	**151**
12:00 PM	3	127	19	0	4	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	140	18	0	1	1	0	0	0	0	0	0	0	**161**
2:00 PM	0	182	29	0	4	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	190	36	0	4	0	0	0	0	0	0	0	0	**231**
4:00 PM	5	175	27	0	8	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	214	18	0	3	0	0	0	0	0	0	0	0	**235**
6:00 PM	1	128	13	0	1	0	0	0	0	0	0	0	0	**143**
7:00 PM	3	102	11	0	1	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	77	5	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	1	63	14	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	1	17	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
Total	**26**	**2,204**	**285**	**0**	**44**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**1.0%**	**86.0%**	**11.1%**	**0.0%**	**1.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	17	2	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	59	15	0	3	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	170	30	0	7	2	0	0	0	1	0	0	0	**213**
8:00 AM	1	212	36	0	7	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	172	35	0	8	0	0	0	0	0	0	0	0	**217**
10:00 AM	2	178	31	0	5	0	0	0	0	0	0	0	0	**216**
11:00 AM	3	201	26	0	5	0	0	0	0	0	0	0	0	**235**
12:00 PM	1	202	23	0	5	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	195	35	0	11	0	0	0	0	0	0	0	0	**241**
2:00 PM	1	274	26	0	8	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	262	26	0	5	0	0	0	0	1	0	0	0	**294**
4:00 PM	3	326	29	0	5	0	0	0	0	0	0	0	0	**363**
5:00 PM	1	361	27	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	300	26	0	3	0	0	0	0	0	0	0	0	**329**
7:00 PM	2	202	21	0	2	0	0	0	0	0	0	0	0	**227**
8:00 PM	1	148	11	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	99	5	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	64	6	0	1	0	0	0	0	0	0	0	0	**71**
11:00 PM	1	21	4	0	0	0	0	0	0	0	0	0	0	**26**
Total	**21**	**3,483**	**415**	**0**	**76**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3,999**
Percent	**0.5%**	**87.1%**	**10.4%**	**0.0%**	**1.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	11	0	0	1	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	41	9	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	171	12	0	4	0	0	0	0	0	0	0	0	**188**
8:00 AM	3	188	14	0	3	1	0	0	0	0	0	0	0	**209**
9:00 AM	3	137	19	0	3	0	0	0	0	0	0	0	0	**162**
10:00 AM	1	100	18	0	3	1	0	0	0	0	0	0	0	**123**
11:00 AM	1	125	21	0	4	0	0	0	0	0	0	0	0	**151**
12:00 PM	3	127	19	0	4	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	140	18	0	1	1	0	0	0	0	0	0	0	**161**
2:00 PM	0	182	29	0	4	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	190	36	0	4	0	0	0	0	0	0	0	0	**231**
4:00 PM	5	175	27	0	8	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	214	18	0	3	0	0	0	0	0	0	0	0	**235**
6:00 PM	1	128	13	0	1	0	0	0	0	0	0	0	0	**143**
7:00 PM	3	102	11	0	1	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	77	5	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	1	63	14	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	1	17	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
Total	**26**	**2,204**	**285**	**0**	**44**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**1.0%**	**86.0%**	**11.1%**	**0.0%**	**1.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	17	2	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	59	15	0	3	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	170	30	0	7	2	0	0	0	1	0	0	0	**213**
8:00 AM	1	212	36	0	7	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	172	35	0	8	0	0	0	0	0	0	0	0	**217**
10:00 AM	2	178	31	0	5	0	0	0	0	0	0	0	0	**216**
11:00 AM	3	201	26	0	5	0	0	0	0	0	0	0	0	**235**
12:00 PM	1	202	23	0	5	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	195	35	0	11	0	0	0	0	0	0	0	0	**241**
2:00 PM	1	274	26	0	8	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	262	26	0	5	0	0	0	0	1	0	0	0	**294**
4:00 PM	3	326	29	0	5	0	0	0	0	0	0	0	0	**363**
5:00 PM	1	361	27	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	300	26	0	3	0	0	0	0	0	0	0	0	**329**
7:00 PM	2	202	21	0	2	0	0	0	0	0	0	0	0	**227**
8:00 PM	1	148	11	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	99	5	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	64	6	0	1	0	0	0	0	0	0	0	0	**71**
11:00 PM	1	21	4	0	0	0	0	0	0	0	0	0	0	**26**
Total	**21**	**3,483**	**415**	**0**	**76**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3,999**
Percent	**0.5%**	**87.1%**	**10.4%**	**0.0%**	**1.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	11	0	0	1	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	41	9	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	171	12	0	4	0	0	0	0	0	0	0	0	**188**
8:00 AM	3	188	14	0	3	1	0	0	0	0	0	0	0	**209**
9:00 AM	3	137	19	0	3	0	0	0	0	0	0	0	0	**162**
10:00 AM	1	100	18	0	3	1	0	0	0	0	0	0	0	**123**
11:00 AM	1	125	21	0	4	0	0	0	0	0	0	0	0	**151**
12:00 PM	3	127	19	0	4	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	140	18	0	1	1	0	0	0	0	0	0	0	**161**
2:00 PM	0	182	29	0	4	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	190	36	0	4	0	0	0	0	0	0	0	0	**231**
4:00 PM	5	175	27	0	8	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	214	18	0	3	0	0	0	0	0	0	0	0	**235**
6:00 PM	1	128	13	0	1	0	0	0	0	0	0	0	0	**143**
7:00 PM	3	102	11	0	1	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	77	5	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	1	63	14	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	1	17	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
Total	**26**	**2,204**	**285**	**0**	**44**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**1.0%**	**86.0%**	**11.1%**	**0.0%**	**1.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	17	2	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	59	15	0	3	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	170	30	0	7	2	0	0	0	1	0	0	0	**213**
8:00 AM	1	212	36	0	7	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	172	35	0	8	0	0	0	0	0	0	0	0	**217**
10:00 AM	2	178	31	0	5	0	0	0	0	0	0	0	0	**216**
11:00 AM	3	201	26	0	5	0	0	0	0	0	0	0	0	**235**
12:00 PM	1	202	23	0	5	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	195	35	0	11	0	0	0	0	0	0	0	0	**241**
2:00 PM	1	274	26	0	8	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	262	26	0	5	0	0	0	0	1	0	0	0	**294**
4:00 PM	3	326	29	0	5	0	0	0	0	0	0	0	0	**363**
5:00 PM	1	361	27	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	300	26	0	3	0	0	0	0	0	0	0	0	**329**
7:00 PM	2	202	21	0	2	0	0	0	0	0	0	0	0	**227**
8:00 PM	1	148	11	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	99	5	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	64	6	0	1	0	0	0	0	0	0	0	0	**71**
11:00 PM	1	21	4	0	0	0	0	0	0	0	0	0	0	**26**
Total	**21**	**3,483**	**415**	**0**	**76**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3,999**
Percent	**0.5%**	**87.1%**	**10.4%**	**0.0%**	**1.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Mission Ave, B/W H St & Lincoln Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 33

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	10	41	184	766	1,186	346	27	2	0	0	0	0	0	0	0	0	0	2,562
Percent	0.4%	1.6%	7.2%	29.9%	46.3%	13.5%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	34	31	84	712	2,412	673	49	4	0	0	0	0	0	0	0	0	0	3,999
Percent	0.9%	0.8%	2.1%	17.8%	60.3%	16.8%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	44	72	268	1,478	3,598	1,019	76	6	0	0	0	0	0	0	0	0	0	6,561
Percent	0.7%	1.1%	4.1%	22.5%	54.8%	15.5%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Eastbound		
50th Percentile (Median)	26.1	mph
85th Percentile	29.9	mph
95th Percentile	32.5	mph
Westbound		
50th Percentile (Median)	27.3	mph
85th Percentile	30.4	mph
95th Percentile	32.7	mph

Total Study Speed Statistics		
Eastbound		
Mean (Average) Speed	25.8	mph
10 mph Pace	20.8 - 30.8	mph
Percent in Pace	77.2	%
Westbound		
Mean (Average) Speed	27.1	mph
10 mph Pace	22.6 - 32.6	mph
Percent in Pace	86.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Wednesday, May 8, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	2	0	8	28	9	3	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	5	10	61	85	21	5	0	0	0	0	0	0	0	0	0	0	**188**
8:00 AM	0	3	4	51	114	35	2	0	0	0	0	0	0	0	0	0	0	**209**
9:00 AM	1	6	10	47	76	20	2	0	0	0	0	0	0	0	0	0	0	**162**
10:00 AM	0	3	13	33	51	22	1	0	0	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	1	16	45	67	21	0	0	0	0	0	0	0	0	0	0	0	**151**
12:00 PM	1	4	12	44	71	19	2	0	0	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	1	9	39	89	20	2	0	0	0	0	0	0	0	0	0	0	**161**
2:00 PM	1	4	16	77	88	27	2	0	0	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	2	25	60	110	28	4	1	0	0	0	0	0	0	0	0	0	**231**
4:00 PM	0	6	21	60	104	24	0	0	0	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	1	16	74	111	32	1	0	0	0	0	0	0	0	0	0	0	**235**
6:00 PM	0	1	8	37	69	28	0	0	0	0	0	0	0	0	0	0	0	**143**
7:00 PM	0	2	9	50	44	12	0	0	0	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	0	2	32	34	11	3	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	2	0	11	35	23	7	0	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	0	0	1	5	9	3	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	0	1	2	5	1	0	1	0	0	0	0	0	0	0	0	0	**10**
Total	**10**	**41**	**184**	**766**	**1,186**	**346**	**27**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**0.4%**	**1.6%**	**7.2%**	**29.9%**	**46.3%**	**13.5%**	**1.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	26.1	mph	Mean (Average) Speed	25.8	mph
85th Percentile	29.9	mph	10 mph Pace	20.8 - 30.8	mph
95th Percentile	32.5	mph	Percent in Pace	77.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Wednesday, May 8, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	10	0	1	1	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	0	3	5	10	2	0	0	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	1	3	11	48	12	1	1	0	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	6	7	38	122	34	3	0	0	0	0	0	0	0	0	0	0	**213**
8:00 AM	0	2	4	73	141	36	0	0	0	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	0	5	41	136	31	2	0	0	0	0	0	0	0	0	0	0	**217**
10:00 AM	0	2	5	46	129	32	2	0	0	0	0	0	0	0	0	0	0	**216**
11:00 AM	0	3	2	43	149	37	1	0	0	0	0	0	0	0	0	0	0	**235**
12:00 PM	0	4	2	56	129	34	5	1	0	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	0	2	40	150	47	2	0	0	0	0	0	0	0	0	0	0	**241**
2:00 PM	29	8	15	42	161	51	3	0	0	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	1	3	53	190	45	2	0	0	0	0	0	0	0	0	0	0	**294**
4:00 PM	0	1	11	58	229	59	5	0	0	0	0	0	0	0	0	0	0	**363**
5:00 PM	0	0	2	44	241	93	9	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	0	10	58	206	53	2	0	0	0	0	0	0	0	0	0	0	**329**
7:00 PM	0	3	9	46	142	24	3	0	0	0	0	0	0	0	0	0	0	**227**
8:00 PM	0	0	1	28	99	28	4	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	0	2	16	64	22	0	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	0	0	9	41	20	1	0	0	0	0	0	0	0	0	0	0	**71**
11:00 PM	0	0	1	3	17	3	1	1	0	0	0	0	0	0	0	0	0	**26**
Total	**34**	**31**	**84**	**712**	**2,412**	**673**	**49**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,999**
Percent	**0.9%**	**0.8%**	**2.1%**	**17.8%**	**60.3%**	**16.8%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.3	mph	Mean (Average) Speed	27.1	mph
85th Percentile	30.4	mph	10 mph Pace	22.6 - 32.6	mph
95th Percentile	32.7	mph	Percent in Pace	86.82	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	1	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	**13**
6:00 AM	0	2	0	8	28	9	3	0	0	0	0	0	0	0	0	0	0	**50**
7:00 AM	1	5	10	61	85	21	5	0	0	0	0	0	0	0	0	0	0	**188**
8:00 AM	0	3	4	51	114	35	2	0	0	0	0	0	0	0	0	0	0	**209**
9:00 AM	1	6	10	47	76	20	2	0	0	0	0	0	0	0	0	0	0	**162**
10:00 AM	0	3	13	33	51	22	1	0	0	0	0	0	0	0	0	0	0	**123**
11:00 AM	1	1	16	45	67	21	0	0	0	0	0	0	0	0	0	0	0	**151**
12:00 PM	1	4	12	44	71	19	2	0	0	0	0	0	0	0	0	0	0	**153**
1:00 PM	1	1	9	39	89	20	2	0	0	0	0	0	0	0	0	0	0	**161**
2:00 PM	1	4	16	77	88	27	2	0	0	0	0	0	0	0	0	0	0	**215**
3:00 PM	1	2	25	60	110	28	4	1	0	0	0	0	0	0	0	0	0	**231**
4:00 PM	0	6	21	60	104	24	0	0	0	0	0	0	0	0	0	0	0	**215**
5:00 PM	0	1	16	74	111	32	1	0	0	0	0	0	0	0	0	0	0	**235**
6:00 PM	0	1	8	37	69	28	0	0	0	0	0	0	0	0	0	0	0	**143**
7:00 PM	0	2	9	50	44	12	0	0	0	0	0	0	0	0	0	0	0	**117**
8:00 PM	0	0	2	32	34	11	3	0	0	0	0	0	0	0	0	0	0	**82**
9:00 PM	2	0	11	35	23	7	0	0	0	0	0	0	0	0	0	0	0	**78**
10:00 PM	0	0	1	5	9	3	0	0	0	0	0	0	0	0	0	0	0	**18**
11:00 PM	0	0	1	2	5	1	0	1	0	0	0	0	0	0	0	0	0	**10**
Total	**10**	**41**	**184**	**766**	**1,186**	**346**	**27**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,562**
Percent	**0.4%**	**1.6%**	**7.2%**	**29.9%**	**46.3%**	**13.5%**	**1.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	26.1	mph	Mean (Average) Speed	25.8	mph
85th Percentile	29.9	mph	10 mph Pace	20.8 - 30.8	mph
95th Percentile	32.5	mph	Percent in Pace	77.2	%

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 33

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	10	0	1	1	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	0	3	5	10	2	0	0	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	1	3	11	48	12	1	1	0	0	0	0	0	0	0	0	0	**77**
7:00 AM	3	6	7	38	122	34	3	0	0	0	0	0	0	0	0	0	0	**213**
8:00 AM	0	2	4	73	141	36	0	0	0	0	0	0	0	0	0	0	0	**256**
9:00 AM	2	0	5	41	136	31	2	0	0	0	0	0	0	0	0	0	0	**217**
10:00 AM	0	2	5	46	129	32	2	0	0	0	0	0	0	0	0	0	0	**216**
11:00 AM	0	3	2	43	149	37	1	0	0	0	0	0	0	0	0	0	0	**235**
12:00 PM	0	4	2	56	129	34	5	1	0	0	0	0	0	0	0	0	0	**231**
1:00 PM	0	0	2	40	150	47	2	0	0	0	0	0	0	0	0	0	0	**241**
2:00 PM	29	8	15	42	161	51	3	0	0	0	0	0	0	0	0	0	0	**309**
3:00 PM	0	1	3	53	190	45	2	0	0	0	0	0	0	0	0	0	0	**294**
4:00 PM	0	1	11	58	229	59	5	0	0	0	0	0	0	0	0	0	0	**363**
5:00 PM	0	0	2	44	241	93	9	0	0	0	0	0	0	0	0	0	0	**389**
6:00 PM	0	0	10	58	206	53	2	0	0	0	0	0	0	0	0	0	0	**329**
7:00 PM	0	3	9	46	142	24	3	0	0	0	0	0	0	0	0	0	0	**227**
8:00 PM	0	0	1	28	99	28	4	0	0	0	0	0	0	0	0	0	0	**160**
9:00 PM	0	0	2	16	64	22	0	0	0	0	0	0	0	0	0	0	0	**104**
10:00 PM	0	0	0	9	41	20	1	0	0	0	0	0	0	0	0	0	0	**71**
11:00 PM	0	0	1	3	17	3	1	1	0	0	0	0	0	0	0	0	0	**26**
Total	**34**	**31**	**84**	**712**	**2,412**	**673**	**49**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,999**
Percent	**0.9%**	**0.8%**	**2.1%**	**17.8%**	**60.3%**	**16.8%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.3	mph	Mean (Average) Speed	27.1	mph
85th Percentile	30.4	mph	10 mph Pace	22.6 - 32.6	mph
95th Percentile	32.7	mph	Percent in Pace	86.8	%

Location: Mission Ave, B/W H St & Lincoln Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 33

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	1	13	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13	14
1:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
2:00 AM	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
3:00 AM	4	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	8
4:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
5:00 AM	13	20	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	20	33
6:00 AM	50	77	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	77	127
7:00 AM	188	213	401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	188	213	401
8:00 AM	**209**	**256**	**465**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**209**	**256**	**465**
9:00 AM	162	217	379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	162	217	379
10:00 AM	123	216	339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	216	339
11:00 AM	151	235	386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	235	386
12:00 PM	153	231	384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	231	384
1:00 PM	161	241	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	241	402
2:00 PM	215	309	524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	309	524
3:00 PM	231	294	525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	294	525
4:00 PM	215	363	578	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	363	578
5:00 PM	**235**	**389**	**624**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**235**	**389**	**624**
6:00 PM	143	329	472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143	329	472
7:00 PM	117	227	344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	227	344
8:00 PM	82	160	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	160	242
9:00 PM	78	104	182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	104	182
10:00 PM	18	71	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	71	89
11:00 PM	10	26	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	26	36
Total	2,562	3,999	6,561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,562	3,999	6,561
Percent	39%	61%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39%	61%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	209	256	465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	256	465
PM Peak	17:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	17:00	17:00
Vol.	235	389	624	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235	389	624

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Mission Ave, B/W Lincoln Ave & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 34

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	18	3,506	270	2	67	7	0	3	2	2	0	0	0	3,877
Percent	0.5%	90.4%	7.0%	0.1%	1.7%	0.2%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	100%
Westbound	41	4,617	689	2	212	16	0	1	2	0	0	0	0	5,580
Percent	0.7%	82.7%	12.3%	0.0%	3.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	59	8,123	959	4	279	23	0	4	4	2	0	0	0	9,457
Percent	0.6%	85.9%	10.1%	0.0%	3.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Wednesday, May 8, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	50	4	0	2	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	93	14	0	2	0	0	1	1	0	0	0	0	**111**
7:00 AM	3	255	21	0	8	1	0	0	0	0	0	0	0	**288**
8:00 AM	3	229	28	0	6	0	0	0	1	0	0	0	0	**267**
9:00 AM	1	202	17	1	1	1	0	0	0	0	0	0	0	**223**
10:00 AM	1	187	22	0	5	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	223	17	0	5	1	0	0	0	0	0	0	0	**247**
12:00 PM	1	242	15	0	10	1	0	0	0	0	0	0	0	**269**
1:00 PM	0	233	18	0	10	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	206	17	0	2	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	283	18	0	0	0	0	0	0	2	0	0	0	**303**
4:00 PM	0	291	18	0	6	1	0	0	0	0	0	0	0	**316**
5:00 PM	3	294	16	0	2	2	0	0	0	0	0	0	0	**317**
6:00 PM	1	210	14	0	2	0	0	2	0	0	0	0	0	**229**
7:00 PM	2	163	12	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	1	137	6	0	2	0	0	0	0	0	0	0	0	**146**
9:00 PM	1	91	3	0	2	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	67	5	0	1	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**18**	**3,506**	**270**	**2**	**67**	**7**	**0**	**3**	**2**	**2**	**0**	**0**	**0**	**3,877**
Percent	**0.5%**	**90.4%**	**7.0%**	**0.1%**	**1.7%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Wednesday, May 8, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	25	7	0	1	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	87	13	0	4	0	0	0	0	0	0	0	0	**105**
7:00 AM	1	322	49	0	14	3	0	0	0	0	0	0	0	**389**
8:00 AM	5	360	58	0	18	3	0	0	0	0	0	0	0	**444**
9:00 AM	2	288	38	1	14	1	0	0	1	0	0	0	0	**345**
10:00 AM	2	231	39	1	10	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	285	36	0	19	0	0	1	0	0	0	0	0	**341**
12:00 PM	0	316	52	0	14	1	0	0	0	0	0	0	0	**383**
1:00 PM	2	328	54	0	23	1	0	0	0	0	0	0	0	**408**
2:00 PM	5	339	63	0	23	1	0	0	0	0	0	0	0	**431**
3:00 PM	6	315	46	0	19	2	0	0	1	0	0	0	0	**389**
4:00 PM	3	370	56	0	13	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	374	46	0	8	3	0	0	0	0	0	0	0	**436**
6:00 PM	1	341	40	0	12	0	0	0	0	0	0	0	0	**394**
7:00 PM	1	228	32	0	6	1	0	0	0	0	0	0	0	**268**
8:00 PM	2	177	27	0	8	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	113	18	0	4	0	0	0	0	0	0	0	0	**137**
10:00 PM	2	70	6	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	1	24	3	0	0	0	0	0	0	0	0	0	0	**28**
Total	**41**	**4,617**	**689**	**2**	**212**	**16**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5,580**
Percent	**0.7%**	**82.7%**	**12.3%**	**0.0%**	**3.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	50	4	0	2	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	93	14	0	2	0	0	1	1	0	0	0	0	**111**
7:00 AM	3	255	21	0	8	1	0	0	0	0	0	0	0	**288**
8:00 AM	3	229	28	0	6	0	0	0	1	0	0	0	0	**267**
9:00 AM	1	202	17	1	1	1	0	0	0	0	0	0	0	**223**
10:00 AM	1	187	22	0	5	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	223	17	0	5	1	0	0	0	0	0	0	0	**247**
12:00 PM	1	242	15	0	10	1	0	0	0	0	0	0	0	**269**
1:00 PM	0	233	18	0	10	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	206	17	0	2	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	283	18	0	0	0	0	0	0	2	0	0	0	**303**
4:00 PM	0	291	18	0	6	1	0	0	0	0	0	0	0	**316**
5:00 PM	3	294	16	0	2	2	0	0	0	0	0	0	0	**317**
6:00 PM	1	210	14	0	2	0	0	2	0	0	0	0	0	**229**
7:00 PM	2	163	12	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	1	137	6	0	2	0	0	0	0	0	0	0	0	**146**
9:00 PM	1	91	3	0	2	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	67	5	0	1	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**18**	**3,506**	**270**	**2**	**67**	**7**	**0**	**3**	**2**	**2**	**0**	**0**	**0**	**3,877**
Percent	**0.5%**	**90.4%**	**7.0%**	**0.1%**	**1.7%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	25	7	0	1	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	87	13	0	4	0	0	0	0	0	0	0	0	**105**
7:00 AM	1	322	49	0	14	3	0	0	0	0	0	0	0	**389**
8:00 AM	5	360	58	0	18	3	0	0	0	0	0	0	0	**444**
9:00 AM	2	288	38	1	14	1	0	0	1	0	0	0	0	**345**
10:00 AM	2	231	39	1	10	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	285	36	0	19	0	0	1	0	0	0	0	0	**341**
12:00 PM	0	316	52	0	14	1	0	0	0	0	0	0	0	**383**
1:00 PM	2	328	54	0	23	1	0	0	0	0	0	0	0	**408**
2:00 PM	5	339	63	0	23	1	0	0	0	0	0	0	0	**431**
3:00 PM	6	315	46	0	19	2	0	0	1	0	0	0	0	**389**
4:00 PM	3	370	56	0	13	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	374	46	0	8	3	0	0	0	0	0	0	0	**436**
6:00 PM	1	341	40	0	12	0	0	0	0	0	0	0	0	**394**
7:00 PM	1	228	32	0	6	1	0	0	0	0	0	0	0	**268**
8:00 PM	2	177	27	0	8	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	113	18	0	4	0	0	0	0	0	0	0	0	**137**
10:00 PM	2	70	6	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	1	24	3	0	0	0	0	0	0	0	0	0	0	**28**
Total	**41**	**4,617**	**689**	**2**	**212**	**16**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5,580**
Percent	**0.7%**	**82.7%**	**12.3%**	**0.0%**	**3.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	50	4	0	2	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	93	14	0	2	0	0	1	1	0	0	0	0	**111**
7:00 AM	3	255	21	0	8	1	0	0	0	0	0	0	0	**288**
8:00 AM	3	229	28	0	6	0	0	0	1	0	0	0	0	**267**
9:00 AM	1	202	17	1	1	1	0	0	0	0	0	0	0	**223**
10:00 AM	1	187	22	0	5	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	223	17	0	5	1	0	0	0	0	0	0	0	**247**
12:00 PM	1	242	15	0	10	1	0	0	0	0	0	0	0	**269**
1:00 PM	0	233	18	0	10	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	206	17	0	2	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	283	18	0	0	0	0	0	0	2	0	0	0	**303**
4:00 PM	0	291	18	0	6	1	0	0	0	0	0	0	0	**316**
5:00 PM	3	294	16	0	2	2	0	0	0	0	0	0	0	**317**
6:00 PM	1	210	14	0	2	0	0	2	0	0	0	0	0	**229**
7:00 PM	2	163	12	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	1	137	6	0	2	0	0	0	0	0	0	0	0	**146**
9:00 PM	1	91	3	0	2	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	67	5	0	1	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
Total	**18**	**3,506**	**270**	**2**	**67**	**7**	**0**	**3**	**2**	**2**	**0**	**0**	**0**	**3,877**
Percent	**0.5%**	**90.4%**	**7.0%**	**0.1%**	**1.7%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	7	4	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	5	1	0	2	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	25	7	0	1	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	87	13	0	4	0	0	0	0	0	0	0	0	**105**
7:00 AM	1	322	49	0	14	3	0	0	0	0	0	0	0	**389**
8:00 AM	5	360	58	0	18	3	0	0	0	0	0	0	0	**444**
9:00 AM	2	288	38	1	14	1	0	0	1	0	0	0	0	**345**
10:00 AM	2	231	39	1	10	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	285	36	0	19	0	0	1	0	0	0	0	0	**341**
12:00 PM	0	316	52	0	14	1	0	0	0	0	0	0	0	**383**
1:00 PM	2	328	54	0	23	1	0	0	0	0	0	0	0	**408**
2:00 PM	5	339	63	0	23	1	0	0	0	0	0	0	0	**431**
3:00 PM	6	315	46	0	19	2	0	0	1	0	0	0	0	**389**
4:00 PM	3	370	56	0	13	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	374	46	0	8	3	0	0	0	0	0	0	0	**436**
6:00 PM	1	341	40	0	12	0	0	0	0	0	0	0	0	**394**
7:00 PM	1	228	32	0	6	1	0	0	0	0	0	0	0	**268**
8:00 PM	2	177	27	0	8	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	113	18	0	4	0	0	0	0	0	0	0	0	**137**
10:00 PM	2	70	6	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	1	24	3	0	0	0	0	0	0	0	0	0	0	**28**
Total	**41**	**4,617**	**689**	**2**	**212**	**16**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5,580**
Percent	**0.7%**	**82.7%**	**12.3%**	**0.0%**	**3.8%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Mission Ave, B/W Lincoln Ave & Grand Ave

Count Direction: Eastbound / Westbound

Date Range: 5/8/2019 to 5/8/2019

Site Code: 34

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	117	370	1,010	1,837	512	29	2	0	0	0	0	0	0	0	0	0	0	3,877
Percent	3.0%	9.5%	26.1%	47.4%	13.2%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	90	360	1,005	2,705	1,238	161	17	2	0	2	0	0	0	0	0	0	0	5,580
Percent	1.6%	6.5%	18.0%	48.5%	22.2%	2.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	207	730	2,015	4,542	1,750	190	19	2	0	2	0	0	0	0	0	0	0	9,457
Percent	2.2%	7.7%	21.3%	48.0%	18.5%	2.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Eastbound		
50th Percentile (Median)	21.1	mph
85th Percentile	24.8	mph
95th Percentile	27.0	mph
Westbound		
50th Percentile (Median)	22.6	mph
85th Percentile	26.4	mph
95th Percentile	29.0	mph

Total Study Speed Statistics		
Eastbound		
Mean (Average) Speed	20.5	mph
10 mph Pace	15.9 - 25.9	mph
Percent in Pace	74.9	%
Westbound		
Mean (Average) Speed	22.2	mph
10 mph Pace	18.1 - 28.1	mph
Percent in Pace	76.4	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

idax DATA SOLUTIONS

Wednesday, May 8, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	4	8	5	1	0	0	0	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	0	7	40	9	0	0	0	0	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	1	11	51	45	3	0	0	0	0	0	0	0	0	0	0	0	**111**
7:00 AM	10	35	100	119	22	2	0	0	0	0	0	0	0	0	0	0	0	**288**
8:00 AM	7	31	64	137	27	1	0	0	0	0	0	0	0	0	0	0	0	**267**
9:00 AM	0	10	66	118	29	0	0	0	0	0	0	0	0	0	0	0	0	**223**
10:00 AM	0	5	35	140	35	0	0	0	0	0	0	0	0	0	0	0	0	**215**
11:00 AM	2	21	59	123	41	1	0	0	0	0	0	0	0	0	0	0	0	**247**
12:00 PM	3	12	68	138	43	5	0	0	0	0	0	0	0	0	0	0	0	**269**
1:00 PM	1	19	51	148	41	1	0	0	0	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	19	84	98	21	2	1	0	0	0	0	0	0	0	0	0	0	**225**
3:00 PM	20	71	95	93	23	1	0	0	0	0	0	0	0	0	0	0	0	**303**
4:00 PM	53	51	103	83	25	0	1	0	0	0	0	0	0	0	0	0	0	**316**
5:00 PM	17	54	123	114	7	2	0	0	0	0	0	0	0	0	0	0	0	**317**
6:00 PM	4	21	59	118	25	2	0	0	0	0	0	0	0	0	0	0	0	**229**
7:00 PM	0	16	25	100	34	2	0	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	0	3	26	83	31	3	0	0	0	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	1	20	54	21	1	0	0	0	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	0	7	46	19	1	0	0	0	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	0	1	15	5	0	0	0	0	0	0	0	0	0	0	0	0	**21**
Total	**117**	**370**	**1,010**	**1,837**	**512**	**29**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,877**
Percent	**3.0%**	**9.5%**	**26.1%**	**47.4%**	**13.2%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	21.1	mph	Mean (Average) Speed	20.5	mph
85th Percentile	24.8	mph	10 mph Pace	15.9 - 25.9	mph
95th Percentile	27.0	mph	Percent in Pace	74.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

DATA SOLUTIONS

Wednesday, May 8, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	6	2	1	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	0	4	12	15	2	0	0	0	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	1	19	50	30	4	0	0	0	0	0	0	0	0	0	0	0	**105**
7:00 AM	10	40	75	175	81	7	1	0	0	0	0	0	0	0	0	0	0	**389**
8:00 AM	4	25	83	229	95	7	1	0	0	0	0	0	0	0	0	0	0	**444**
9:00 AM	0	9	36	201	85	10	2	0	0	2	0	0	0	0	0	0	0	**345**
10:00 AM	0	8	32	145	88	9	1	0	0	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	10	33	187	100	11	0	0	0	0	0	0	0	0	0	0	0	**341**
12:00 PM	0	5	63	199	97	18	0	1	0	0	0	0	0	0	0	0	0	**383**
1:00 PM	3	11	66	189	121	18	0	0	0	0	0	0	0	0	0	0	0	**408**
2:00 PM	8	33	76	191	106	11	5	1	0	0	0	0	0	0	0	0	0	**431**
3:00 PM	28	55	74	153	66	11	2	0	0	0	0	0	0	0	0	0	0	**389**
4:00 PM	15	70	129	181	43	4	0	0	0	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	25	112	218	66	9	1	0	0	0	0	0	0	0	0	0	0	**436**
6:00 PM	11	55	96	167	58	7	0	0	0	0	0	0	0	0	0	0	0	**394**
7:00 PM	0	5	35	151	69	7	1	0	0	0	0	0	0	0	0	0	0	**268**
8:00 PM	2	2	32	116	49	13	0	0	0	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	4	21	69	36	5	0	0	0	0	0	0	0	0	0	0	0	**137**
10:00 PM	1	1	12	41	15	6	2	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	0	0	2	16	9	0	1	0	0	0	0	0	0	0	0	0	0	**28**
Total	**90**	**360**	**1,005**	**2,705**	**1,238**	**161**	**17**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,580**
Percent	**1.6%**	**6.5%**	**18.0%**	**48.5%**	**22.2%**	**2.9%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	22.6	mph	Mean (Average) Speed	22.2	mph
85th Percentile	26.4	mph	10 mph Pace	18.1 - 28.1	mph
95th Percentile	29.0	mph	Percent in Pace	76.36	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	4	8	5	1	0	0	0	0	0	0	0	0	0	0	0	**18**
5:00 AM	0	0	7	40	9	0	0	0	0	0	0	0	0	0	0	0	0	**56**
6:00 AM	0	1	11	51	45	3	0	0	0	0	0	0	0	0	0	0	0	**111**
7:00 AM	10	35	100	119	22	2	0	0	0	0	0	0	0	0	0	0	0	**288**
8:00 AM	7	31	64	137	27	1	0	0	0	0	0	0	0	0	0	0	0	**267**
9:00 AM	0	10	66	118	29	0	0	0	0	0	0	0	0	0	0	0	0	**223**
10:00 AM	0	5	35	140	35	0	0	0	0	0	0	0	0	0	0	0	0	**215**
11:00 AM	2	21	59	123	41	1	0	0	0	0	0	0	0	0	0	0	0	**247**
12:00 PM	3	12	68	138	43	5	0	0	0	0	0	0	0	0	0	0	0	**269**
1:00 PM	1	19	51	148	41	1	0	0	0	0	0	0	0	0	0	0	0	**261**
2:00 PM	0	19	84	98	21	2	1	0	0	0	0	0	0	0	0	0	0	**225**
3:00 PM	20	71	95	93	23	1	0	0	0	0	0	0	0	0	0	0	0	**303**
4:00 PM	53	51	103	83	25	0	1	0	0	0	0	0	0	0	0	0	0	**316**
5:00 PM	17	54	123	114	7	2	0	0	0	0	0	0	0	0	0	0	0	**317**
6:00 PM	4	21	59	118	25	2	0	0	0	0	0	0	0	0	0	0	0	**229**
7:00 PM	0	16	25	100	34	2	0	0	0	0	0	0	0	0	0	0	0	**177**
8:00 PM	0	3	26	83	31	3	0	0	0	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	1	20	54	21	1	0	0	0	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	0	7	46	19	1	0	0	0	0	0	0	0	0	0	0	0	**73**
11:00 PM	0	0	1	15	5	0	0	0	0	0	0	0	0	0	0	0	0	**21**
Total	**117**	**370**	**1,010**	**1,837**	**512**	**29**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,877**
Percent	**3.0%**	**9.5%**	**26.1%**	**47.4%**	**13.2%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	21.1	mph	Mean (Average) Speed	20.5	mph
85th Percentile	24.8	mph	10 mph Pace	15.9 - 25.9	mph
95th Percentile	27.0	mph	Percent in Pace	74.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 to 5/8/2019
Site Code: 34

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	6	2	1	0	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	**8**
5:00 AM	0	0	4	12	15	2	0	0	0	0	0	0	0	0	0	0	0	**33**
6:00 AM	1	1	19	50	30	4	0	0	0	0	0	0	0	0	0	0	0	**105**
7:00 AM	10	40	75	175	81	7	1	0	0	0	0	0	0	0	0	0	0	**389**
8:00 AM	4	25	83	229	95	7	1	0	0	0	0	0	0	0	0	0	0	**444**
9:00 AM	0	9	36	201	85	10	2	0	0	2	0	0	0	0	0	0	0	**345**
10:00 AM	0	8	32	145	88	9	1	0	0	0	0	0	0	0	0	0	0	**283**
11:00 AM	0	10	33	187	100	11	0	0	0	0	0	0	0	0	0	0	0	**341**
12:00 PM	0	5	63	199	97	18	0	1	0	0	0	0	0	0	0	0	0	**383**
1:00 PM	3	11	66	189	121	18	0	0	0	0	0	0	0	0	0	0	0	**408**
2:00 PM	8	33	76	191	106	11	5	1	0	0	0	0	0	0	0	0	0	**431**
3:00 PM	28	55	74	153	66	11	2	0	0	0	0	0	0	0	0	0	0	**389**
4:00 PM	15	70	129	181	43	4	0	0	0	0	0	0	0	0	0	0	0	**442**
5:00 PM	5	25	112	218	66	9	1	0	0	0	0	0	0	0	0	0	0	**436**
6:00 PM	11	55	96	167	58	7	0	0	0	0	0	0	0	0	0	0	0	**394**
7:00 PM	0	5	35	151	69	7	1	0	0	0	0	0	0	0	0	0	0	**268**
8:00 PM	2	2	32	116	49	13	0	0	0	0	0	0	0	0	0	0	0	**214**
9:00 PM	2	4	21	69	36	5	0	0	0	0	0	0	0	0	0	0	0	**137**
10:00 PM	1	1	12	41	15	6	2	0	0	0	0	0	0	0	0	0	0	**78**
11:00 PM	0	0	2	16	9	0	1	0	0	0	0	0	0	0	0	0	0	**28**
Total	**90**	**360**	**1,005**	**2,705**	**1,238**	**161**	**17**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,580**
Percent	**1.6%**	**6.5%**	**18.0%**	**48.5%**	**22.2%**	**2.9%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	22.6	mph	Mean (Average) Speed	22.2	mph
85th Percentile	26.4	mph	10 mph Pace	18.1 - 28.1	mph
95th Percentile	29.0	mph	Percent in Pace	76.4	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Mission Ave, B/W Lincoln Ave & Grand Ave
Date Range: 5/8/2019 - 5/14/2019
Site Code: 34

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/8/2019			5/9/2019			5/10/2019			5/11/2019			5/12/2019			5/13/2019			5/14/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	7	11	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	11	18
1:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
2:00 AM	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	6
3:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
4:00 AM	18	8	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	8	26
5:00 AM	56	33	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	33	89
6:00 AM	111	105	216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	111	105	216
7:00 AM	**288**	389	677	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**288**	389	677
8:00 AM	267	**444**	**711**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	267	**444**	**711**
9:00 AM	223	345	568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	345	568
10:00 AM	215	283	498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	215	283	498
11:00 AM	247	341	588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	341	588
12:00 PM	269	383	652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	269	383	652
1:00 PM	261	408	669	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	261	408	669
2:00 PM	225	431	656	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	431	656
3:00 PM	303	389	692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	303	389	692
4:00 PM	316	**442**	**758**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	**442**	**758**
5:00 PM	**317**	436	753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**317**	436	753
6:00 PM	229	394	623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	394	623
7:00 PM	177	268	445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	177	268	445
8:00 PM	146	214	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	214	360
9:00 PM	97	137	234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	137	234
10:00 PM	73	78	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	78	151
11:00 PM	21	28	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	28	49
Total	3,877	5,580	9,457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,877	5,580	9,457
Percent	41%	59%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41%	59%	-
AM Peak	07:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	08:00	08:00
Vol.	288	444	711	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	288	444	711
PM Peak	17:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	16:00
Vol.	317	442	758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	317	442	758

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 35

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	29	1,842	730	13	227	2	0	0	0	0	0	0	0	2,843
Percent	1.0%	64.8%	25.7%	0.5%	8.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	28	4,110	696	3	190	5	0	0	1	3	0	0	0	5,036
Percent	0.6%	81.6%	13.8%	0.1%	3.8%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100%
Total	57	5,952	1,426	16	417	7	0	0	1	3	0	0	0	7,879
Percent	0.7%	75.5%	18.1%	0.2%	5.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	5	0	1	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	32	6	0	3	0	0	0	0	0	0	0	0	**41**
7:00 AM	0	100	41	3	17	0	0	0	0	0	0	0	0	**161**
8:00 AM	3	127	53	3	19	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	90	52	0	16	0	0	0	0	0	0	0	0	**158**
10:00 AM	4	83	49	1	21	2	0	0	0	0	0	0	0	**160**
11:00 AM	2	121	44	0	15	0	0	0	0	0	0	0	0	**182**
12:00 PM	3	129	61	1	22	0	0	0	0	0	0	0	0	**216**
1:00 PM	3	142	48	0	19	0	0	0	0	0	0	0	0	**212**
2:00 PM	1	124	65	1	18	0	0	0	0	0	0	0	0	**209**
3:00 PM	2	171	53	0	13	0	0	0	0	0	0	0	0	**239**
4:00 PM	1	143	46	1	25	0	0	0	0	0	0	0	0	**216**
5:00 PM	4	153	58	0	10	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	129	46	0	7	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	93	29	2	5	0	0	0	0	0	0	0	0	**130**
8:00 PM	1	77	21	1	6	0	0	0	0	0	0	0	0	**106**
9:00 PM	1	65	26	0	5	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	26	13	0	3	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	13	6	0	1	0	0	0	0	0	0	0	0	**20**
Total	**29**	**1,842**	**730**	**13**	**227**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.0%**	**64.8%**	**25.7%**	**0.5%**	**8.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	16	4	0	1	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	65	14	0	8	0	0	0	0	0	0	0	0	**88**
7:00 AM	2	233	55	0	20	1	0	0	0	1	0	0	0	**312**
8:00 AM	4	258	51	0	17	1	0	0	0	0	0	0	0	**331**
9:00 AM	0	245	55	0	9	0	0	0	0	0	0	0	0	**309**
10:00 AM	4	195	47	0	9	1	0	0	0	0	0	0	0	**256**
11:00 AM	3	253	45	0	18	0	0	0	0	0	0	0	0	**319**
12:00 PM	2	269	56	0	14	0	0	0	0	0	0	0	0	**341**
1:00 PM	1	262	48	0	11	0	0	0	0	0	0	0	0	**322**
2:00 PM	2	277	64	0	26	0	0	0	0	2	0	0	0	**371**
3:00 PM	2	314	52	0	12	0	0	0	0	0	0	0	0	**380**
4:00 PM	3	311	45	0	15	2	0	0	0	0	0	0	0	**376**
5:00 PM	2	377	49	2	10	0	0	0	0	0	0	0	0	**440**
6:00 PM	2	306	41	1	7	0	0	0	1	0	0	0	0	**358**
7:00 PM	0	244	29	0	6	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	187	17	0	4	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	142	6	0	2	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	95	8	0	1	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	29	3	0	0	0	0	0	0	0	0	0	0	**32**
Total	**28**	**4,110**	**696**	**3**	**190**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**5,036**
Percent	**0.6%**	**81.6%**	**13.8%**	**0.1%**	**3.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	5	0	1	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	32	6	0	3	0	0	0	0	0	0	0	0	**41**
7:00 AM	0	100	41	3	17	0	0	0	0	0	0	0	0	**161**
8:00 AM	3	127	53	3	19	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	90	52	0	16	0	0	0	0	0	0	0	0	**158**
10:00 AM	4	83	49	1	21	2	0	0	0	0	0	0	0	**160**
11:00 AM	2	121	44	0	15	0	0	0	0	0	0	0	0	**182**
12:00 PM	3	129	61	1	22	0	0	0	0	0	0	0	0	**216**
1:00 PM	3	142	48	0	19	0	0	0	0	0	0	0	0	**212**
2:00 PM	1	124	65	1	18	0	0	0	0	0	0	0	0	**209**
3:00 PM	2	171	53	0	13	0	0	0	0	0	0	0	0	**239**
4:00 PM	1	143	46	1	25	0	0	0	0	0	0	0	0	**216**
5:00 PM	4	153	58	0	10	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	129	46	0	7	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	93	29	2	5	0	0	0	0	0	0	0	0	**130**
8:00 PM	1	77	21	1	6	0	0	0	0	0	0	0	0	**106**
9:00 PM	1	65	26	0	5	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	26	13	0	3	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	13	6	0	1	0	0	0	0	0	0	0	0	**20**
Total	**29**	**1,842**	**730**	**13**	**227**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.0%**	**64.8%**	**25.7%**	**0.5%**	**8.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	16	4	0	1	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	65	14	0	8	0	0	0	0	0	0	0	0	**88**
7:00 AM	2	233	55	0	20	1	0	0	0	1	0	0	0	**312**
8:00 AM	4	258	51	0	17	1	0	0	0	0	0	0	0	**331**
9:00 AM	0	245	55	0	9	0	0	0	0	0	0	0	0	**309**
10:00 AM	4	195	47	0	9	1	0	0	0	0	0	0	0	**256**
11:00 AM	3	253	45	0	18	0	0	0	0	0	0	0	0	**319**
12:00 PM	2	269	56	0	14	0	0	0	0	0	0	0	0	**341**
1:00 PM	1	262	48	0	11	0	0	0	0	0	0	0	0	**322**
2:00 PM	2	277	64	0	26	0	0	0	0	2	0	0	0	**371**
3:00 PM	2	314	52	0	12	0	0	0	0	0	0	0	0	**380**
4:00 PM	3	311	45	0	15	2	0	0	0	0	0	0	0	**376**
5:00 PM	2	377	49	2	10	0	0	0	0	0	0	0	0	**440**
6:00 PM	2	306	41	1	7	0	0	0	1	0	0	0	0	**358**
7:00 PM	0	244	29	0	6	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	187	17	0	4	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	142	6	0	2	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	95	8	0	1	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	29	3	0	0	0	0	0	0	0	0	0	0	**32**
Total	**28**	**4,110**	**696**	**3**	**190**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**5,036**
Percent	**0.6%**	**81.6%**	**13.8%**	**0.1%**	**3.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	5	0	1	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	32	6	0	3	0	0	0	0	0	0	0	0	**41**
7:00 AM	0	100	41	3	17	0	0	0	0	0	0	0	0	**161**
8:00 AM	3	127	53	3	19	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	90	52	0	16	0	0	0	0	0	0	0	0	**158**
10:00 AM	4	83	49	1	21	2	0	0	0	0	0	0	0	**160**
11:00 AM	2	121	44	0	15	0	0	0	0	0	0	0	0	**182**
12:00 PM	3	129	61	1	22	0	0	0	0	0	0	0	0	**216**
1:00 PM	3	142	48	0	19	0	0	0	0	0	0	0	0	**212**
2:00 PM	1	124	65	1	18	0	0	0	0	0	0	0	0	**209**
3:00 PM	2	171	53	0	13	0	0	0	0	0	0	0	0	**239**
4:00 PM	1	143	46	1	25	0	0	0	0	0	0	0	0	**216**
5:00 PM	4	153	58	0	10	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	129	46	0	7	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	93	29	2	5	0	0	0	0	0	0	0	0	**130**
8:00 PM	1	77	21	1	6	0	0	0	0	0	0	0	0	**106**
9:00 PM	1	65	26	0	5	0	0	0	0	0	0	0	0	**97**
10:00 PM	0	26	13	0	3	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	13	6	0	1	0	0	0	0	0	0	0	0	**20**
Total	**29**	**1,842**	**730**	**13**	**227**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.0%**	**64.8%**	**25.7%**	**0.5%**	**8.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	16	4	0	1	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	65	14	0	8	0	0	0	0	0	0	0	0	**88**
7:00 AM	2	233	55	0	20	1	0	0	0	1	0	0	0	**312**
8:00 AM	4	258	51	0	17	1	0	0	0	0	0	0	0	**331**
9:00 AM	0	245	55	0	9	0	0	0	0	0	0	0	0	**309**
10:00 AM	4	195	47	0	9	1	0	0	0	0	0	0	0	**256**
11:00 AM	3	253	45	0	18	0	0	0	0	0	0	0	0	**319**
12:00 PM	2	269	56	0	14	0	0	0	0	0	0	0	0	**341**
1:00 PM	1	262	48	0	11	0	0	0	0	0	0	0	0	**322**
2:00 PM	2	277	64	0	26	0	0	0	0	2	0	0	0	**371**
3:00 PM	2	314	52	0	12	0	0	0	0	0	0	0	0	**380**
4:00 PM	3	311	45	0	15	2	0	0	0	0	0	0	0	**376**
5:00 PM	2	377	49	2	10	0	0	0	0	0	0	0	0	**440**
6:00 PM	2	306	41	1	7	0	0	0	1	0	0	0	0	**358**
7:00 PM	0	244	29	0	6	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	187	17	0	4	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	142	6	0	2	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	95	8	0	1	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	29	3	0	0	0	0	0	0	0	0	0	0	**32**
Total	**28**	**4,110**	**696**	**3**	**190**	**5**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**5,036**
Percent	**0.6%**	**81.6%**	**13.8%**	**0.1%**	**3.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 35

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	39	149	472	964	833	298	75	9	4	0	0	0	0	0	0	0	0	2,843
Percent	1.4%	5.2%	16.6%	33.9%	29.3%	10.5%	2.6%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	18	18	132	1,332	2,252	1,039	216	22	7	0	0	0	0	0	0	0	0	5,036
Percent	0.4%	0.4%	2.6%	26.4%	44.7%	20.6%	4.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	57	167	604	2,296	3,085	1,337	291	31	11	0	0	0	0	0	0	0	0	7,879
Percent	0.7%	2.1%	7.7%	29.1%	39.2%	17.0%	3.7%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	24.0	mph	Mean (Average) Speed	23.9	mph
85th Percentile	29.6	mph	10 mph Pace	18.9 - 28.9	mph
95th Percentile	33.0	mph	Percent in Pace	63.6	%
Westbound			**Westbound**		
50th Percentile (Median)	27.1	mph	Mean (Average) Speed	27.4	mph
85th Percentile	31.9	mph	10 mph Pace	22.1 - 32.1	mph
95th Percentile	34.9	mph	Percent in Pace	77.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	4	2	1	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	1	5	5	5	2	0	0	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	1	6	13	12	8	1	0	0	0	0	0	0	0	0	0	0	**41**
7:00 AM	1	5	25	48	51	23	7	1	0	0	0	0	0	0	0	0	0	**161**
8:00 AM	5	15	30	78	52	20	4	0	1	0	0	0	0	0	0	0	0	**205**
9:00 AM	1	7	27	50	44	17	11	1	0	0	0	0	0	0	0	0	0	**158**
10:00 AM	0	10	23	46	63	16	1	1	0	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	2	23	66	57	26	7	1	0	0	0	0	0	0	0	0	0	**182**
12:00 PM	0	12	40	84	56	14	6	1	3	0	0	0	0	0	0	0	0	**216**
1:00 PM	0	12	30	76	68	23	3	0	0	0	0	0	0	0	0	0	0	**212**
2:00 PM	4	10	36	61	72	18	8	0	0	0	0	0	0	0	0	0	0	**209**
3:00 PM	3	13	46	96	53	22	4	2	0	0	0	0	0	0	0	0	0	**239**
4:00 PM	3	20	48	74	50	16	5	0	0	0	0	0	0	0	0	0	0	**216**
5:00 PM	12	23	50	58	59	17	6	0	0	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	8	25	60	65	19	5	0	0	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	4	17	46	38	21	3	0	0	0	0	0	0	0	0	0	0	**130**
8:00 PM	5	4	20	41	28	8	0	0	0	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	3	15	35	26	14	2	2	0	0	0	0	0	0	0	0	0	**97**
10:00 PM	1	0	5	16	16	4	0	0	0	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	0	3	4	9	4	0	0	0	0	0	0	0	0	0	0	0	**20**
Total	**39**	**149**	**472**	**964**	**833**	**298**	**75**	**9**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.4%**	**5.2%**	**16.6%**	**33.9%**	**29.3%**	**10.5%**	**2.6%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	24.0	mph	Mean (Average) Speed	23.9	mph
85th Percentile	29.6	mph	10 mph Pace	18.9 - 28.9	mph
95th Percentile	33.0	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
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Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	2	8	4	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	0	0	3	4	1	2	0	1	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	2	6	9	1	3	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	0	3	23	24	27	10	0	0	0	0	0	0	0	0	0	0	**88**
7:00 AM	0	0	9	99	134	54	15	1	0	0	0	0	0	0	0	0	0	**312**
8:00 AM	2	1	6	71	151	79	17	3	1	0	0	0	0	0	0	0	0	**331**
9:00 AM	0	1	9	70	157	53	18	1	0	0	0	0	0	0	0	0	0	**309**
10:00 AM	1	2	6	51	119	64	13	0	0	0	0	0	0	0	0	0	0	**256**
11:00 AM	1	0	8	85	142	69	11	2	1	0	0	0	0	0	0	0	0	**319**
12:00 PM	3	0	3	100	145	78	12	0	0	0	0	0	0	0	0	0	0	**341**
1:00 PM	3	2	8	105	136	60	8	0	0	0	0	0	0	0	0	0	0	**322**
2:00 PM	1	0	16	93	176	69	12	4	0	0	0	0	0	0	0	0	0	**371**
3:00 PM	1	0	6	91	176	87	17	0	2	0	0	0	0	0	0	0	0	**380**
4:00 PM	2	2	12	94	180	74	10	2	0	0	0	0	0	0	0	0	0	**376**
5:00 PM	2	5	16	133	194	75	12	3	0	0	0	0	0	0	0	0	0	**440**
6:00 PM	1	1	13	101	153	78	10	1	0	0	0	0	0	0	0	0	0	**358**
7:00 PM	0	0	5	80	119	56	15	3	1	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	1	6	61	92	36	10	1	1	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	1	2	36	73	31	7	0	0	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	0	1	21	42	30	10	0	0	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	0	1	6	12	9	3	1	0	0	0	0	0	0	0	0	0	**32**
Total	**18**	**18**	**132**	**1,332**	**2,252**	**1,039**	**216**	**22**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.4%**	**0.4%**	**2.6%**	**26.4%**	**44.7%**	**20.6%**	**4.3%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.1	mph	Mean (Average) Speed	27.4	mph
85th Percentile	31.9	mph	10 mph Pace	22.1 - 32.1	mph
95th Percentile	34.9	mph	Percent in Pace	77.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	4	2	1	0	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	1	5	5	5	2	0	0	0	0	0	0	0	0	0	0	**18**
6:00 AM	0	1	6	13	12	8	1	0	0	0	0	0	0	0	0	0	0	**41**
7:00 AM	1	5	25	48	51	23	7	1	0	0	0	0	0	0	0	0	0	**161**
8:00 AM	5	15	30	78	52	20	4	0	1	0	0	0	0	0	0	0	0	**205**
9:00 AM	1	7	27	50	44	17	11	1	0	0	0	0	0	0	0	0	0	**158**
10:00 AM	0	10	23	46	63	16	1	1	0	0	0	0	0	0	0	0	0	**160**
11:00 AM	0	2	23	66	57	26	7	1	0	0	0	0	0	0	0	0	0	**182**
12:00 PM	0	12	40	84	56	14	6	1	3	0	0	0	0	0	0	0	0	**216**
1:00 PM	0	12	30	76	68	23	3	0	0	0	0	0	0	0	0	0	0	**212**
2:00 PM	4	10	36	61	72	18	8	0	0	0	0	0	0	0	0	0	0	**209**
3:00 PM	3	13	46	96	53	22	4	2	0	0	0	0	0	0	0	0	0	**239**
4:00 PM	3	20	48	74	50	16	5	0	0	0	0	0	0	0	0	0	0	**216**
5:00 PM	12	23	50	58	59	17	6	0	0	0	0	0	0	0	0	0	0	**225**
6:00 PM	3	8	25	60	65	19	5	0	0	0	0	0	0	0	0	0	0	**185**
7:00 PM	1	4	17	46	38	21	3	0	0	0	0	0	0	0	0	0	0	**130**
8:00 PM	5	4	20	41	28	8	0	0	0	0	0	0	0	0	0	0	0	**106**
9:00 PM	0	3	15	35	26	14	2	2	0	0	0	0	0	0	0	0	0	**97**
10:00 PM	1	0	5	16	16	4	0	0	0	0	0	0	0	0	0	0	0	**42**
11:00 PM	0	0	3	4	9	4	0	0	0	0	0	0	0	0	0	0	0	**20**
Total	**39**	**149**	**472**	**964**	**833**	**298**	**75**	**9**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,843**
Percent	**1.4%**	**5.2%**	**16.6%**	**33.9%**	**29.3%**	**10.5%**	**2.6%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	24.0	mph	Mean (Average) Speed	23.9	mph
85th Percentile	29.6	mph	10 mph Pace	18.9 - 28.9	mph
95th Percentile	33.0	mph	Percent in Pace	63.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 to 4/25/2019
Site Code: 35

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	2	8	4	1	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	0	0	3	4	1	2	0	1	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	0	1	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	**6**
5:00 AM	0	0	2	6	9	1	3	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	1	0	3	23	24	27	10	0	0	0	0	0	0	0	0	0	0	**88**
7:00 AM	0	0	9	99	134	54	15	1	0	0	0	0	0	0	0	0	0	**312**
8:00 AM	2	1	6	71	151	79	17	3	1	0	0	0	0	0	0	0	0	**331**
9:00 AM	0	1	9	70	157	53	18	1	0	0	0	0	0	0	0	0	0	**309**
10:00 AM	1	2	6	51	119	64	13	0	0	0	0	0	0	0	0	0	0	**256**
11:00 AM	1	0	8	85	142	69	11	2	1	0	0	0	0	0	0	0	0	**319**
12:00 PM	3	0	3	100	145	78	12	0	0	0	0	0	0	0	0	0	0	**341**
1:00 PM	3	2	8	105	136	60	8	0	0	0	0	0	0	0	0	0	0	**322**
2:00 PM	1	0	16	93	176	69	12	4	0	0	0	0	0	0	0	0	0	**371**
3:00 PM	1	0	6	91	176	87	17	0	2	0	0	0	0	0	0	0	0	**380**
4:00 PM	2	2	12	94	180	74	10	2	0	0	0	0	0	0	0	0	0	**376**
5:00 PM	2	5	16	133	194	75	12	3	0	0	0	0	0	0	0	0	0	**440**
6:00 PM	1	1	13	101	153	78	10	1	0	0	0	0	0	0	0	0	0	**358**
7:00 PM	0	0	5	80	119	56	15	3	1	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	1	6	61	92	36	10	1	1	0	0	0	0	0	0	0	0	**208**
9:00 PM	0	1	2	36	73	31	7	0	0	0	0	0	0	0	0	0	0	**150**
10:00 PM	0	0	1	21	42	30	10	0	0	0	0	0	0	0	0	0	0	**104**
11:00 PM	0	0	1	6	12	9	3	1	0	0	0	0	0	0	0	0	0	**32**
Total	**18**	**18**	**132**	**1,332**	**2,252**	**1,039**	**216**	**22**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.4%**	**0.4%**	**2.6%**	**26.4%**	**44.7%**	**20.6%**	**4.3%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.1	mph	Mean (Average) Speed	27.4	mph
85th Percentile	31.9	mph	10 mph Pace	22.1 - 32.1	mph
95th Percentile	34.9	mph	Percent in Pace	77.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: N San Pedro Rd, B/W Los Ranchitos & Civic Center
Date Range: 4/25/2019 - 5/1/2019
Site Code: 35

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	8	16	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	16	24
1:00 AM	4	11	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	11	15
2:00 AM	2	5	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	7
3:00 AM	3	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4
4:00 AM	4	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10
5:00 AM	18	21	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	21	39
6:00 AM	41	88	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	88	129
7:00 AM	161	312	473	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	312	473
8:00 AM	**205**	**331**	**536**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**205**	**331**	**536**
9:00 AM	158	309	467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	309	467
10:00 AM	160	256	416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	256	416
11:00 AM	182	319	501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	319	501
12:00 PM	216	341	557	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	341	557
1:00 PM	212	322	534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	212	322	534
2:00 PM	209	371	580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	209	371	580
3:00 PM	**239**	380	619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**239**	380	619
4:00 PM	216	376	592	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	376	592
5:00 PM	225	**440**	**665**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	**440**	**665**
6:00 PM	185	358	543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	185	358	543
7:00 PM	130	279	409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	279	409
8:00 PM	106	208	314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	208	314
9:00 PM	97	150	247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	150	247
10:00 PM	42	104	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	104	146
11:00 PM	20	32	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	32	52
Total	2,843	5,036	7,879	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,843	5,036	7,879
Percent	36%	64%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36%	64%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	205	331	536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	205	331	536
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	239	440	665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	239	440	665

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Northgate Dr, B/W Freitas & Los Ranchitos

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 36

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	8	1,704	214	0	66	2	0	0	1	0	0	0	0	1,995
Percent	0.4%	85.4%	10.7%	0.0%	3.3%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	4	2,200	210	0	49	2	0	0	0	0	0	0	0	2,465
Percent	0.2%	89.2%	8.5%	0.0%	2.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	12	3,904	424	0	115	4	0	0	1	0	0	0	0	4,460
Percent	0.3%	87.5%	9.5%	0.0%	2.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	13	2	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	24	5	0	3	1	0	0	0	0	0	0	0	**33**
7:00 AM	0	86	17	0	2	0	0	0	0	0	0	0	0	**105**
8:00 AM	1	76	14	0	7	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	83	12	0	3	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	100	13	0	1	0	0	0	0	0	0	0	0	**114**
11:00 AM	1	124	17	0	7	1	0	0	0	0	0	0	0	**150**
12:00 PM	0	121	9	0	5	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	141	16	0	3	0	0	0	1	0	0	0	0	**161**
2:00 PM	1	140	9	0	8	0	0	0	0	0	0	0	0	**158**
3:00 PM	1	162	20	0	12	0	0	0	0	0	0	0	0	**195**
4:00 PM	1	157	20	0	4	0	0	0	0	0	0	0	0	**182**
5:00 PM	0	119	13	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	1	106	12	0	4	0	0	0	0	0	0	0	0	**123**
7:00 PM	2	79	14	0	1	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	66	6	0	1	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	51	2	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	24	7	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	25	1	0	0	0	0	0	0	0	0	0	0	**26**
Total	**8**	**1,704**	**214**	**0**	**66**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.4%**	**85.4%**	**10.7%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	26	4	0	1	0	0	0	0	0	0	0	0	**32**
6:00 AM	1	58	1	0	1	1	0	0	0	0	0	0	0	**62**
7:00 AM	1	138	19	0	1	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	182	16	0	7	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	140	15	0	4	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	121	9	0	4	1	0	0	0	0	0	0	0	**135**
11:00 AM	1	147	20	0	5	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	143	14	0	3	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	156	18	0	4	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	158	11	0	1	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	195	19	0	7	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	203	12	0	5	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	176	13	0	2	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	105	12	0	2	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	89	12	0	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	71	6	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	44	3	0	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**4**	**2,200**	**210**	**0**	**49**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.2%**	**89.2%**	**8.5%**	**0.0%**	**2.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	13	2	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	24	5	0	3	1	0	0	0	0	0	0	0	**33**
7:00 AM	0	86	17	0	2	0	0	0	0	0	0	0	0	**105**
8:00 AM	1	76	14	0	7	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	83	12	0	3	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	100	13	0	1	0	0	0	0	0	0	0	0	**114**
11:00 AM	1	124	17	0	7	1	0	0	0	0	0	0	0	**150**
12:00 PM	0	121	9	0	5	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	141	16	0	3	0	0	0	1	0	0	0	0	**161**
2:00 PM	1	140	9	0	8	0	0	0	0	0	0	0	0	**158**
3:00 PM	1	162	20	0	12	0	0	0	0	0	0	0	0	**195**
4:00 PM	1	157	20	0	4	0	0	0	0	0	0	0	0	**182**
5:00 PM	0	119	13	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	1	106	12	0	4	0	0	0	0	0	0	0	0	**123**
7:00 PM	2	79	14	0	1	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	66	6	0	1	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	51	2	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	24	7	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	25	1	0	0	0	0	0	0	0	0	0	0	**26**
Total	**8**	**1,704**	**214**	**0**	**66**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.4%**	**85.4%**	**10.7%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

DATA SOLUTIONS

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	26	4	0	1	0	0	0	0	0	0	0	0	**32**
6:00 AM	1	58	1	0	1	1	0	0	0	0	0	0	0	**62**
7:00 AM	1	138	19	0	1	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	182	16	0	7	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	140	15	0	4	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	121	9	0	4	1	0	0	0	0	0	0	0	**135**
11:00 AM	1	147	20	0	5	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	143	14	0	3	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	156	18	0	4	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	158	11	0	1	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	195	19	0	7	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	203	12	0	5	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	176	13	0	2	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	105	12	0	2	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	89	12	0	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	71	6	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	44	3	0	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**4**	**2,200**	**210**	**0**	**49**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.2%**	**89.2%**	**8.5%**	**0.0%**	**2.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	2	1	0	1	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	13	2	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	24	5	0	3	1	0	0	0	0	0	0	0	**33**
7:00 AM	0	86	17	0	2	0	0	0	0	0	0	0	0	**105**
8:00 AM	1	76	14	0	7	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	83	12	0	3	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	100	13	0	1	0	0	0	0	0	0	0	0	**114**
11:00 AM	1	124	17	0	7	1	0	0	0	0	0	0	0	**150**
12:00 PM	0	121	9	0	5	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	141	16	0	3	0	0	0	1	0	0	0	0	**161**
2:00 PM	1	140	9	0	8	0	0	0	0	0	0	0	0	**158**
3:00 PM	1	162	20	0	12	0	0	0	0	0	0	0	0	**195**
4:00 PM	1	157	20	0	4	0	0	0	0	0	0	0	0	**182**
5:00 PM	0	119	13	0	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	1	106	12	0	4	0	0	0	0	0	0	0	0	**123**
7:00 PM	2	79	14	0	1	0	0	0	0	0	0	0	0	**96**
8:00 PM	0	66	6	0	1	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	51	2	0	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	24	7	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	25	1	0	0	0	0	0	0	0	0	0	0	**26**
Total	**8**	**1,704**	**214**	**0**	**66**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.4%**	**85.4%**	**10.7%**	**0.0%**	**3.3%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	26	4	0	1	0	0	0	0	0	0	0	0	**32**
6:00 AM	1	58	1	0	1	1	0	0	0	0	0	0	0	**62**
7:00 AM	1	138	19	0	1	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	182	16	0	7	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	140	15	0	4	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	121	9	0	4	1	0	0	0	0	0	0	0	**135**
11:00 AM	1	147	20	0	5	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	143	14	0	3	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	156	18	0	4	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	158	11	0	1	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	195	19	0	7	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	203	12	0	5	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	176	13	0	2	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	105	12	0	2	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	89	12	0	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	71	6	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	44	3	0	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	16	0	0	0	0	0	0	0	0	0	0	0	**16**
Total	**4**	**2,200**	**210**	**0**	**49**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.2%**	**89.2%**	**8.5%**	**0.0%**	**2.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Northgate Dr, B/W Freitas & Los Ranchitos

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 36

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	0	3	7	86	515	885	414	69	13	3	0	0	0	0	0	0	0	1,995
Percent	0.0%	0.2%	0.4%	4.3%	25.8%	44.4%	20.8%	3.5%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	0	2	6	93	660	1,123	478	93	10	0	0	0	0	0	0	0	0	2,465
Percent	0.0%	0.1%	0.2%	3.8%	26.8%	45.6%	19.4%	3.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	0	5	13	179	1,175	2,008	892	162	23	3	0	0	0	0	0	0	0	4,460
Percent	0.0%	0.1%	0.3%	4.0%	26.3%	45.0%	20.0%	3.6%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	32.2	mph	Mean (Average) Speed	32.2	mph
85th Percentile	36.7	mph	10 mph Pace	26.8 - 36.8	mph
95th Percentile	39.6	mph	Percent in Pace	74.8	%
Southbound			**Southbound**		
50th Percentile (Median)	31.9	mph	Mean (Average) Speed	32.1	mph
85th Percentile	36.6	mph	10 mph Pace	27.3 - 37.3	mph
95th Percentile	39.4	mph	Percent in Pace	77.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

idax DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	2	0	2	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	2	1	9	3	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	0	0	2	10	10	9	1	1	0	0	0	0	0	0	0	0	**33**
7:00 AM	0	0	0	1	15	46	33	9	1	0	0	0	0	0	0	0	0	**105**
8:00 AM	0	0	0	3	20	43	26	5	1	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	1	0	5	21	43	21	6	1	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	0	0	7	30	52	22	3	0	0	0	0	0	0	0	0	0	**114**
11:00 AM	0	0	0	4	37	72	35	1	1	0	0	0	0	0	0	0	0	**150**
12:00 PM	0	0	0	2	48	60	23	2	0	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	0	0	6	39	77	34	3	2	0	0	0	0	0	0	0	0	**161**
2:00 PM	0	0	1	5	36	71	34	8	2	1	0	0	0	0	0	0	0	**158**
3:00 PM	0	0	0	6	49	95	41	4	0	0	0	0	0	0	0	0	0	**195**
4:00 PM	0	0	1	6	47	76	39	11	1	1	0	0	0	0	0	0	0	**182**
5:00 PM	0	1	0	5	30	63	28	5	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	0	0	1	9	42	45	22	4	0	0	0	0	0	0	0	0	0	**123**
7:00 PM	0	0	2	7	32	35	18	1	0	1	0	0	0	0	0	0	0	**96**
8:00 PM	0	0	1	5	27	31	7	2	0	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	0	0	4	15	26	7	1	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	0	1	3	5	14	6	1	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	1	0	3	7	13	1	1	0	0	0	0	0	0	0	0	0	**26**
Total	**0**	**3**	**7**	**86**	**515**	**885**	**414**	**69**	**13**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.0%**	**0.2%**	**0.4%**	**4.3%**	**25.8%**	**44.4%**	**20.8%**	**3.5%**	**0.7%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.2	mph	Mean (Average) Speed	32.2	mph
85th Percentile	36.7	mph	10 mph Pace	26.8 - 36.8	mph
95th Percentile	39.6	mph	Percent in Pace	74.8	%

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

idax DATA SOLUTIONS

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	0	0	6	13	10	3	0	0	0	0	0	0	0	0	0	**32**
6:00 AM	0	0	0	2	12	34	8	3	3	0	0	0	0	0	0	0	0	**62**
7:00 AM	0	0	1	5	28	71	46	8	0	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	0	0	6	37	95	55	12	0	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	0	1	4	34	68	40	11	1	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	0	0	7	35	50	35	7	1	0	0	0	0	0	0	0	0	**135**
11:00 AM	0	0	1	5	47	87	33	0	0	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	0	0	8	47	77	22	5	1	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	0	0	7	56	80	30	5	0	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	0	0	4	64	70	30	2	0	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	1	1	6	59	102	42	10	0	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	0	0	6	74	87	44	8	1	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	0	0	10	38	107	25	10	1	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	0	0	3	41	58	15	2	0	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	0	1	9	37	41	11	2	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	0	0	5	24	39	9	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	0	0	3	10	22	11	1	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	0	0	3	5	10	4	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	1	1	0	2	6	5	1	0	0	0	0	0	0	0	0	0	**16**
Total	**0**	**2**	**6**	**93**	**660**	**1,123**	**478**	**93**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.0%**	**0.1%**	**0.2%**	**3.8%**	**26.8%**	**45.6%**	**19.4%**	**3.8%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	31.9	mph	Mean (Average) Speed	32.1	mph
85th Percentile	36.6	mph	10 mph Pace	27.3 - 37.3	mph
95th Percentile	39.4	mph	Percent in Pace	77.04	%

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	2	0	2	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	2	1	9	3	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	0	0	2	10	10	9	1	1	0	0	0	0	0	0	0	0	**33**
7:00 AM	0	0	0	1	15	46	33	9	1	0	0	0	0	0	0	0	0	**105**
8:00 AM	0	0	0	3	20	43	26	5	1	0	0	0	0	0	0	0	0	**98**
9:00 AM	0	1	0	5	21	43	21	6	1	0	0	0	0	0	0	0	0	**98**
10:00 AM	0	0	0	7	30	52	22	3	0	0	0	0	0	0	0	0	0	**114**
11:00 AM	0	0	0	4	37	72	35	1	1	0	0	0	0	0	0	0	0	**150**
12:00 PM	0	0	0	2	48	60	23	2	0	0	0	0	0	0	0	0	0	**135**
1:00 PM	0	0	0	6	39	77	34	3	2	0	0	0	0	0	0	0	0	**161**
2:00 PM	0	0	1	5	36	71	34	8	2	1	0	0	0	0	0	0	0	**158**
3:00 PM	0	0	0	6	49	95	41	4	0	0	0	0	0	0	0	0	0	**195**
4:00 PM	0	0	1	6	47	76	39	11	1	1	0	0	0	0	0	0	0	**182**
5:00 PM	0	1	0	5	30	63	28	5	2	0	0	0	0	0	0	0	0	**134**
6:00 PM	0	0	1	9	42	45	22	4	0	0	0	0	0	0	0	0	0	**123**
7:00 PM	0	0	2	7	32	35	18	1	0	1	0	0	0	0	0	0	0	**96**
8:00 PM	0	0	1	5	27	31	7	2	0	0	0	0	0	0	0	0	0	**73**
9:00 PM	0	0	0	4	15	26	7	1	0	0	0	0	0	0	0	0	0	**53**
10:00 PM	0	0	1	3	5	14	6	1	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	1	0	3	7	13	1	1	0	0	0	0	0	0	0	0	0	**26**
Total	**0**	**3**	**7**	**86**	**515**	**885**	**414**	**69**	**13**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,995**
Percent	**0.0%**	**0.2%**	**0.4%**	**4.3%**	**25.8%**	**44.4%**	**20.8%**	**3.5%**	**0.7%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.2	mph	Mean (Average) Speed	32.2	mph
85th Percentile	36.7	mph	10 mph Pace	26.8 - 36.8	mph
95th Percentile	39.6	mph	Percent in Pace	74.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 to 4/25/2019
Site Code: 36

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	**2**
3:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	0	0	6	13	10	3	0	0	0	0	0	0	0	0	0	**32**
6:00 AM	0	0	0	2	12	34	8	3	3	0	0	0	0	0	0	0	0	**62**
7:00 AM	0	0	1	5	28	71	46	8	0	0	0	0	0	0	0	0	0	**159**
8:00 AM	0	0	0	6	37	95	55	12	0	0	0	0	0	0	0	0	0	**205**
9:00 AM	0	0	1	4	34	68	40	11	1	0	0	0	0	0	0	0	0	**159**
10:00 AM	0	0	0	7	35	50	35	7	1	0	0	0	0	0	0	0	0	**135**
11:00 AM	0	0	1	5	47	87	33	0	0	0	0	0	0	0	0	0	0	**173**
12:00 PM	0	0	0	8	47	77	22	5	1	0	0	0	0	0	0	0	0	**160**
1:00 PM	0	0	0	7	56	80	30	5	0	0	0	0	0	0	0	0	0	**178**
2:00 PM	0	0	0	4	64	70	30	2	0	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	1	1	6	59	102	42	10	0	0	0	0	0	0	0	0	0	**221**
4:00 PM	0	0	0	6	74	87	44	8	1	0	0	0	0	0	0	0	0	**220**
5:00 PM	0	0	0	10	38	107	25	10	1	0	0	0	0	0	0	0	0	**191**
6:00 PM	0	0	0	3	41	58	15	2	0	0	0	0	0	0	0	0	0	**119**
7:00 PM	0	0	1	9	37	41	11	2	1	0	0	0	0	0	0	0	0	**102**
8:00 PM	0	0	0	5	24	39	9	0	0	0	0	0	0	0	0	0	0	**77**
9:00 PM	0	0	0	3	10	22	11	1	0	0	0	0	0	0	0	0	0	**47**
10:00 PM	0	0	0	3	5	10	4	0	0	0	0	0	0	0	0	0	0	**22**
11:00 PM	0	1	1	0	2	6	5	1	0	0	0	0	0	0	0	0	0	**16**
Total	**0**	**2**	**6**	**93**	**660**	**1,123**	**478**	**93**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,465**
Percent	**0.0%**	**0.1%**	**0.2%**	**3.8%**	**26.8%**	**45.6%**	**19.4%**	**3.8%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	31.9	mph	Mean (Average) Speed	32.1	mph
85th Percentile	36.6	mph	10 mph Pace	27.3 - 37.3	mph
95th Percentile	39.4	mph	Percent in Pace	77.0	%

Location: Northgate Dr, B/W Freitas & Los Ranchitos
Date Range: 4/25/2019 - 5/1/2019
Site Code: 36

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	5	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	8
1:00 AM	2	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6
2:00 AM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
3:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
4:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
5:00 AM	15	32	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	32	47
6:00 AM	33	62	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	62	95
7:00 AM	105	159	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	159	264
8:00 AM	98	**205**	303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	**205**	303
9:00 AM	98	159	257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	159	257
10:00 AM	114	135	249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114	135	249
11:00 AM	**150**	173	**323**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**150**	173	**323**
12:00 PM	135	160	295	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	160	295
1:00 PM	161	178	339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161	178	339
2:00 PM	158	170	328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	170	328
3:00 PM	**195**	**221**	**416**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**195**	**221**	**416**
4:00 PM	182	220	402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	220	402
5:00 PM	134	191	325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	191	325
6:00 PM	123	119	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	119	242
7:00 PM	96	102	198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	102	198
8:00 PM	73	77	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	77	150
9:00 PM	53	47	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	47	100
10:00 PM	31	22	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	22	53
11:00 PM	26	16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	16	42
Total	1,995	2,465	4,460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,995	2,465	4,460
Percent	45%	55%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45%	55%	-
AM Peak	11:00	08:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	11:00
Vol.	150	205	323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	205	323
PM Peak	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	15:00	15:00
Vol.	195	221	416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	221	416

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Point San Pedro Rd, B/W Mooring & END

Count Direction: Eastbound / Westbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 37

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	21	7,256	1,244	4	266	87	0	6	40	8	7	2	7	8,948
Percent	0.2%	81.1%	13.9%	0.0%	3.0%	1.0%	0.0%	0.1%	0.4%	0.1%	0.1%	0.0%	0.1%	100%
Westbound	25	6,398	1,888	10	586	78	0	18	31	5	10	4	4	9,057
Percent	0.3%	70.6%	20.8%	0.1%	6.5%	0.9%	0.0%	0.2%	0.3%	0.1%	0.1%	0.0%	0.0%	100%
Total	46	13,654	3,132	14	852	165	0	24	71	13	17	6	11	18,005
Percent	0.3%	75.8%	17.4%	0.1%	4.7%	0.9%	0.0%	0.1%	0.4%	0.1%	0.1%	0.0%	0.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

Wednesday, April 24, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	**31**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	4	0	0	0	0	0	1	0	0	0	0	**14**
5:00 AM	1	53	11	0	6	1	0	0	1	0	0	0	0	**73**
6:00 AM	2	117	28	0	12	5	0	0	1	1	0	0	0	**166**
7:00 AM	0	330	108	2	31	15	0	0	8	0	0	1	1	**496**
8:00 AM	0	445	138	1	32	5	0	2	3	0	0	1	0	**627**
9:00 AM	0	346	87	0	18	8	0	1	7	1	2	0	0	**470**
10:00 AM	2	360	70	0	24	12	0	0	5	0	2	0	0	**475**
11:00 AM	1	438	82	0	22	14	0	1	5	1	2	0	3	**569**
12:00 PM	0	512	108	1	32	7	0	1	4	0	1	0	1	**667**
1:00 PM	0	554	93	0	18	4	0	0	4	3	0	0	1	**677**
2:00 PM	1	542	90	0	21	8	0	0	0	1	0	0	1	**664**
3:00 PM	1	536	83	0	11	2	0	0	0	1	0	0	0	**634**
4:00 PM	2	568	88	0	8	1	0	0	0	0	0	0	0	**667**
5:00 PM	3	627	82	0	8	0	0	1	0	0	0	0	0	**721**
6:00 PM	4	553	68	0	10	1	0	0	1	0	0	0	0	**637**
7:00 PM	2	461	36	0	8	0	0	0	0	0	0	0	0	**507**
8:00 PM	2	340	32	0	0	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	215	16	0	2	0	0	0	0	0	0	0	0	**233**
10:00 PM	0	157	12	0	1	1	0	0	0	0	0	0	0	**171**
11:00 PM	0	56	3	0	0	0	0	0	0	0	0	0	0	**59**
Total	**21**	**7,256**	**1,244**	**4**	**266**	**87**	**0**	**6**	**40**	**8**	**7**	**2**	**7**	**8,948**
Percent	**0.2%**	**81.1%**	**13.9%**	**0.0%**	**3.0%**	**1.0%**	**0.0%**	**0.1%**	**0.4%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

Wednesday, April 24, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
4:00 AM	0	19	10	0	5	1	0	0	0	0	0	0	0	**35**
5:00 AM	1	83	18	0	9	8	0	0	1	0	0	0	0	**120**
6:00 AM	3	220	62	0	22	10	0	0	0	0	0	0	0	**317**
7:00 AM	4	526	147	1	43	2	0	1	2	0	1	1	0	**728**
8:00 AM	0	644	197	0	38	7	0	2	8	1	2	1	0	**900**
9:00 AM	1	489	138	1	49	5	0	1	2	0	0	0	2	**688**
10:00 AM	0	426	130	2	41	8	0	0	5	2	2	0	1	**617**
11:00 AM	0	428	132	0	37	7	0	2	7	0	2	0	0	**615**
12:00 PM	1	413	108	2	43	10	0	4	3	1	1	1	0	**587**
1:00 PM	2	449	133	1	57	4	0	2	2	0	1	1	1	**653**
2:00 PM	2	469	157	3	44	1	0	1	1	1	0	0	0	**679**
3:00 PM	2	415	151	0	55	1	0	3	0	0	0	0	0	**627**
4:00 PM	2	406	138	0	46	3	0	0	0	0	1	0	0	**596**
5:00 PM	4	431	115	0	36	6	0	2	0	0	0	0	0	**594**
6:00 PM	1	371	105	0	19	0	0	0	0	0	0	0	0	**496**
7:00 PM	2	246	79	0	19	4	0	0	0	0	0	0	0	**350**
8:00 PM	0	183	45	0	14	1	0	0	0	0	0	0	0	**243**
9:00 PM	0	77	10	0	7	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	48	7	0	1	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	33	4	0	0	0	0	0	0	0	0	0	0	**37**
Total	**25**	**6,398**	**1,888**	**10**	**586**	**78**	**0**	**18**	**31**	**5**	**10**	**4**	**4**	**9,057**
Percent	**0.3%**	**70.6%**	**20.8%**	**0.1%**	**6.5%**	**0.9%**	**0.0%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	**31**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	4	0	0	0	0	0	1	0	0	0	0	**14**
5:00 AM	1	53	11	0	6	1	0	0	1	0	0	0	0	**73**
6:00 AM	2	117	28	0	12	5	0	0	1	1	0	0	0	**166**
7:00 AM	0	330	108	2	31	15	0	0	8	0	0	1	1	**496**
8:00 AM	0	445	138	1	32	5	0	2	3	0	0	1	0	**627**
9:00 AM	0	346	87	0	18	8	0	1	7	1	2	0	0	**470**
10:00 AM	2	360	70	0	24	12	0	0	5	0	2	0	0	**475**
11:00 AM	1	438	82	0	22	14	0	1	5	1	2	0	3	**569**
12:00 PM	0	512	108	1	32	7	0	1	4	0	1	0	1	**667**
1:00 PM	0	554	93	0	18	4	0	0	4	3	0	0	1	**677**
2:00 PM	1	542	90	0	21	8	0	0	0	1	0	0	1	**664**
3:00 PM	1	536	83	0	11	2	0	0	0	1	0	0	0	**634**
4:00 PM	2	568	88	0	8	1	0	0	0	0	0	0	0	**667**
5:00 PM	3	627	82	0	8	0	0	1	0	0	0	0	0	**721**
6:00 PM	4	553	68	0	10	1	0	0	1	0	0	0	0	**637**
7:00 PM	2	461	36	0	8	0	0	0	0	0	0	0	0	**507**
8:00 PM	2	340	32	0	0	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	215	16	0	2	0	0	0	0	0	0	0	0	**233**
10:00 PM	0	157	12	0	1	1	0	0	0	0	0	0	0	**171**
11:00 PM	0	56	3	0	0	0	0	0	0	0	0	0	0	**59**
Total	**21**	**7,256**	**1,244**	**4**	**266**	**87**	**0**	**6**	**40**	**8**	**7**	**2**	**7**	**8,948**
Percent	**0.2%**	**81.1%**	**13.9%**	**0.0%**	**3.0%**	**1.0%**	**0.0%**	**0.1%**	**0.4%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
4:00 AM	0	19	10	0	5	1	0	0	0	0	0	0	0	**35**
5:00 AM	1	83	18	0	9	8	0	0	1	0	0	0	0	**120**
6:00 AM	3	220	62	0	22	10	0	0	0	0	0	0	0	**317**
7:00 AM	4	526	147	1	43	2	0	1	2	0	1	1	0	**728**
8:00 AM	0	644	197	0	38	7	0	2	8	1	2	1	0	**900**
9:00 AM	1	489	138	1	49	5	0	1	2	0	0	0	2	**688**
10:00 AM	0	426	130	2	41	8	0	0	5	2	2	0	1	**617**
11:00 AM	0	428	132	0	37	7	0	2	7	0	2	0	0	**615**
12:00 PM	1	413	108	2	43	10	0	4	3	1	1	1	0	**587**
1:00 PM	2	449	133	1	57	4	0	2	2	0	1	1	1	**653**
2:00 PM	2	469	157	3	44	1	0	1	1	1	0	0	0	**679**
3:00 PM	2	415	151	0	55	1	0	3	0	0	0	0	0	**627**
4:00 PM	2	406	138	0	46	3	0	0	0	0	1	0	0	**596**
5:00 PM	4	431	115	0	36	6	0	2	0	0	0	0	0	**594**
6:00 PM	1	371	105	0	19	0	0	0	0	0	0	0	0	**496**
7:00 PM	2	246	79	0	19	4	0	0	0	0	0	0	0	**350**
8:00 PM	0	183	45	0	14	1	0	0	0	0	0	0	0	**243**
9:00 PM	0	77	10	0	7	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	48	7	0	1	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	33	4	0	0	0	0	0	0	0	0	0	0	**37**
Total	**25**	**6,398**	**1,888**	**10**	**586**	**78**	**0**	**18**	**31**	**5**	**10**	**4**	**4**	**9,057**
Percent	**0.3%**	**70.6%**	**20.8%**	**0.1%**	**6.5%**	**0.9%**	**0.0%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	28	2	0	1	0	0	0	0	0	0	0	0	**31**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	**3**
4:00 AM	0	9	4	0	0	0	0	0	1	0	0	0	0	**14**
5:00 AM	1	53	11	0	6	1	0	0	1	0	0	0	0	**73**
6:00 AM	2	117	28	0	12	5	0	0	1	1	0	0	0	**166**
7:00 AM	0	330	108	2	31	15	0	0	8	0	0	1	1	**496**
8:00 AM	0	445	138	1	32	5	0	2	3	0	0	1	0	**627**
9:00 AM	0	346	87	0	18	8	0	1	7	1	2	0	0	**470**
10:00 AM	2	360	70	0	24	12	0	0	5	0	2	0	0	**475**
11:00 AM	1	438	82	0	22	14	0	1	5	1	2	0	3	**569**
12:00 PM	0	512	108	1	32	7	0	1	4	0	1	0	1	**667**
1:00 PM	0	554	93	0	18	4	0	0	4	3	0	0	1	**677**
2:00 PM	1	542	90	0	21	8	0	0	0	1	0	0	1	**664**
3:00 PM	1	536	83	0	11	2	0	0	0	1	0	0	0	**634**
4:00 PM	2	568	88	0	8	1	0	0	0	0	0	0	0	**667**
5:00 PM	3	627	82	0	8	0	0	1	0	0	0	0	0	**721**
6:00 PM	4	553	68	0	10	1	0	0	1	0	0	0	0	**637**
7:00 PM	2	461	36	0	8	0	0	0	0	0	0	0	0	**507**
8:00 PM	2	340	32	0	0	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	215	16	0	2	0	0	0	0	0	0	0	0	**233**
10:00 PM	0	157	12	0	1	1	0	0	0	0	0	0	0	**171**
11:00 PM	0	56	3	0	0	0	0	0	0	0	0	0	0	**59**
Total	**21**	**7,256**	**1,244**	**4**	**266**	**87**	**0**	**6**	**40**	**8**	**7**	**2**	**7**	**8,948**
Percent	**0.2%**	**81.1%**	**13.9%**	**0.0%**	**3.0%**	**1.0%**	**0.0%**	**0.1%**	**0.4%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
4:00 AM	0	19	10	0	5	1	0	0	0	0	0	0	0	**35**
5:00 AM	1	83	18	0	9	8	0	0	1	0	0	0	0	**120**
6:00 AM	3	220	62	0	22	10	0	0	0	0	0	0	0	**317**
7:00 AM	4	526	147	1	43	2	0	1	2	0	1	1	0	**728**
8:00 AM	0	644	197	0	38	7	0	2	8	1	2	1	0	**900**
9:00 AM	1	489	138	1	49	5	0	1	2	0	0	0	2	**688**
10:00 AM	0	426	130	2	41	8	0	0	5	2	2	0	1	**617**
11:00 AM	0	428	132	0	37	7	0	2	7	0	2	0	0	**615**
12:00 PM	1	413	108	2	43	10	0	4	3	1	1	1	0	**587**
1:00 PM	2	449	133	1	57	4	0	2	2	0	1	1	1	**653**
2:00 PM	2	469	157	3	44	1	0	1	1	1	0	0	0	**679**
3:00 PM	2	415	151	0	55	1	0	3	0	0	0	0	0	**627**
4:00 PM	2	406	138	0	46	3	0	0	0	0	1	0	0	**596**
5:00 PM	4	431	115	0	36	6	0	2	0	0	0	0	0	**594**
6:00 PM	1	371	105	0	19	0	0	0	0	0	0	0	0	**496**
7:00 PM	2	246	79	0	19	4	0	0	0	0	0	0	0	**350**
8:00 PM	0	183	45	0	14	1	0	0	0	0	0	0	0	**243**
9:00 PM	0	77	10	0	7	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	48	7	0	1	0	0	0	0	0	0	0	0	**56**
11:00 PM	0	33	4	0	0	0	0	0	0	0	0	0	0	**37**
Total	**25**	**6,398**	**1,888**	**10**	**586**	**78**	**0**	**18**	**31**	**5**	**10**	**4**	**4**	**9,057**
Percent	**0.3%**	**70.6%**	**20.8%**	**0.1%**	**6.5%**	**0.9%**	**0.0%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Point San Pedro Rd, B/W Mooring & END

Count Direction: Eastbound / Westbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 37

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	0	2	3	13	80	808	4,195	3,186	581	62	12	2	3	0	1	0	0	8,948
Percent	0.0%	0.0%	0.0%	0.1%	0.9%	9.0%	46.9%	35.6%	6.5%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	3	0	0	4	53	343	1,993	3,964	2,158	457	67	8	4	3	0	0	0	9,057
Percent	0.0%	0.0%	0.0%	0.0%	0.6%	3.8%	22.0%	43.8%	23.8%	5.0%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	3	2	3	17	133	1,151	6,188	7,150	2,739	519	79	10	7	3	1	0	0	18,005
Percent	0.0%	0.0%	0.0%	0.1%	0.7%	6.4%	34.4%	39.7%	15.2%	2.9%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	39.5	mph	Mean (Average) Speed	39.5	mph
85th Percentile	43.2	mph	10 mph Pace	34.6 - 44.6	mph
95th Percentile	45.9	mph	Percent in Pace	83.2	%
Westbound			**Westbound**		
50th Percentile (Median)	42.7	mph	Mean (Average) Speed	42.8	mph
85th Percentile	47.2	mph	10 mph Pace	37.8 - 47.8	mph
95th Percentile	50.4	mph	Percent in Pace	74.4	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

idax DATA SOLUTIONS

Wednesday, April 24, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	4	12	11	2	1	0	0	0	0	0	0	0	**31**
1:00 AM	0	0	0	0	0	0	3	3	2	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	1	1	3	4	2	3	0	0	0	0	0	0	0	0	**14**
5:00 AM	0	0	0	0	2	7	28	19	11	6	0	0	0	0	0	0	0	**73**
6:00 AM	0	2	2	2	3	23	60	54	16	3	1	0	0	0	0	0	0	**166**
7:00 AM	0	0	0	1	15	64	252	137	25	2	0	0	0	0	0	0	0	**496**
8:00 AM	0	0	0	1	7	56	310	217	34	1	0	1	0	0	0	0	0	**627**
9:00 AM	0	0	1	0	7	78	221	143	15	4	0	0	1	0	0	0	0	**470**
10:00 AM	0	0	0	0	6	54	244	135	34	1	1	0	0	0	0	0	0	**475**
11:00 AM	0	0	0	0	11	89	294	147	26	1	1	0	0	0	0	0	0	**569**
12:00 PM	0	0	0	2	3	62	363	202	34	1	0	0	0	0	0	0	0	**667**
1:00 PM	0	0	0	0	4	72	344	223	30	3	1	0	0	0	0	0	0	**677**
2:00 PM	0	0	0	1	11	70	306	235	32	8	1	0	0	0	0	0	0	**664**
3:00 PM	0	0	0	0	4	40	279	271	33	7	0	0	0	0	0	0	0	**634**
4:00 PM	0	0	0	2	1	17	279	300	59	6	3	0	0	0	0	0	0	**667**
5:00 PM	0	0	0	1	1	22	294	326	66	8	1	0	1	0	1	0	0	**721**
6:00 PM	0	0	0	1	0	27	240	306	59	2	2	0	0	0	0	0	0	**637**
7:00 PM	0	0	0	0	1	33	247	177	45	2	1	0	1	0	0	0	0	**507**
8:00 PM	0	0	0	0	1	41	203	117	12	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	0	0	0	1	23	106	84	17	2	0	0	0	0	0	0	0	**233**
10:00 PM	0	0	0	0	0	16	77	54	22	1	0	1	0	0	0	0	0	**171**
11:00 PM	0	0	0	0	0	7	26	22	4	0	0	0	0	0	0	0	0	**59**
Total	**0**	**2**	**3**	**13**	**80**	**808**	**4,195**	**3,186**	**581**	**62**	**12**	**2**	**3**	**0**	**1**	**0**	**0**	**8,948**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.9%**	**9.0%**	**46.9%**	**35.6%**	**6.5%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	39.5	mph	Mean (Average) Speed	39.5	mph
85th Percentile	43.2	mph	10 mph Pace	34.6 - 44.6	mph
95th Percentile	45.9	mph	Percent in Pace	83.2	%

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

idax DATA SOLUTIONS

Wednesday, April 24, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	2	2	1	5	0	1	0	0	0	0	0	0	**11**
1:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	0	1	0	4	1	0	1	1	0	0	0	0	0	**8**
4:00 AM	0	0	0	0	0	3	5	8	10	8	1	0	0	0	0	0	0	**35**
5:00 AM	0	0	0	0	0	1	9	57	43	6	4	0	0	0	0	0	0	**120**
6:00 AM	0	0	0	0	3	1	44	135	104	28	2	0	0	0	0	0	0	**317**
7:00 AM	0	0	0	0	0	14	107	338	224	36	7	1	1	0	0	0	0	**728**
8:00 AM	2	0	0	0	0	62	278	398	132	27	1	0	0	0	0	0	0	**900**
9:00 AM	0	0	0	1	13	43	214	302	95	19	1	0	0	0	0	0	0	**688**
10:00 AM	1	0	0	0	6	48	178	278	90	14	1	0	0	1	0	0	0	**617**
11:00 AM	0	0	0	1	15	57	205	236	88	11	2	0	0	0	0	0	0	**615**
12:00 PM	0	0	0	0	1	21	114	293	135	22	1	0	0	0	0	0	0	**587**
1:00 PM	0	0	0	0	0	14	145	296	162	31	5	0	0	0	0	0	0	**653**
2:00 PM	0	0	0	1	2	20	135	274	196	42	9	0	0	0	0	0	0	**679**
3:00 PM	0	0	0	0	7	12	113	269	185	39	2	0	0	0	0	0	0	**627**
4:00 PM	0	0	0	0	1	8	103	274	173	29	6	2	0	0	0	0	0	**596**
5:00 PM	0	0	0	0	3	11	91	254	175	52	5	2	0	1	0	0	0	**594**
6:00 PM	0	0	0	0	1	5	83	224	138	38	6	0	1	0	0	0	0	**496**
7:00 PM	0	0	0	0	0	5	47	160	109	20	7	1	1	0	0	0	0	**350**
8:00 PM	0	0	0	0	0	8	70	94	52	12	4	1	1	1	0	0	0	**243**
9:00 PM	0	0	0	0	1	5	22	35	20	11	0	0	0	0	0	0	0	**94**
10:00 PM	0	0	0	0	0	2	22	18	9	4	1	0	0	0	0	0	0	**56**
11:00 PM	0	0	0	1	0	0	6	13	10	7	0	0	0	0	0	0	0	**37**
Total	**3**	**0**	**0**	**4**	**53**	**343**	**1,993**	**3,964**	**2,158**	**457**	**67**	**8**	**4**	**3**	**0**	**0**	**0**	**9,057**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**	**3.8%**	**22.0%**	**43.8%**	**23.8%**	**5.0%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	42.7	mph	Mean (Average) Speed	42.8	mph
85th Percentile	47.2	mph	10 mph Pace	37.8 - 47.8	mph
95th Percentile	50.4	mph	Percent in Pace	74.43	%

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	1	4	12	11	2	1	0	0	0	0	0	0	0	**31**
1:00 AM	0	0	0	0	0	0	3	3	2	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	1	1	3	4	2	3	0	0	0	0	0	0	0	0	**14**
5:00 AM	0	0	0	0	2	7	28	19	11	6	0	0	0	0	0	0	0	**73**
6:00 AM	0	2	2	2	3	23	60	54	16	3	1	0	0	0	0	0	0	**166**
7:00 AM	0	0	0	1	15	64	252	137	25	2	0	0	0	0	0	0	0	**496**
8:00 AM	0	0	0	1	7	56	310	217	34	1	0	1	0	0	0	0	0	**627**
9:00 AM	0	0	1	0	7	78	221	143	15	4	0	0	1	0	0	0	0	**470**
10:00 AM	0	0	0	0	6	54	244	135	34	1	1	0	0	0	0	0	0	**475**
11:00 AM	0	0	0	0	11	89	294	147	26	1	1	0	0	0	0	0	0	**569**
12:00 PM	0	0	0	2	3	62	363	202	34	1	0	0	0	0	0	0	0	**667**
1:00 PM	0	0	0	0	4	72	344	223	30	3	1	0	0	0	0	0	0	**677**
2:00 PM	0	0	0	1	11	70	306	235	32	8	1	0	0	0	0	0	0	**664**
3:00 PM	0	0	0	0	4	40	279	271	33	7	0	0	0	0	0	0	0	**634**
4:00 PM	0	0	0	2	1	17	279	300	59	6	3	0	0	0	0	0	0	**667**
5:00 PM	0	0	0	1	1	22	294	326	66	8	1	0	1	0	1	0	0	**721**
6:00 PM	0	0	0	1	0	27	240	306	59	2	2	0	0	0	0	0	0	**637**
7:00 PM	0	0	0	0	1	33	247	177	45	2	1	0	1	0	0	0	0	**507**
8:00 PM	0	0	0	0	1	41	203	117	12	2	0	0	0	0	0	0	0	**376**
9:00 PM	0	0	0	0	1	23	106	84	17	2	0	0	0	0	0	0	0	**233**
10:00 PM	0	0	0	0	0	16	77	54	22	1	0	1	0	0	0	0	0	**171**
11:00 PM	0	0	0	0	0	7	26	22	4	0	0	0	0	0	0	0	0	**59**
Total	**0**	**2**	**3**	**13**	**80**	**808**	**4,195**	**3,186**	**581**	**62**	**12**	**2**	**3**	**0**	**1**	**0**	**0**	**8,948**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.9%**	**9.0%**	**46.9%**	**35.6%**	**6.5%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	39.5	mph	Mean (Average) Speed	39.5	mph
85th Percentile	43.2	mph	10 mph Pace	34.6 - 44.6	mph
95th Percentile	45.9	mph	Percent in Pace	83.2	%

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 to 4/24/2019
Site Code: 37

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	2	2	1	5	0	1	0	0	0	0	0	0	**11**
1:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	0	1	0	4	1	0	1	1	0	0	0	0	0	**8**
4:00 AM	0	0	0	0	0	3	5	8	10	8	1	0	0	0	0	0	0	**35**
5:00 AM	0	0	0	0	0	1	9	57	43	6	4	0	0	0	0	0	0	**120**
6:00 AM	0	0	0	0	3	1	44	135	104	28	2	0	0	0	0	0	0	**317**
7:00 AM	0	0	0	0	0	14	107	338	224	36	7	1	1	0	0	0	0	**728**
8:00 AM	2	0	0	0	0	62	278	398	132	27	1	0	0	0	0	0	0	**900**
9:00 AM	0	0	0	1	13	43	214	302	95	19	1	0	0	0	0	0	0	**688**
10:00 AM	1	0	0	0	6	48	178	278	90	14	1	0	0	1	0	0	0	**617**
11:00 AM	0	0	0	1	15	57	205	236	88	11	2	0	0	0	0	0	0	**615**
12:00 PM	0	0	0	0	1	21	114	293	135	22	1	0	0	0	0	0	0	**587**
1:00 PM	0	0	0	0	0	14	145	296	162	31	5	0	0	0	0	0	0	**653**
2:00 PM	0	0	0	1	2	20	135	274	196	42	9	0	0	0	0	0	0	**679**
3:00 PM	0	0	0	0	7	12	113	269	185	39	2	0	0	0	0	0	0	**627**
4:00 PM	0	0	0	0	1	8	103	274	173	29	6	2	0	0	0	0	0	**596**
5:00 PM	0	0	0	0	3	11	91	254	175	52	5	2	0	1	0	0	0	**594**
6:00 PM	0	0	0	0	1	5	83	224	138	38	6	0	1	0	0	0	0	**496**
7:00 PM	0	0	0	0	0	5	47	160	109	20	7	1	1	0	0	0	0	**350**
8:00 PM	0	0	0	0	0	8	70	94	52	12	4	1	1	1	0	0	0	**243**
9:00 PM	0	0	0	0	1	5	22	35	20	11	0	0	0	0	0	0	0	**94**
10:00 PM	0	0	0	0	0	2	22	18	9	4	1	0	0	0	0	0	0	**56**
11:00 PM	0	0	0	1	0	0	6	13	10	7	0	0	0	0	0	0	0	**37**
Total	**3**	**0**	**0**	**4**	**53**	**343**	**1,993**	**3,964**	**2,158**	**457**	**67**	**8**	**4**	**3**	**0**	**0**	**0**	**9,057**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**	**3.8%**	**22.0%**	**43.8%**	**23.8%**	**5.0%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	42.7	mph	Mean (Average) Speed	42.8	mph
85th Percentile	47.2	mph	10 mph Pace	37.8 - 47.8	mph
95th Percentile	50.4	mph	Percent in Pace	74.4	%

Location: Point San Pedro Rd, B/W Mooring & END
Date Range: 4/24/2019 - 4/30/2019
Site Code: 37

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	31	11	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	11	42
1:00 AM	8	2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	10
2:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
3:00 AM	3	8	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	8	11
4:00 AM	14	35	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	35	49
5:00 AM	73	120	193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	120	193
6:00 AM	166	317	483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166	317	483
7:00 AM	496	728	1,224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	496	728	1,224
8:00 AM	**627**	**900**	**1,527**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**627**	**900**	**1,527**
9:00 AM	470	688	1,158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	470	688	1,158
10:00 AM	475	617	1,092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	475	617	1,092
11:00 AM	569	615	1,184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	569	615	1,184
12:00 PM	667	587	1,254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	667	587	1,254
1:00 PM	677	653	1,330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	677	653	1,330
2:00 PM	664	**679**	**1,343**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	664	**679**	**1,343**
3:00 PM	634	627	1,261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	634	627	1,261
4:00 PM	667	596	1,263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	667	596	1,263
5:00 PM	**721**	594	1,315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**721**	594	1,315
6:00 PM	637	496	1,133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	637	496	1,133
7:00 PM	507	350	857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	507	350	857
8:00 PM	376	243	619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	243	619
9:00 PM	233	94	327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	233	94	327
10:00 PM	171	56	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171	56	227
11:00 PM	59	37	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	37	96
Total	8,948	9,057	18,005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,948	9,057	18,005
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	08:00	08:00	08:00
Vol.	627	900	1,527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	627	900	1,527
PM Peak	17:00	14:00	14:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	14:00	14:00
Vol.	721	679	1,343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	721	679	1,343

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Redwood Hwy, B/W Smith Ranch & Freitas

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 38

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	29	3,961	740	2	345	9	0	0	0	0	0	0	0	5,086
Percent	0.6%	77.9%	14.5%	0.0%	6.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	35	4,900	799	1	264	6	0	2	0	0	0	0	0	6,007
Percent	0.6%	81.6%	13.3%	0.0%	4.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	64	8,861	1,539	3	609	15	0	2	0	0	0	0	0	11,093
Percent	0.6%	79.9%	13.9%	0.0%	5.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

DATA SOLUTIONS

Thursday, April 25, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	5	0	1	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	10	3	0	2	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	3	0	2	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	19	1	0	3	0	0	0	0	0	0	0	0	**23**
5:00 AM	2	41	4	0	5	1	0	0	0	0	0	0	0	**53**
6:00 AM	0	111	27	0	18	0	0	0	0	0	0	0	0	**156**
7:00 AM	3	220	49	1	25	1	0	0	0	0	0	0	0	**299**
8:00 AM	1	270	45	0	31	1	0	0	0	0	0	0	0	**348**
9:00 AM	5	304	59	0	32	3	0	0	0	0	0	0	0	**403**
10:00 AM	3	235	55	0	22	1	0	0	0	0	0	0	0	**316**
11:00 AM	1	278	63	1	38	1	0	0	0	0	0	0	0	**382**
12:00 PM	1	291	57	0	25	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	300	62	0	29	1	0	0	0	0	0	0	0	**396**
2:00 PM	1	296	55	0	25	0	0	0	0	0	0	0	0	**377**
3:00 PM	2	242	56	0	30	0	0	0	0	0	0	0	0	**330**
4:00 PM	0	277	45	0	22	0	0	0	0	0	0	0	0	**344**
5:00 PM	3	269	37	0	10	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	237	43	0	10	0	0	0	0	0	0	0	0	**291**
7:00 PM	2	168	26	0	5	0	0	0	0	0	0	0	0	**201**
8:00 PM	0	125	24	0	4	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	105	9	0	1	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	73	6	0	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	53	6	0	3	0	0	0	0	0	0	0	0	**62**
Total	**29**	**3,961**	**740**	**2**	**345**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,086**
Percent	**0.6%**	**77.9%**	**14.5%**	**0.0%**	**6.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Thursday, April 25, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	1	6	0	0	3	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	19	5	1	4	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	44	11	0	6	1	0	0	0	0	0	0	0	**62**
6:00 AM	2	119	32	0	10	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	359	87	0	34	0	0	0	0	0	0	0	0	**480**
8:00 AM	4	419	76	0	39	0	0	0	0	0	0	0	0	**538**
9:00 AM	0	314	55	0	24	1	0	1	0	0	0	0	0	**395**
10:00 AM	2	260	63	0	18	0	0	0	0	0	0	0	0	**343**
11:00 AM	2	331	49	0	18	0	0	0	0	0	0	0	0	**400**
12:00 PM	3	362	55	0	21	1	0	0	0	0	0	0	0	**442**
1:00 PM	2	317	51	0	14	0	0	0	0	0	0	0	0	**384**
2:00 PM	3	338	39	0	20	0	0	0	0	0	0	0	0	**400**
3:00 PM	2	374	55	0	15	2	0	0	0	0	0	0	0	**448**
4:00 PM	6	382	56	0	18	0	0	1	0	0	0	0	0	**463**
5:00 PM	1	485	65	0	7	0	0	0	0	0	0	0	0	**558**
6:00 PM	3	287	45	0	4	1	0	0	0	0	0	0	0	**340**
7:00 PM	3	165	20	0	3	0	0	0	0	0	0	0	0	**191**
8:00 PM	1	129	13	0	3	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	70	11	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	50	2	0	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	41	4	0	0	0	0	0	0	0	0	0	0	**45**
Total	**35**	**4,900**	**799**	**1**	**264**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.6%**	**81.6%**	**13.3%**	**0.0%**	**4.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

DATA SOLUTIONS

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	5	0	1	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	10	3	0	2	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	3	0	2	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	19	1	0	3	0	0	0	0	0	0	0	0	**23**
5:00 AM	2	41	4	0	5	1	0	0	0	0	0	0	0	**53**
6:00 AM	0	111	27	0	18	0	0	0	0	0	0	0	0	**156**
7:00 AM	3	220	49	1	25	1	0	0	0	0	0	0	0	**299**
8:00 AM	1	270	45	0	31	1	0	0	0	0	0	0	0	**348**
9:00 AM	5	304	59	0	32	3	0	0	0	0	0	0	0	**403**
10:00 AM	3	235	55	0	22	1	0	0	0	0	0	0	0	**316**
11:00 AM	1	278	63	1	38	1	0	0	0	0	0	0	0	**382**
12:00 PM	1	291	57	0	25	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	300	62	0	29	1	0	0	0	0	0	0	0	**396**
2:00 PM	1	296	55	0	25	0	0	0	0	0	0	0	0	**377**
3:00 PM	2	242	56	0	30	0	0	0	0	0	0	0	0	**330**
4:00 PM	0	277	45	0	22	0	0	0	0	0	0	0	0	**344**
5:00 PM	3	269	37	0	10	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	237	43	0	10	0	0	0	0	0	0	0	0	**291**
7:00 PM	2	168	26	0	5	0	0	0	0	0	0	0	0	**201**
8:00 PM	0	125	24	0	4	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	105	9	0	1	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	73	6	0	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	53	6	0	3	0	0	0	0	0	0	0	0	**62**
Total	**29**	**3,961**	**740**	**2**	**345**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,086**
Percent	**0.6%**	**77.9%**	**14.5%**	**0.0%**	**6.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

DATA SOLUTIONS

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	1	6	0	0	3	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	19	5	1	4	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	44	11	0	6	1	0	0	0	0	0	0	0	**62**
6:00 AM	2	119	32	0	10	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	359	87	0	34	0	0	0	0	0	0	0	0	**480**
8:00 AM	4	419	76	0	39	0	0	0	0	0	0	0	0	**538**
9:00 AM	0	314	55	0	24	1	0	1	0	0	0	0	0	**395**
10:00 AM	2	260	63	0	18	0	0	0	0	0	0	0	0	**343**
11:00 AM	2	331	49	0	18	0	0	0	0	0	0	0	0	**400**
12:00 PM	3	362	55	0	21	1	0	0	0	0	0	0	0	**442**
1:00 PM	2	317	51	0	14	0	0	0	0	0	0	0	0	**384**
2:00 PM	3	338	39	0	20	0	0	0	0	0	0	0	0	**400**
3:00 PM	2	374	55	0	15	2	0	0	0	0	0	0	0	**448**
4:00 PM	6	382	56	0	18	0	0	1	0	0	0	0	0	**463**
5:00 PM	1	485	65	0	7	0	0	0	0	0	0	0	0	**558**
6:00 PM	3	287	45	0	4	1	0	0	0	0	0	0	0	**340**
7:00 PM	3	165	20	0	3	0	0	0	0	0	0	0	0	**191**
8:00 PM	1	129	13	0	3	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	70	11	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	50	2	0	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	41	4	0	0	0	0	0	0	0	0	0	0	**45**
Total	**35**	**4,900**	**799**	**1**	**264**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.6%**	**81.6%**	**13.3%**	**0.0%**	**4.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	22	5	0	1	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	10	3	0	2	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	9	3	0	2	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	19	1	0	3	0	0	0	0	0	0	0	0	**23**
5:00 AM	2	41	4	0	5	1	0	0	0	0	0	0	0	**53**
6:00 AM	0	111	27	0	18	0	0	0	0	0	0	0	0	**156**
7:00 AM	3	220	49	1	25	1	0	0	0	0	0	0	0	**299**
8:00 AM	1	270	45	0	31	1	0	0	0	0	0	0	0	**348**
9:00 AM	5	304	59	0	32	3	0	0	0	0	0	0	0	**403**
10:00 AM	3	235	55	0	22	1	0	0	0	0	0	0	0	**316**
11:00 AM	1	278	63	1	38	1	0	0	0	0	0	0	0	**382**
12:00 PM	1	291	57	0	25	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	300	62	0	29	1	0	0	0	0	0	0	0	**396**
2:00 PM	1	296	55	0	25	0	0	0	0	0	0	0	0	**377**
3:00 PM	2	242	56	0	30	0	0	0	0	0	0	0	0	**330**
4:00 PM	0	277	45	0	22	0	0	0	0	0	0	0	0	**344**
5:00 PM	3	269	37	0	10	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	237	43	0	10	0	0	0	0	0	0	0	0	**291**
7:00 PM	2	168	26	0	5	0	0	0	0	0	0	0	0	**201**
8:00 PM	0	125	24	0	4	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	105	9	0	1	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	73	6	0	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	53	6	0	3	0	0	0	0	0	0	0	0	**62**
Total	**29**	**3,961**	**740**	**2**	**345**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,086**
Percent	**0.6%**	**77.9%**	**14.5%**	**0.0%**	**6.8%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	5	0	0	2	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	1	6	0	0	3	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	19	5	1	4	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	44	11	0	6	1	0	0	0	0	0	0	0	**62**
6:00 AM	2	119	32	0	10	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	359	87	0	34	0	0	0	0	0	0	0	0	**480**
8:00 AM	4	419	76	0	39	0	0	0	0	0	0	0	0	**538**
9:00 AM	0	314	55	0	24	1	0	1	0	0	0	0	0	**395**
10:00 AM	2	260	63	0	18	0	0	0	0	0	0	0	0	**343**
11:00 AM	2	331	49	0	18	0	0	0	0	0	0	0	0	**400**
12:00 PM	3	362	55	0	21	1	0	0	0	0	0	0	0	**442**
1:00 PM	2	317	51	0	14	0	0	0	0	0	0	0	0	**384**
2:00 PM	3	338	39	0	20	0	0	0	0	0	0	0	0	**400**
3:00 PM	2	374	55	0	15	2	0	0	0	0	0	0	0	**448**
4:00 PM	6	382	56	0	18	0	0	1	0	0	0	0	0	**463**
5:00 PM	1	485	65	0	7	0	0	0	0	0	0	0	0	**558**
6:00 PM	3	287	45	0	4	1	0	0	0	0	0	0	0	**340**
7:00 PM	3	165	20	0	3	0	0	0	0	0	0	0	0	**191**
8:00 PM	1	129	13	0	3	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	70	11	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	50	2	0	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	41	4	0	0	0	0	0	0	0	0	0	0	**45**
Total	**35**	**4,900**	**799**	**1**	**264**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.6%**	**81.6%**	**13.3%**	**0.0%**	**4.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Redwood Hwy, B/W Smith Ranch & Freitas

Count Direction: Northbound / Southbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 38

	Speed Range (mph)																Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	52	231	614	1,313	1,713	945	197	15	5	0	0	0	0	0	0	1	0	5,086
Percent	1.0%	4.5%	12.1%	25.8%	33.7%	18.6%	3.9%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	9	44	146	1,174	2,827	1,317	412	72	6	0	0	0	0	0	0	0	0	6,007
Percent	0.1%	0.7%	2.4%	19.5%	47.1%	21.9%	6.9%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	61	275	760	2,487	4,540	2,262	609	87	11	0	0	0	0	0	0	1	0	11,093
Percent	0.5%	2.5%	6.9%	22.4%	40.9%	20.4%	5.5%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	25.9	mph	Mean (Average) Speed	25.5	mph
85th Percentile	31.4	mph	10 mph Pace	22.3 - 32.3	mph
95th Percentile	34.5	mph	Percent in Pace	60.8	%
Southbound			**Southbound**		
50th Percentile (Median)	27.7	mph	Mean (Average) Speed	28.1	mph
85th Percentile	33.0	mph	10 mph Pace	23.2 - 33.2	mph
95th Percentile	36.5	mph	Percent in Pace	75.3	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Thursday, April 25, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	17	5	2	1	0	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	0	0	2	5	5	2	1	0	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	0	0	0	2	2	3	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	1	2	4	2	4	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	0	0	2	10	9	2	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	0	0	0	4	22	20	6	1	0	0	0	0	0	0	0	0	0	**53**
6:00 AM	0	1	9	31	50	43	20	2	0	0	0	0	0	0	0	0	0	**156**
7:00 AM	1	17	53	83	94	42	8	1	0	0	0	0	0	0	0	0	0	**299**
8:00 AM	9	20	45	101	105	59	8	1	0	0	0	0	0	0	0	0	0	**348**
9:00 AM	5	24	52	94	127	80	19	1	0	0	0	0	0	0	0	1	0	**403**
10:00 AM	6	14	54	66	97	62	16	1	0	0	0	0	0	0	0	0	0	**316**
11:00 AM	6	26	57	99	119	66	8	1	0	0	0	0	0	0	0	0	0	**382**
12:00 PM	4	19	49	106	99	75	22	0	0	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	28	52	118	118	63	12	1	0	0	0	0	0	0	0	0	0	**396**
2:00 PM	5	16	54	105	104	79	12	2	0	0	0	0	0	0	0	0	0	**377**
3:00 PM	1	26	39	103	106	50	5	0	0	0	0	0	0	0	0	0	0	**330**
4:00 PM	3	13	47	104	119	47	11	0	0	0	0	0	0	0	0	0	0	**344**
5:00 PM	6	14	50	79	110	53	7	0	0	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	8	29	76	108	58	11	0	0	0	0	0	0	0	0	0	0	**291**
7:00 PM	0	1	9	53	99	31	6	0	2	0	0	0	0	0	0	0	0	**201**
8:00 PM	1	2	8	41	70	25	6	0	0	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	0	1	22	57	30	4	1	0	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	2	3	11	39	22	1	1	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	0	2	8	32	17	2	0	1	0	0	0	0	0	0	0	0	**62**
Total	**52**	**231**	**614**	**1,313**	**1,713**	**945**	**197**	**15**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**5,086**
Percent	**1.0%**	**4.5%**	**12.1%**	**25.8%**	**33.7%**	**18.6%**	**3.9%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	25.9	mph	Mean (Average) Speed	25.5	mph
85th Percentile	31.4	mph	10 mph Pace	22.3 - 32.3	mph
95th Percentile	34.5	mph	Percent in Pace	60.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Thursday, April 25, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	3	6	4	1	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	2	4	2	2	1	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	0	0	0	2	3	3	1	1	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	3	7	10	5	4	0	0	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	0	0	11	28	11	9	2	1	0	0	0	0	0	0	0	0	**62**
6:00 AM	0	0	6	38	74	26	14	5	0	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	0	3	102	261	84	26	4	0	0	0	0	0	0	0	0	0	**480**
8:00 AM	0	1	4	92	285	127	25	2	2	0	0	0	0	0	0	0	0	**538**
9:00 AM	1	3	9	74	169	107	27	5	0	0	0	0	0	0	0	0	0	**395**
10:00 AM	1	1	9	76	154	72	27	3	0	0	0	0	0	0	0	0	0	**343**
11:00 AM	0	4	7	96	183	74	33	2	1	0	0	0	0	0	0	0	0	**400**
12:00 PM	1	3	7	66	235	109	20	1	0	0	0	0	0	0	0	0	0	**442**
1:00 PM	1	3	3	78	174	88	33	4	0	0	0	0	0	0	0	0	0	**384**
2:00 PM	2	6	21	56	183	100	29	2	1	0	0	0	0	0	0	0	0	**400**
3:00 PM	0	6	17	75	189	124	30	7	0	0	0	0	0	0	0	0	0	**448**
4:00 PM	2	5	24	87	230	79	28	7	1	0	0	0	0	0	0	0	0	**463**
5:00 PM	0	5	12	108	278	122	30	3	0	0	0	0	0	0	0	0	0	**558**
6:00 PM	1	6	13	67	146	67	34	6	0	0	0	0	0	0	0	0	0	**340**
7:00 PM	0	1	3	50	78	38	15	6	0	0	0	0	0	0	0	0	0	**191**
8:00 PM	0	0	2	38	59	29	16	2	0	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	0	2	28	30	15	4	3	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	0	12	23	13	1	3	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	0	1	5	23	14	0	2	0	0	0	0	0	0	0	0	0	**45**
Total	**9**	**44**	**146**	**1,174**	**2,827**	**1,317**	**412**	**72**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.1%**	**0.7%**	**2.4%**	**19.5%**	**47.1%**	**21.9%**	**6.9%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.7	mph	Mean (Average) Speed	28.1	mph
85th Percentile	33.0	mph	10 mph Pace	23.2 - 33.2	mph
95th Percentile	36.5	mph	Percent in Pace	75.28	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	17	5	2	1	0	0	0	0	0	0	0	0	0	**28**
1:00 AM	0	0	0	2	5	5	2	1	0	0	0	0	0	0	0	0	0	**15**
2:00 AM	0	0	0	0	2	2	3	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	1	2	4	2	4	0	1	0	0	0	0	0	0	0	0	**14**
4:00 AM	0	0	0	2	10	9	2	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	0	0	0	4	22	20	6	1	0	0	0	0	0	0	0	0	0	**53**
6:00 AM	0	1	9	31	50	43	20	2	0	0	0	0	0	0	0	0	0	**156**
7:00 AM	1	17	53	83	94	42	8	1	0	0	0	0	0	0	0	0	0	**299**
8:00 AM	9	20	45	101	105	59	8	1	0	0	0	0	0	0	0	0	0	**348**
9:00 AM	5	24	52	94	127	80	19	1	0	0	0	0	0	0	0	1	0	**403**
10:00 AM	6	14	54	66	97	62	16	1	0	0	0	0	0	0	0	0	0	**316**
11:00 AM	6	26	57	99	119	66	8	1	0	0	0	0	0	0	0	0	0	**382**
12:00 PM	4	19	49	106	99	75	22	0	0	0	0	0	0	0	0	0	0	**374**
1:00 PM	4	28	52	118	118	63	12	1	0	0	0	0	0	0	0	0	0	**396**
2:00 PM	5	16	54	105	104	79	12	2	0	0	0	0	0	0	0	0	0	**377**
3:00 PM	1	26	39	103	106	50	5	0	0	0	0	0	0	0	0	0	0	**330**
4:00 PM	3	13	47	104	119	47	11	0	0	0	0	0	0	0	0	0	0	**344**
5:00 PM	6	14	50	79	110	53	7	0	0	0	0	0	0	0	0	0	0	**319**
6:00 PM	1	8	29	76	108	58	11	0	0	0	0	0	0	0	0	0	0	**291**
7:00 PM	0	1	9	53	99	31	6	0	2	0	0	0	0	0	0	0	0	**201**
8:00 PM	1	2	8	41	70	25	6	0	0	0	0	0	0	0	0	0	0	**153**
9:00 PM	0	0	1	22	57	30	4	1	0	0	0	0	0	0	0	0	0	**115**
10:00 PM	0	2	3	11	39	22	1	1	1	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	0	2	8	32	17	2	0	1	0	0	0	0	0	0	0	0	**62**
Total	**52**	**231**	**614**	**1,313**	**1,713**	**945**	**197**	**15**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**5,086**
Percent	**1.0%**	**4.5%**	**12.1%**	**25.8%**	**33.7%**	**18.6%**	**3.9%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	25.9	mph	Mean (Average) Speed	25.5	mph
85th Percentile	31.4	mph	10 mph Pace	22.3 - 32.3	mph
95th Percentile	34.5	mph	Percent in Pace	60.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 to 4/25/2019
Site Code: 38

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	3	6	4	1	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	2	4	2	2	1	0	0	0	0	0	0	0	0	0	**11**
3:00 AM	0	0	0	2	3	3	1	1	0	0	0	0	0	0	0	0	0	**10**
4:00 AM	0	0	3	7	10	5	4	0	0	0	0	0	0	0	0	0	0	**29**
5:00 AM	0	0	0	11	28	11	9	2	1	0	0	0	0	0	0	0	0	**62**
6:00 AM	0	0	6	38	74	26	14	5	0	0	0	0	0	0	0	0	0	**163**
7:00 AM	0	0	3	102	261	84	26	4	0	0	0	0	0	0	0	0	0	**480**
8:00 AM	0	1	4	92	285	127	25	2	2	0	0	0	0	0	0	0	0	**538**
9:00 AM	1	3	9	74	169	107	27	5	0	0	0	0	0	0	0	0	0	**395**
10:00 AM	1	1	9	76	154	72	27	3	0	0	0	0	0	0	0	0	0	**343**
11:00 AM	0	4	7	96	183	74	33	2	1	0	0	0	0	0	0	0	0	**400**
12:00 PM	1	3	7	66	235	109	20	1	0	0	0	0	0	0	0	0	0	**442**
1:00 PM	1	3	3	78	174	88	33	4	0	0	0	0	0	0	0	0	0	**384**
2:00 PM	2	6	21	56	183	100	29	2	1	0	0	0	0	0	0	0	0	**400**
3:00 PM	0	6	17	75	189	124	30	7	0	0	0	0	0	0	0	0	0	**448**
4:00 PM	2	5	24	87	230	79	28	7	1	0	0	0	0	0	0	0	0	**463**
5:00 PM	0	5	12	108	278	122	30	3	0	0	0	0	0	0	0	0	0	**558**
6:00 PM	1	6	13	67	146	67	34	6	0	0	0	0	0	0	0	0	0	**340**
7:00 PM	0	1	3	50	78	38	15	6	0	0	0	0	0	0	0	0	0	**191**
8:00 PM	0	0	2	38	59	29	16	2	0	0	0	0	0	0	0	0	0	**146**
9:00 PM	0	0	2	28	30	15	4	3	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	0	12	23	13	1	3	0	0	0	0	0	0	0	0	0	**52**
11:00 PM	0	0	1	5	23	14	0	2	0	0	0	0	0	0	0	0	0	**45**
Total	**9**	**44**	**146**	**1,174**	**2,827**	**1,317**	**412**	**72**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,007**
Percent	**0.1%**	**0.7%**	**2.4%**	**19.5%**	**47.1%**	**21.9%**	**6.9%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.7	mph	Mean (Average) Speed	28.1	mph
85th Percentile	33.0	mph	10 mph Pace	23.2 - 33.2	mph
95th Percentile	36.5	mph	Percent in Pace	75.3	%

Project Manager: (415) 310-6469
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Location: Redwood Hwy, B/W Smith Ranch & Freitas
Date Range: 4/25/2019 - 5/1/2019
Site Code: 38

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	28	18	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	18	46
1:00 AM	15	7	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	7	22
2:00 AM	7	11	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	11	18
3:00 AM	14	10	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	10	24
4:00 AM	23	29	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	29	52
5:00 AM	53	62	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	62	115
6:00 AM	156	163	319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	163	319
7:00 AM	299	480	779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	299	480	779
8:00 AM	348	**538**	**886**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	348	**538**	**886**
9:00 AM	**403**	395	798	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**403**	395	798
10:00 AM	316	343	659	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	316	343	659
11:00 AM	382	400	782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	382	400	782
12:00 PM	374	442	816	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	374	442	816
1:00 PM	**396**	384	780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**396**	384	780
2:00 PM	377	400	777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	377	400	777
3:00 PM	330	448	778	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	448	778
4:00 PM	344	463	807	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	344	463	807
5:00 PM	319	**558**	**877**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	319	**558**	**877**
6:00 PM	291	340	631	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	291	340	631
7:00 PM	201	191	392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	201	191	392
8:00 PM	153	146	299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	146	299
9:00 PM	115	82	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	82	197
10:00 PM	80	52	132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	52	132
11:00 PM	62	45	107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	45	107
Total	5,086	6,007	11,093	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,086	6,007	11,093
Percent	46%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	-
AM Peak	09:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	09:00	08:00	08:00
Vol.	403	538	886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	403	538	886
PM Peak	13:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13:00	17:00	17:00
Vol.	396	558	877	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	396	558	877

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 39

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	17	3,783	824	2	275	17	0	2	6	2	0	0	0	4,928
Percent	0.3%	76.8%	16.7%	0.0%	5.6%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	26	4,308	559	1	124	12	0	1	5	0	0	0	0	5,036
Percent	0.5%	85.5%	11.1%	0.0%	2.5%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	43	8,091	1,383	3	399	29	0	3	11	2	0	0	0	9,964
Percent	0.4%	81.2%	13.9%	0.0%	4.0%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
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Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Thursday, April 25, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	25	2	0	1	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	26	10	0	8	0	0	0	0	0	0	0	0	**44**
6:00 AM	2	78	24	0	14	2	0	0	1	0	0	0	0	**121**
7:00 AM	0	99	33	0	21	0	0	1	0	0	0	0	0	**154**
8:00 AM	0	191	40	0	14	1	0	0	1	0	0	0	0	**247**
9:00 AM	1	203	46	0	13	1	0	0	0	0	0	0	0	**264**
10:00 AM	0	200	42	0	15	1	0	0	0	0	0	0	0	**258**
11:00 AM	1	218	35	0	16	0	0	1	1	1	0	0	0	**273**
12:00 PM	0	267	64	0	18	5	0	0	1	0	0	0	0	**355**
1:00 PM	1	222	54	1	15	0	0	0	2	0	0	0	0	**295**
2:00 PM	2	234	67	0	23	0	0	0	0	1	0	0	0	**327**
3:00 PM	2	258	59	0	17	2	0	0	0	0	0	0	0	**338**
4:00 PM	3	323	74	0	12	1	0	0	0	0	0	0	0	**413**
5:00 PM	1	395	86	1	32	2	0	0	0	0	0	0	0	**517**
6:00 PM	1	309	66	0	19	1	0	0	0	0	0	0	0	**396**
7:00 PM	1	212	42	0	11	0	0	0	0	0	0	0	0	**266**
8:00 PM	0	175	38	0	9	0	0	0	0	0	0	0	0	**222**
9:00 PM	1	162	20	0	5	1	0	0	0	0	0	0	0	**189**
10:00 PM	0	98	12	0	11	0	0	0	0	0	0	0	0	**121**
11:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
Total	**17**	**3,783**	**824**	**2**	**275**	**17**	**0**	**2**	**6**	**2**	**0**	**0**	**0**	**4,928**
Percent	**0.3%**	**76.8%**	**16.7%**	**0.0%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Thursday, April 25, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	15	0	0	1	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	22	1	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	1	63	14	0	3	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	157	40	0	1	0	0	0	1	0	0	0	0	**199**
7:00 AM	2	321	76	1	24	2	0	0	0	0	0	0	0	**426**
8:00 AM	1	299	33	0	10	1	0	1	0	0	0	0	0	**345**
9:00 AM	2	270	27	0	15	4	0	0	1	0	0	0	0	**319**
10:00 AM	2	239	34	0	5	2	0	0	0	0	0	0	0	**282**
11:00 AM	1	214	26	0	6	0	0	0	1	0	0	0	0	**248**
12:00 PM	1	281	43	0	8	0	0	0	1	0	0	0	0	**334**
1:00 PM	2	300	35	0	7	0	0	0	1	0	0	0	0	**345**
2:00 PM	2	304	36	0	9	1	0	0	0	0	0	0	0	**352**
3:00 PM	3	308	37	0	12	1	0	0	0	0	0	0	0	**361**
4:00 PM	5	293	34	0	6	1	0	0	0	0	0	0	0	**339**
5:00 PM	2	308	36	0	5	0	0	0	0	0	0	0	0	**351**
6:00 PM	1	267	29	0	3	0	0	0	0	0	0	0	0	**300**
7:00 PM	0	286	26	0	3	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	145	13	0	2	0	0	0	0	0	0	0	0	**160**
9:00 PM	1	84	7	0	2	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	61	5	0	2	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	45	3	0	0	0	0	0	0	0	0	0	0	**48**
Total	**26**	**4,308**	**559**	**1**	**124**	**12**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.5%**	**85.5%**	**11.1%**	**0.0%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	25	2	0	1	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	26	10	0	8	0	0	0	0	0	0	0	0	**44**
6:00 AM	2	78	24	0	14	2	0	0	1	0	0	0	0	**121**
7:00 AM	0	99	33	0	21	0	0	1	0	0	0	0	0	**154**
8:00 AM	0	191	40	0	14	1	0	0	1	0	0	0	0	**247**
9:00 AM	1	203	46	0	13	1	0	0	0	0	0	0	0	**264**
10:00 AM	0	200	42	0	15	1	0	0	0	0	0	0	0	**258**
11:00 AM	1	218	35	0	16	0	0	1	1	1	0	0	0	**273**
12:00 PM	0	267	64	0	18	5	0	0	1	0	0	0	0	**355**
1:00 PM	1	222	54	1	15	0	0	0	2	0	0	0	0	**295**
2:00 PM	2	234	67	0	23	0	0	0	0	1	0	0	0	**327**
3:00 PM	2	258	59	0	17	2	0	0	0	0	0	0	0	**338**
4:00 PM	3	323	74	0	12	1	0	0	0	0	0	0	0	**413**
5:00 PM	1	395	86	1	32	2	0	0	0	0	0	0	0	**517**
6:00 PM	1	309	66	0	19	1	0	0	0	0	0	0	0	**396**
7:00 PM	1	212	42	0	11	0	0	0	0	0	0	0	0	**266**
8:00 PM	0	175	38	0	9	0	0	0	0	0	0	0	0	**222**
9:00 PM	1	162	20	0	5	1	0	0	0	0	0	0	0	**189**
10:00 PM	0	98	12	0	11	0	0	0	0	0	0	0	0	**121**
11:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
Total	**17**	**3,783**	**824**	**2**	**275**	**17**	**0**	**2**	**6**	**2**	**0**	**0**	**0**	**4,928**
Percent	**0.3%**	**76.8%**	**16.7%**	**0.0%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	15	0	0	1	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	22	1	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	1	63	14	0	3	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	157	40	0	1	0	0	0	1	0	0	0	0	**199**
7:00 AM	2	321	76	1	24	2	0	0	0	0	0	0	0	**426**
8:00 AM	1	299	33	0	10	1	0	1	0	0	0	0	0	**345**
9:00 AM	2	270	27	0	15	4	0	0	1	0	0	0	0	**319**
10:00 AM	2	239	34	0	5	2	0	0	0	0	0	0	0	**282**
11:00 AM	1	214	26	0	6	0	0	0	1	0	0	0	0	**248**
12:00 PM	1	281	43	0	8	0	0	0	1	0	0	0	0	**334**
1:00 PM	2	300	35	0	7	0	0	0	1	0	0	0	0	**345**
2:00 PM	2	304	36	0	9	1	0	0	0	0	0	0	0	**352**
3:00 PM	3	308	37	0	12	1	0	0	0	0	0	0	0	**361**
4:00 PM	5	293	34	0	6	1	0	0	0	0	0	0	0	**339**
5:00 PM	2	308	36	0	5	0	0	0	0	0	0	0	0	**351**
6:00 PM	1	267	29	0	3	0	0	0	0	0	0	0	0	**300**
7:00 PM	0	286	26	0	3	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	145	13	0	2	0	0	0	0	0	0	0	0	**160**
9:00 PM	1	84	7	0	2	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	61	5	0	2	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	45	3	0	0	0	0	0	0	0	0	0	0	**48**
Total	**26**	**4,308**	**559**	**1**	**124**	**12**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.5%**	**85.5%**	**11.1%**	**0.0%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	25	2	0	1	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	26	10	0	8	0	0	0	0	0	0	0	0	**44**
6:00 AM	2	78	24	0	14	2	0	0	1	0	0	0	0	**121**
7:00 AM	0	99	33	0	21	0	0	1	0	0	0	0	0	**154**
8:00 AM	0	191	40	0	14	1	0	0	1	0	0	0	0	**247**
9:00 AM	1	203	46	0	13	1	0	0	0	0	0	0	0	**264**
10:00 AM	0	200	42	0	15	1	0	0	0	0	0	0	0	**258**
11:00 AM	1	218	35	0	16	0	0	1	1	1	0	0	0	**273**
12:00 PM	0	267	64	0	18	5	0	0	1	0	0	0	0	**355**
1:00 PM	1	222	54	1	15	0	0	0	2	0	0	0	0	**295**
2:00 PM	2	234	67	0	23	0	0	0	0	1	0	0	0	**327**
3:00 PM	2	258	59	0	17	2	0	0	0	0	0	0	0	**338**
4:00 PM	3	323	74	0	12	1	0	0	0	0	0	0	0	**413**
5:00 PM	1	395	86	1	32	2	0	0	0	0	0	0	0	**517**
6:00 PM	1	309	66	0	19	1	0	0	0	0	0	0	0	**396**
7:00 PM	1	212	42	0	11	0	0	0	0	0	0	0	0	**266**
8:00 PM	0	175	38	0	9	0	0	0	0	0	0	0	0	**222**
9:00 PM	1	162	20	0	5	1	0	0	0	0	0	0	0	**189**
10:00 PM	0	98	12	0	11	0	0	0	0	0	0	0	0	**121**
11:00 PM	0	59	5	0	1	0	0	0	0	0	0	0	0	**65**
Total	**17**	**3,783**	**824**	**2**	**275**	**17**	**0**	**2**	**6**	**2**	**0**	**0**	**0**	**4,928**
Percent	**0.3%**	**76.8%**	**16.7%**	**0.0%**	**5.6%**	**0.3%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	15	0	0	1	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	22	1	0	0	0	0	0	0	0	0	0	0	**23**
5:00 AM	1	63	14	0	3	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	157	40	0	1	0	0	0	1	0	0	0	0	**199**
7:00 AM	2	321	76	1	24	2	0	0	0	0	0	0	0	**426**
8:00 AM	1	299	33	0	10	1	0	1	0	0	0	0	0	**345**
9:00 AM	2	270	27	0	15	4	0	0	1	0	0	0	0	**319**
10:00 AM	2	239	34	0	5	2	0	0	0	0	0	0	0	**282**
11:00 AM	1	214	26	0	6	0	0	0	1	0	0	0	0	**248**
12:00 PM	1	281	43	0	8	0	0	0	1	0	0	0	0	**334**
1:00 PM	2	300	35	0	7	0	0	0	1	0	0	0	0	**345**
2:00 PM	2	304	36	0	9	1	0	0	0	0	0	0	0	**352**
3:00 PM	3	308	37	0	12	1	0	0	0	0	0	0	0	**361**
4:00 PM	5	293	34	0	6	1	0	0	0	0	0	0	0	**339**
5:00 PM	2	308	36	0	5	0	0	0	0	0	0	0	0	**351**
6:00 PM	1	267	29	0	3	0	0	0	0	0	0	0	0	**300**
7:00 PM	0	286	26	0	3	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	145	13	0	2	0	0	0	0	0	0	0	0	**160**
9:00 PM	1	84	7	0	2	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	61	5	0	2	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	45	3	0	0	0	0	0	0	0	0	0	0	**48**
Total	**26**	**4,308**	**559**	**1**	**124**	**12**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.5%**	**85.5%**	**11.1%**	**0.0%**	**2.5%**	**0.2%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera

Count Direction: Eastbound / Westbound

Date Range: 4/25/2019 to 4/25/2019

Site Code: 39

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	5	47	36	31	253	1,387	1,991	957	182	31	8	0	0	0	0	0	0	4,928
Percent	0.1%	1.0%	0.7%	0.6%	5.1%	28.1%	40.4%	19.4%	3.7%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	39	42	31	186	1,176	2,174	1,152	210	21	5	0	0	0	0	0	0	0	5,036
Percent	0.8%	0.8%	0.6%	3.7%	23.4%	43.2%	22.9%	4.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	44	89	67	217	1,429	3,561	3,143	1,167	203	36	8	0	0	0	0	0	0	9,964
Percent	0.4%	0.9%	0.7%	2.2%	14.3%	35.7%	31.5%	11.7%	2.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	36.7	mph	Mean (Average) Speed	36.6	mph
85th Percentile	41.7	mph	10 mph Pace	31.9 - 41.9	mph
95th Percentile	44.7	mph	Percent in Pace	71.6	%
Westbound			**Westbound**		
50th Percentile (Median)	32.3	mph	Mean (Average) Speed	32.2	mph
85th Percentile	37.0	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	39.9	mph	Percent in Pace	74.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

idax DATA SOLUTIONS

Thursday, April 25, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	7	12	3	3	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	1	0	0	3	4	7	3	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	0	0	0	0	2	6	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	0	1	3	4	11	16	6	2	1	0	0	0	0	0	0	**44**
6:00 AM	0	1	0	0	1	13	46	43	15	0	2	0	0	0	0	0	0	**121**
7:00 AM	0	2	1	1	6	36	64	34	9	1	0	0	0	0	0	0	0	**154**
8:00 AM	3	2	2	0	20	80	95	36	8	0	1	0	0	0	0	0	0	**247**
9:00 AM	0	4	4	1	13	73	110	51	6	2	0	0	0	0	0	0	0	**264**
10:00 AM	0	2	5	3	23	66	101	47	10	1	0	0	0	0	0	0	0	**258**
11:00 AM	0	2	1	0	11	77	121	54	6	1	0	0	0	0	0	0	0	**273**
12:00 PM	0	4	2	2	28	106	135	60	14	3	1	0	0	0	0	0	0	**355**
1:00 PM	0	4	7	3	18	93	116	44	6	3	1	0	0	0	0	0	0	**295**
2:00 PM	0	5	1	0	20	99	127	59	12	3	1	0	0	0	0	0	0	**327**
3:00 PM	0	4	2	4	13	95	147	64	8	1	0	0	0	0	0	0	0	**338**
4:00 PM	0	3	4	6	24	115	162	81	18	0	0	0	0	0	0	0	0	**413**
5:00 PM	2	4	3	1	22	156	228	84	14	3	0	0	0	0	0	0	0	**517**
6:00 PM	0	2	1	1	14	100	149	109	17	3	0	0	0	0	0	0	0	**396**
7:00 PM	0	2	2	2	7	72	106	59	14	2	0	0	0	0	0	0	0	**266**
8:00 PM	0	5	1	6	12	72	84	37	2	3	0	0	0	0	0	0	0	**222**
9:00 PM	0	0	0	0	7	58	83	33	6	1	1	0	0	0	0	0	0	**189**
10:00 PM	0	0	0	0	0	44	48	25	3	1	0	0	0	0	0	0	0	**121**
11:00 PM	0	0	0	0	4	12	29	15	4	1	0	0	0	0	0	0	0	**65**
Total	**5**	**47**	**36**	**31**	**253**	**1,387**	**1,991**	**957**	**182**	**31**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**4,928**
Percent	**0.1%**	**1.0%**	**0.7%**	**0.6%**	**5.1%**	**28.1%**	**40.4%**	**19.4%**	**3.7%**	**0.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	36.7	mph	Mean (Average) Speed	36.6	mph
85th Percentile	41.7	mph	10 mph Pace	31.9 - 41.9	mph
95th Percentile	44.7	mph	Percent in Pace	71.6	%

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Thursday, April 25, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	9	2	1	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	1	0	1	4	5	4	1	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	1	1	3	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	0	4	6	7	4	2	0	0	0	0	0	0	0	0	**23**
5:00 AM	0	0	0	2	15	30	23	10	1	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	0	0	5	20	82	74	17	1	0	0	0	0	0	0	0	0	**199**
7:00 AM	0	1	1	7	66	182	146	22	1	0	0	0	0	0	0	0	0	**426**
8:00 AM	3	1	5	9	46	146	109	25	0	1	0	0	0	0	0	0	0	**345**
9:00 AM	7	6	1	14	106	121	52	11	1	0	0	0	0	0	0	0	0	**319**
10:00 AM	4	4	3	8	69	122	60	10	1	1	0	0	0	0	0	0	0	**282**
11:00 AM	1	2	2	11	63	109	56	4	0	0	0	0	0	0	0	0	0	**248**
12:00 PM	1	2	2	18	80	140	76	13	2	0	0	0	0	0	0	0	0	**334**
1:00 PM	2	5	3	12	100	153	55	14	1	0	0	0	0	0	0	0	0	**345**
2:00 PM	5	2	2	14	101	140	74	13	1	0	0	0	0	0	0	0	0	**352**
3:00 PM	5	5	2	10	82	159	79	16	2	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	5	2	17	75	142	79	13	4	0	0	0	0	0	0	0	0	**339**
5:00 PM	4	3	1	10	80	170	72	10	1	0	0	0	0	0	0	0	0	**351**
6:00 PM	3	2	1	7	62	137	77	11	0	0	0	0	0	0	0	0	0	**300**
7:00 PM	2	0	4	17	92	149	46	5	0	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	2	1	9	53	75	16	2	0	2	0	0	0	0	0	0	0	**160**
9:00 PM	0	0	0	6	25	41	18	3	1	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	0	0	4	13	32	16	3	0	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	1	1	3	13	18	8	2	2	0	0	0	0	0	0	0	0	**48**
Total	**39**	**42**	**31**	**186**	**1,176**	**2,174**	**1,152**	**210**	**21**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.8%**	**0.8%**	**0.6%**	**3.7%**	**23.4%**	**43.2%**	**22.9%**	**4.2%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	32.3	mph	Mean (Average) Speed	32.2	mph
85th Percentile	37.0	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	39.9	mph	Percent in Pace	73.95	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	7	12	3	3	0	0	0	0	0	0	0	0	**29**
1:00 AM	0	1	0	0	3	4	7	3	0	0	0	0	0	0	0	0	0	**18**
2:00 AM	0	0	0	0	0	2	6	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	0	1	3	4	11	16	6	2	1	0	0	0	0	0	0	**44**
6:00 AM	0	1	0	0	1	13	46	43	15	0	2	0	0	0	0	0	0	**121**
7:00 AM	0	2	1	1	6	36	64	34	9	1	0	0	0	0	0	0	0	**154**
8:00 AM	3	2	2	0	20	80	95	36	8	0	1	0	0	0	0	0	0	**247**
9:00 AM	0	4	4	1	13	73	110	51	6	2	0	0	0	0	0	0	0	**264**
10:00 AM	0	2	5	3	23	66	101	47	10	1	0	0	0	0	0	0	0	**258**
11:00 AM	0	2	1	0	11	77	121	54	6	1	0	0	0	0	0	0	0	**273**
12:00 PM	0	4	2	2	28	106	135	60	14	3	1	0	0	0	0	0	0	**355**
1:00 PM	0	4	7	3	18	93	116	44	6	3	1	0	0	0	0	0	0	**295**
2:00 PM	0	5	1	0	20	99	127	59	12	3	1	0	0	0	0	0	0	**327**
3:00 PM	0	4	2	4	13	95	147	64	8	1	0	0	0	0	0	0	0	**338**
4:00 PM	0	3	4	6	24	115	162	81	18	0	0	0	0	0	0	0	0	**413**
5:00 PM	2	4	3	1	22	156	228	84	14	3	0	0	0	0	0	0	0	**517**
6:00 PM	0	2	1	1	14	100	149	109	17	3	0	0	0	0	0	0	0	**396**
7:00 PM	0	2	2	2	7	72	106	59	14	2	0	0	0	0	0	0	0	**266**
8:00 PM	0	5	1	6	12	72	84	37	2	3	0	0	0	0	0	0	0	**222**
9:00 PM	0	0	0	0	7	58	83	33	6	1	1	0	0	0	0	0	0	**189**
10:00 PM	0	0	0	0	0	44	48	25	3	1	0	0	0	0	0	0	0	**121**
11:00 PM	0	0	0	0	4	12	29	15	4	1	0	0	0	0	0	0	0	**65**
Total	**5**	**47**	**36**	**31**	**253**	**1,387**	**1,991**	**957**	**182**	**31**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**4,928**
Percent	**0.1%**	**1.0%**	**0.7%**	**0.6%**	**5.1%**	**28.1%**	**40.4%**	**19.4%**	**3.7%**	**0.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	36.7	mph	Mean (Average) Speed	36.6	mph
85th Percentile	41.7	mph	10 mph Pace	31.9 - 41.9	mph
95th Percentile	44.7	mph	Percent in Pace	71.6	%

Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 to 4/25/2019
Site Code: 39

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	4	9	2	1	0	0	0	0	0	0	0	0	0	**16**
1:00 AM	0	1	0	1	4	5	4	1	0	0	0	0	0	0	0	0	0	**16**
2:00 AM	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	1	1	3	2	0	0	0	0	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	0	4	6	7	4	2	0	0	0	0	0	0	0	0	**23**
5:00 AM	0	0	0	2	15	30	23	10	1	0	0	0	0	0	0	0	0	**81**
6:00 AM	0	0	0	5	20	82	74	17	1	0	0	0	0	0	0	0	0	**199**
7:00 AM	0	1	1	7	66	182	146	22	1	0	0	0	0	0	0	0	0	**426**
8:00 AM	3	1	5	9	46	146	109	25	0	1	0	0	0	0	0	0	0	**345**
9:00 AM	7	6	1	14	106	121	52	11	1	0	0	0	0	0	0	0	0	**319**
10:00 AM	4	4	3	8	69	122	60	10	1	1	0	0	0	0	0	0	0	**282**
11:00 AM	1	2	2	11	63	109	56	4	0	0	0	0	0	0	0	0	0	**248**
12:00 PM	1	2	2	18	80	140	76	13	2	0	0	0	0	0	0	0	0	**334**
1:00 PM	2	5	3	12	100	153	55	14	1	0	0	0	0	0	0	0	0	**345**
2:00 PM	5	2	2	14	101	140	74	13	1	0	0	0	0	0	0	0	0	**352**
3:00 PM	5	5	2	10	82	159	79	16	2	1	0	0	0	0	0	0	0	**361**
4:00 PM	2	5	2	17	75	142	79	13	4	0	0	0	0	0	0	0	0	**339**
5:00 PM	4	3	1	10	80	170	72	10	1	0	0	0	0	0	0	0	0	**351**
6:00 PM	3	2	1	7	62	137	77	11	0	0	0	0	0	0	0	0	0	**300**
7:00 PM	2	0	4	17	92	149	46	5	0	0	0	0	0	0	0	0	0	**315**
8:00 PM	0	2	1	9	53	75	16	2	0	2	0	0	0	0	0	0	0	**160**
9:00 PM	0	0	0	6	25	41	18	3	1	0	0	0	0	0	0	0	0	**94**
10:00 PM	0	0	0	4	13	32	16	3	0	0	0	0	0	0	0	0	0	**68**
11:00 PM	0	1	1	3	13	18	8	2	2	0	0	0	0	0	0	0	0	**48**
Total	**39**	**42**	**31**	**186**	**1,176**	**2,174**	**1,152**	**210**	**21**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,036**
Percent	**0.8%**	**0.8%**	**0.6%**	**3.7%**	**23.4%**	**43.2%**	**22.9%**	**4.2%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	32.3	mph	Mean (Average) Speed	32.2	mph
85th Percentile	37.0	mph	10 mph Pace	27.6 - 37.6	mph
95th Percentile	39.9	mph	Percent in Pace	74.0	%

Project Manager: (415) 310-6469
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Location: Smith Ranch Rd, B/W 101 NB Ramps & Silvera
Date Range: 4/25/2019 - 5/1/2019
Site Code: 39

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019			5/1/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	29	16	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	16	45
1:00 AM	18	16	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	16	34
2:00 AM	9	7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	7	16
3:00 AM	4	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11
4:00 AM	3	23	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	23	26
5:00 AM	44	81	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	81	125
6:00 AM	121	199	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	199	320
7:00 AM	154	**426**	580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	**426**	580
8:00 AM	247	345	**592**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	345	**592**
9:00 AM	264	319	583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	264	319	583
10:00 AM	258	282	540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	258	282	540
11:00 AM	**273**	248	521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**273**	248	521
12:00 PM	355	334	689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	334	689
1:00 PM	295	345	640	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	295	345	640
2:00 PM	327	352	679	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	352	679
3:00 PM	338	**361**	699	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	338	**361**	699
4:00 PM	413	339	752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413	339	752
5:00 PM	**517**	351	**868**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**517**	351	**868**
6:00 PM	396	300	696	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	396	300	696
7:00 PM	266	315	581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	266	315	581
8:00 PM	222	160	382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	222	160	382
9:00 PM	189	94	283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189	94	283
10:00 PM	121	68	189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	68	189
11:00 PM	65	48	113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	48	113
Total	4,928	5,036	9,964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,928	5,036	9,964
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	11:00	07:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	07:00	08:00
Vol.	273	426	592	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	426	592
PM Peak	17:00	15:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	15:00	17:00
Vol.	517	361	868	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	517	361	868

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Woodland Ave, B/W Lindaro & Irwin

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 40

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	13	1,248	374	0	118	7	0	0	1	0	0	0	0	1,761
Percent	0.7%	70.9%	21.2%	0.0%	6.7%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	27	1,228	380	0	121	13	0	0	1	0	0	0	0	1,770
Percent	1.5%	69.4%	21.5%	0.0%	6.8%	0.7%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	40	2,476	754	0	239	20	0	0	2	0	0	0	0	3,531
Percent	1.1%	70.1%	21.4%	0.0%	6.8%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

DATA SOLUTIONS

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	9	5	0	1	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	36	13	0	7	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	104	57	0	18	0	0	0	0	0	0	0	0	**179**
8:00 AM	0	93	42	0	17	0	0	0	0	0	0	0	0	**152**
9:00 AM	2	63	20	0	10	2	0	0	0	0	0	0	0	**97**
10:00 AM	1	68	16	0	7	1	0	0	1	0	0	0	0	**94**
11:00 AM	0	66	26	0	6	2	0	0	0	0	0	0	0	**100**
12:00 PM	0	69	26	0	10	1	0	0	0	0	0	0	0	**106**
1:00 PM	0	61	14	0	12	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	69	25	0	4	0	0	0	0	0	0	0	0	**98**
3:00 PM	1	105	24	0	4	0	0	0	0	0	0	0	0	**134**
4:00 PM	1	104	19	0	5	0	0	0	0	0	0	0	0	**129**
5:00 PM	2	102	38	0	8	0	0	0	0	0	0	0	0	**150**
6:00 PM	4	73	14	0	4	0	0	0	0	0	0	0	0	**95**
7:00 PM	1	86	13	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	1	48	5	0	3	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	43	11	0	1	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**13**	**1,248**	**374**	**0**	**118**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.7%**	**70.9%**	**21.2%**	**0.0%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
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Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

DATA SOLUTIONS

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	5	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	10	9	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	2	32	16	0	9	0	0	0	0	0	0	0	0	**59**
7:00 AM	2	102	30	0	8	0	0	0	0	0	0	0	0	**142**
8:00 AM	5	102	34	0	7	1	0	0	0	0	0	0	0	**149**
9:00 AM	4	71	16	0	8	4	0	0	0	0	0	0	0	**103**
10:00 AM	1	63	19	0	11	3	0	0	0	0	0	0	0	**97**
11:00 AM	2	68	25	0	9	1	0	0	1	0	0	0	0	**106**
12:00 PM	0	63	17	0	15	3	0	0	0	0	0	0	0	**98**
1:00 PM	3	53	27	0	4	1	0	0	0	0	0	0	0	**88**
2:00 PM	2	116	39	0	13	0	0	0	0	0	0	0	0	**170**
3:00 PM	1	94	25	0	8	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	100	45	0	8	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	94	27	0	10	0	0	0	0	0	0	0	0	**131**
6:00 PM	1	84	18	0	6	0	0	0	0	0	0	0	0	**109**
7:00 PM	1	58	3	0	2	0	0	0	0	0	0	0	0	**64**
8:00 PM	1	44	15	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	40	4	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
Total	**27**	**1,228**	**380**	**0**	**121**	**13**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,770**
Percent	**1.5%**	**69.4%**	**21.5%**	**0.0%**	**6.8%**	**0.7%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	9	5	0	1	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	36	13	0	7	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	104	57	0	18	0	0	0	0	0	0	0	0	**179**
8:00 AM	0	93	42	0	17	0	0	0	0	0	0	0	0	**152**
9:00 AM	2	63	20	0	10	2	0	0	0	0	0	0	0	**97**
10:00 AM	1	68	16	0	7	1	0	0	1	0	0	0	0	**94**
11:00 AM	0	66	26	0	6	2	0	0	0	0	0	0	0	**100**
12:00 PM	0	69	26	0	10	1	0	0	0	0	0	0	0	**106**
1:00 PM	0	61	14	0	12	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	69	25	0	4	0	0	0	0	0	0	0	0	**98**
3:00 PM	1	105	24	0	4	0	0	0	0	0	0	0	0	**134**
4:00 PM	1	104	19	0	5	0	0	0	0	0	0	0	0	**129**
5:00 PM	2	102	38	0	8	0	0	0	0	0	0	0	0	**150**
6:00 PM	4	73	14	0	4	0	0	0	0	0	0	0	0	**95**
7:00 PM	1	86	13	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	1	48	5	0	3	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	43	11	0	1	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**13**	**1,248**	**374**	**0**	**118**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.7%**	**70.9%**	**21.2%**	**0.0%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	5	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	10	9	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	2	32	16	0	9	0	0	0	0	0	0	0	0	**59**
7:00 AM	2	102	30	0	8	0	0	0	0	0	0	0	0	**142**
8:00 AM	5	102	34	0	7	1	0	0	0	0	0	0	0	**149**
9:00 AM	4	71	16	0	8	4	0	0	0	0	0	0	0	**103**
10:00 AM	1	63	19	0	11	3	0	0	0	0	0	0	0	**97**
11:00 AM	2	68	25	0	9	1	0	0	1	0	0	0	0	**106**
12:00 PM	0	63	17	0	15	3	0	0	0	0	0	0	0	**98**
1:00 PM	3	53	27	0	4	1	0	0	0	0	0	0	0	**88**
2:00 PM	2	116	39	0	13	0	0	0	0	0	0	0	0	**170**
3:00 PM	1	94	25	0	8	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	100	45	0	8	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	94	27	0	10	0	0	0	0	0	0	0	0	**131**
6:00 PM	1	84	18	0	6	0	0	0	0	0	0	0	0	**109**
7:00 PM	1	58	3	0	2	0	0	0	0	0	0	0	0	**64**
8:00 PM	1	44	15	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	40	4	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
Total	**27**	**1,228**	**380**	**0**	**121**	**13**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,770**
Percent	**1.5%**	**69.4%**	**21.5%**	**0.0%**	**6.8%**	**0.7%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	**2**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	9	5	0	1	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	36	13	0	7	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	104	57	0	18	0	0	0	0	0	0	0	0	**179**
8:00 AM	0	93	42	0	17	0	0	0	0	0	0	0	0	**152**
9:00 AM	2	63	20	0	10	2	0	0	0	0	0	0	0	**97**
10:00 AM	1	68	16	0	7	1	0	0	1	0	0	0	0	**94**
11:00 AM	0	66	26	0	6	2	0	0	0	0	0	0	0	**100**
12:00 PM	0	69	26	0	10	1	0	0	0	0	0	0	0	**106**
1:00 PM	0	61	14	0	12	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	69	25	0	4	0	0	0	0	0	0	0	0	**98**
3:00 PM	1	105	24	0	4	0	0	0	0	0	0	0	0	**134**
4:00 PM	1	104	19	0	5	0	0	0	0	0	0	0	0	**129**
5:00 PM	2	102	38	0	8	0	0	0	0	0	0	0	0	**150**
6:00 PM	4	73	14	0	4	0	0	0	0	0	0	0	0	**95**
7:00 PM	1	86	13	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	1	48	5	0	3	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	43	11	0	1	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
Total	**13**	**1,248**	**374**	**0**	**118**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.7%**	**70.9%**	**21.2%**	**0.0%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	5	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	1	2	0	1	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	10	9	0	1	0	0	0	0	0	0	0	0	**20**
6:00 AM	2	32	16	0	9	0	0	0	0	0	0	0	0	**59**
7:00 AM	2	102	30	0	8	0	0	0	0	0	0	0	0	**142**
8:00 AM	5	102	34	0	7	1	0	0	0	0	0	0	0	**149**
9:00 AM	4	71	16	0	8	4	0	0	0	0	0	0	0	**103**
10:00 AM	1	63	19	0	11	3	0	0	0	0	0	0	0	**97**
11:00 AM	2	68	25	0	9	1	0	0	1	0	0	0	0	**106**
12:00 PM	0	63	17	0	15	3	0	0	0	0	0	0	0	**98**
1:00 PM	3	53	27	0	4	1	0	0	0	0	0	0	0	**88**
2:00 PM	2	116	39	0	13	0	0	0	0	0	0	0	0	**170**
3:00 PM	1	94	25	0	8	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	100	45	0	8	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	94	27	0	10	0	0	0	0	0	0	0	0	**131**
6:00 PM	1	84	18	0	6	0	0	0	0	0	0	0	0	**109**
7:00 PM	1	58	3	0	2	0	0	0	0	0	0	0	0	**64**
8:00 PM	1	44	15	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	40	4	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	8	3	0	0	0	0	0	0	0	0	0	0	**11**
Total	**27**	**1,228**	**380**	**0**	**121**	**13**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1,770**
Percent	**1.5%**	**69.4%**	**21.5%**	**0.0%**	**6.8%**	**0.7%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Woodland Ave, B/W Lindaro & Irwin

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 40

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	2	4	69	600	891	179	11	4	1	0	0	0	0	0	0	0	0	1,761
Percent	0.1%	0.2%	3.9%	34.1%	50.6%	10.2%	0.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	4	14	34	359	899	387	63	6	3	1	0	0	0	0	0	0	0	1,770
Percent	0.2%	0.8%	1.9%	20.3%	50.8%	21.9%	3.6%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	6	18	103	959	1,790	566	74	10	4	1	0	0	0	0	0	0	0	3,531
Percent	0.2%	0.5%	2.9%	27.2%	50.7%	16.0%	2.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	25.8	mph	Mean (Average) Speed	26.0	mph
85th Percentile	29.4	mph	10 mph Pace	20.6 - 30.6	mph
95th Percentile	31.9	mph	Percent in Pace	85.4	%
Southbound			**Southbound**		
50th Percentile (Median)	27.5	mph	Mean (Average) Speed	27.7	mph
85th Percentile	31.6	mph	10 mph Pace	22.9 - 32.9	mph
95th Percentile	34.6	mph	Percent in Pace	82.0	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Wednesday, April 24, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	0	0	2	9	3	1	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	0	2	17	29	7	0	1	0	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	0	4	64	98	13	0	0	0	0	0	0	0	0	0	0	0	**179**
8:00 AM	2	0	10	56	72	12	0	0	0	0	0	0	0	0	0	0	0	**152**
9:00 AM	0	0	6	30	45	15	1	0	0	0	0	0	0	0	0	0	0	**97**
10:00 AM	0	1	4	29	43	15	2	0	0	0	0	0	0	0	0	0	0	**94**
11:00 AM	0	1	4	25	54	16	0	0	0	0	0	0	0	0	0	0	0	**100**
12:00 PM	0	0	4	34	55	13	0	0	0	0	0	0	0	0	0	0	0	**106**
1:00 PM	0	0	6	30	44	7	0	0	0	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	1	2	40	44	9	2	0	0	0	0	0	0	0	0	0	0	**98**
3:00 PM	0	1	3	38	79	13	0	0	0	0	0	0	0	0	0	0	0	**134**
4:00 PM	0	0	6	36	73	11	2	0	1	0	0	0	0	0	0	0	0	**129**
5:00 PM	0	0	1	45	83	19	0	2	0	0	0	0	0	0	0	0	0	**150**
6:00 PM	0	0	6	40	39	7	2	1	0	0	0	0	0	0	0	0	0	**95**
7:00 PM	0	0	1	40	50	8	1	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	0	0	2	28	22	5	0	0	0	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	0	3	25	23	4	0	0	0	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	0	4	14	12	1	0	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	0	1	1	9	1	0	0	0	0	0	0	0	0	0	0	0	**12**
Total	**2**	**4**	**69**	**600**	**891**	**179**	**11**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.1%**	**0.2%**	**3.9%**	**34.1%**	**50.6%**	**10.2%**	**0.6%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	25.8	mph	Mean (Average) Speed	26.0	mph
85th Percentile	29.4	mph	10 mph Pace	20.6 - 30.6	mph
95th Percentile	31.9	mph	Percent in Pace	85.4	%

Project Manager: (415) 310-6469
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Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Wednesday, April 24, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	0	0	1	3	1	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	1	7	7	3	2	0	0	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	1	2	13	22	18	2	1	0	0	0	0	0	0	0	0	0	**59**
7:00 AM	1	0	4	24	74	34	5	0	0	0	0	0	0	0	0	0	0	**142**
8:00 AM	0	2	4	18	82	37	6	0	0	0	0	0	0	0	0	0	0	**149**
9:00 AM	0	3	1	20	51	24	3	0	1	0	0	0	0	0	0	0	0	**103**
10:00 AM	0	0	3	20	49	22	3	0	0	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	3	2	27	55	16	3	0	0	0	0	0	0	0	0	0	0	**106**
12:00 PM	0	0	0	26	42	25	4	1	0	0	0	0	0	0	0	0	0	**98**
1:00 PM	0	2	1	14	42	22	6	0	0	1	0	0	0	0	0	0	0	**88**
2:00 PM	1	1	4	41	83	37	2	1	0	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	0	1	17	73	28	9	0	0	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	0	1	25	87	38	1	1	0	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	0	0	30	68	28	4	1	0	0	0	0	0	0	0	0	0	**131**
6:00 PM	0	1	2	14	71	20	1	0	0	0	0	0	0	0	0	0	0	**109**
7:00 PM	0	0	2	18	27	11	5	0	1	0	0	0	0	0	0	0	0	**64**
8:00 PM	0	1	1	23	25	9	1	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	0	4	12	20	8	0	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	0	0	7	6	4	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	0	0	0	8	1	1	1	0	0	0	0	0	0	0	0	0	**11**
Total	**4**	**14**	**34**	**359**	**899**	**387**	**63**	**6**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,770**
Percent	**0.2%**	**0.8%**	**1.9%**	**20.3%**	**50.8%**	**21.9%**	**3.6%**	**0.3%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.5	mph	Mean (Average) Speed	27.7	mph
85th Percentile	31.6	mph	10 mph Pace	22.9 - 32.9	mph
95th Percentile	34.6	mph	Percent in Pace	81.98	%

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
5:00 AM	0	0	0	2	9	3	1	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	0	2	17	29	7	0	1	0	0	0	0	0	0	0	0	0	**56**
7:00 AM	0	0	4	64	98	13	0	0	0	0	0	0	0	0	0	0	0	**179**
8:00 AM	2	0	10	56	72	12	0	0	0	0	0	0	0	0	0	0	0	**152**
9:00 AM	0	0	6	30	45	15	1	0	0	0	0	0	0	0	0	0	0	**97**
10:00 AM	0	1	4	29	43	15	2	0	0	0	0	0	0	0	0	0	0	**94**
11:00 AM	0	1	4	25	54	16	0	0	0	0	0	0	0	0	0	0	0	**100**
12:00 PM	0	0	4	34	55	13	0	0	0	0	0	0	0	0	0	0	0	**106**
1:00 PM	0	0	6	30	44	7	0	0	0	0	0	0	0	0	0	0	0	**87**
2:00 PM	0	1	2	40	44	9	2	0	0	0	0	0	0	0	0	0	0	**98**
3:00 PM	0	1	3	38	79	13	0	0	0	0	0	0	0	0	0	0	0	**134**
4:00 PM	0	0	6	36	73	11	2	0	1	0	0	0	0	0	0	0	0	**129**
5:00 PM	0	0	1	45	83	19	0	2	0	0	0	0	0	0	0	0	0	**150**
6:00 PM	0	0	6	40	39	7	2	1	0	0	0	0	0	0	0	0	0	**95**
7:00 PM	0	0	1	40	50	8	1	0	0	0	0	0	0	0	0	0	0	**100**
8:00 PM	0	0	2	28	22	5	0	0	0	0	0	0	0	0	0	0	0	**57**
9:00 PM	0	0	3	25	23	4	0	0	0	0	0	0	0	0	0	0	0	**55**
10:00 PM	0	0	4	14	12	1	0	0	0	0	0	0	0	0	0	0	0	**31**
11:00 PM	0	0	1	1	9	1	0	0	0	0	0	0	0	0	0	0	0	**12**
Total	**2**	**4**	**69**	**600**	**891**	**179**	**11**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,761**
Percent	**0.1%**	**0.2%**	**3.9%**	**34.1%**	**50.6%**	**10.2%**	**0.6%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	25.8	mph	Mean (Average) Speed	26.0	mph
85th Percentile	29.4	mph	10 mph Pace	20.6 - 30.6	mph
95th Percentile	31.9	mph	Percent in Pace	85.4	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 to 4/24/2019
Site Code: 40

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	0	0	1	3	1	1	0	0	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
2:00 AM	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
4:00 AM	1	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	1	7	7	3	2	0	0	0	0	0	0	0	0	0	0	**20**
6:00 AM	0	1	2	13	22	18	2	1	0	0	0	0	0	0	0	0	0	**59**
7:00 AM	1	0	4	24	74	34	5	0	0	0	0	0	0	0	0	0	0	**142**
8:00 AM	0	2	4	18	82	37	6	0	0	0	0	0	0	0	0	0	0	**149**
9:00 AM	0	3	1	20	51	24	3	0	1	0	0	0	0	0	0	0	0	**103**
10:00 AM	0	0	3	20	49	22	3	0	0	0	0	0	0	0	0	0	0	**97**
11:00 AM	0	3	2	27	55	16	3	0	0	0	0	0	0	0	0	0	0	**106**
12:00 PM	0	0	0	26	42	25	4	1	0	0	0	0	0	0	0	0	0	**98**
1:00 PM	0	2	1	14	42	22	6	0	0	1	0	0	0	0	0	0	0	**88**
2:00 PM	1	1	4	41	83	37	2	1	0	0	0	0	0	0	0	0	0	**170**
3:00 PM	0	0	1	17	73	28	9	0	0	0	0	0	0	0	0	0	0	**128**
4:00 PM	0	0	1	25	87	38	1	1	0	0	0	0	0	0	0	0	0	**153**
5:00 PM	0	0	0	30	68	28	4	1	0	0	0	0	0	0	0	0	0	**131**
6:00 PM	0	1	2	14	71	20	1	0	0	0	0	0	0	0	0	0	0	**109**
7:00 PM	0	0	2	18	27	11	5	0	1	0	0	0	0	0	0	0	0	**64**
8:00 PM	0	1	1	23	25	9	1	0	1	0	0	0	0	0	0	0	0	**61**
9:00 PM	0	0	4	12	20	8	0	0	0	0	0	0	0	0	0	0	0	**44**
10:00 PM	0	0	0	7	6	4	3	0	0	0	0	0	0	0	0	0	0	**20**
11:00 PM	0	0	0	0	8	1	1	1	0	0	0	0	0	0	0	0	0	**11**
Total	**4**	**14**	**34**	**359**	**899**	**387**	**63**	**6**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,770**
Percent	**0.2%**	**0.8%**	**1.9%**	**20.3%**	**50.8%**	**21.9%**	**3.6%**	**0.3%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.5	mph	Mean (Average) Speed	27.7	mph
85th Percentile	31.6	mph	10 mph Pace	22.9 - 32.9	mph
95th Percentile	34.6	mph	Percent in Pace	82.0	%

Location: Woodland Ave, B/W Lindaro & Irwin
Date Range: 4/24/2019 - 4/30/2019
Site Code: 40

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12
1:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
2:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
3:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
4:00 AM	1	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	6
5:00 AM	15	20	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	20	35
6:00 AM	56	59	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	59	115
7:00 AM	**179**	142	**321**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**179**	142	**321**
8:00 AM	152	**149**	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	152	**149**	301
9:00 AM	97	103	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	103	200
10:00 AM	94	97	191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	97	191
11:00 AM	100	106	206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	106	206
12:00 PM	106	98	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	98	204
1:00 PM	87	88	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	88	175
2:00 PM	98	**170**	268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	**170**	268
3:00 PM	134	128	262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	128	262
4:00 PM	129	153	**282**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	153	**282**
5:00 PM	**150**	131	281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**150**	131	281
6:00 PM	95	109	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95	109	204
7:00 PM	100	64	164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	64	164
8:00 PM	57	61	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	61	118
9:00 PM	55	44	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	44	99
10:00 PM	31	20	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	20	51
11:00 PM	12	11	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	11	23
Total	1,761	1,770	3,531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,761	1,770	3,531
Percent	50%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	50%	-
AM Peak	07:00	08:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	08:00	07:00
Vol.	179	149	321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	179	149	321
PM Peak	17:00	14:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	14:00	16:00
Vol.	150	170	282	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	170	282

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Vehicle Classification Report Summary

Location: Woodland Ave, B/W Irwin & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 41

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	46	2,451	781	1	272	17	0	1	3	0	0	0	0	3,572
Percent	1.3%	68.6%	21.9%	0.0%	7.6%	0.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	38	1,838	643	2	234	18	0	0	3	1	0	0	0	2,777
Percent	1.4%	66.2%	23.2%	0.1%	8.4%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	84	4,289	1,424	3	506	35	0	1	6	1	0	0	0	6,349
Percent	1.3%	67.6%	22.4%	0.0%	8.0%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Wednesday, April 24, 2019
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	19	12	0	8	0	0	0	0	0	0	0	0	**39**
6:00 AM	2	91	43	0	14	0	0	0	0	0	0	0	0	**150**
7:00 AM	1	198	102	0	31	0	0	1	0	0	0	0	0	**333**
8:00 AM	2	161	77	0	31	2	0	0	0	0	0	0	0	**273**
9:00 AM	1	134	38	0	18	4	0	0	1	0	0	0	0	**196**
10:00 AM	4	128	38	0	22	1	0	0	1	0	0	0	0	**194**
11:00 AM	3	122	51	0	16	5	0	0	0	0	0	0	0	**197**
12:00 PM	0	133	54	0	19	1	0	0	0	0	0	0	0	**207**
1:00 PM	3	134	40	0	22	1	0	0	0	0	0	0	0	**200**
2:00 PM	0	159	45	0	21	0	0	0	0	0	0	0	0	**225**
3:00 PM	3	169	49	1	26	0	0	0	0	0	0	0	0	**248**
4:00 PM	4	206	52	0	13	0	0	0	0	0	0	0	0	**275**
5:00 PM	10	198	55	0	12	0	0	0	1	0	0	0	0	**276**
6:00 PM	6	156	33	0	7	0	0	0	0	0	0	0	0	**202**
7:00 PM	3	144	30	0	2	1	0	0	0	0	0	0	0	**180**
8:00 PM	2	106	24	0	3	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	72	19	0	3	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	65	11	0	2	1	0	0	0	0	0	0	0	**80**
11:00 PM	0	27	1	0	1	0	0	0	0	0	0	0	0	**29**
Total	**46**	**2,451**	**781**	**1**	**272**	**17**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3,572**
Percent	**1.3%**	**68.6%**	**21.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Wednesday, April 24, 2019
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	3	0	2	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	4	3	0	1	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	11	10	0	5	0	0	0	0	0	0	0	0	**26**
6:00 AM	5	50	32	1	18	0	0	0	0	0	0	0	0	**106**
7:00 AM	4	159	67	0	20	0	0	0	1	1	0	0	0	**252**
8:00 AM	4	156	53	0	16	3	0	0	0	0	0	0	0	**232**
9:00 AM	2	106	37	0	18	3	0	0	0	0	0	0	0	**166**
10:00 AM	4	92	40	1	16	3	0	0	1	0	0	0	0	**157**
11:00 AM	3	109	44	0	23	3	0	0	1	0	0	0	0	**183**
12:00 PM	3	102	29	0	13	4	0	0	0	0	0	0	0	**151**
1:00 PM	2	103	33	0	15	0	0	0	0	0	0	0	0	**153**
2:00 PM	2	145	57	0	28	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	135	62	0	14	0	0	0	0	0	0	0	0	**213**
4:00 PM	3	144	57	0	14	0	0	0	0	0	0	0	0	**218**
5:00 PM	1	148	38	0	12	1	0	0	0	0	0	0	0	**200**
6:00 PM	0	121	26	0	8	1	0	0	0	0	0	0	0	**156**
7:00 PM	0	71	14	0	4	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	75	24	0	3	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	50	6	0	1	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	29	2	0	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
Total	**38**	**1,838**	**643**	**2**	**234**	**18**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**2,777**
Percent	**1.4%**	**66.2%**	**23.2%**	**0.1%**	**8.4%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	19	12	0	8	0	0	0	0	0	0	0	0	**39**
6:00 AM	2	91	43	0	14	0	0	0	0	0	0	0	0	**150**
7:00 AM	1	198	102	0	31	0	0	1	0	0	0	0	0	**333**
8:00 AM	2	161	77	0	31	2	0	0	0	0	0	0	0	**273**
9:00 AM	1	134	38	0	18	4	0	0	1	0	0	0	0	**196**
10:00 AM	4	128	38	0	22	1	0	0	1	0	0	0	0	**194**
11:00 AM	3	122	51	0	16	5	0	0	0	0	0	0	0	**197**
12:00 PM	0	133	54	0	19	1	0	0	0	0	0	0	0	**207**
1:00 PM	3	134	40	0	22	1	0	0	0	0	0	0	0	**200**
2:00 PM	0	159	45	0	21	0	0	0	0	0	0	0	0	**225**
3:00 PM	3	169	49	1	26	0	0	0	0	0	0	0	0	**248**
4:00 PM	4	206	52	0	13	0	0	0	0	0	0	0	0	**275**
5:00 PM	10	198	55	0	12	0	0	0	1	0	0	0	0	**276**
6:00 PM	6	156	33	0	7	0	0	0	0	0	0	0	0	**202**
7:00 PM	3	144	30	0	2	1	0	0	0	0	0	0	0	**180**
8:00 PM	2	106	24	0	3	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	72	19	0	3	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	65	11	0	2	1	0	0	0	0	0	0	0	**80**
11:00 PM	0	27	1	0	1	0	0	0	0	0	0	0	0	**29**
Total	**46**	**2,451**	**781**	**1**	**272**	**17**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3,572**
Percent	**1.3%**	**68.6%**	**21.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	3	0	2	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	4	3	0	1	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	11	10	0	5	0	0	0	0	0	0	0	0	**26**
6:00 AM	5	50	32	1	18	0	0	0	0	0	0	0	0	**106**
7:00 AM	4	159	67	0	20	0	0	0	1	1	0	0	0	**252**
8:00 AM	4	156	53	0	16	3	0	0	0	0	0	0	0	**232**
9:00 AM	2	106	37	0	18	3	0	0	0	0	0	0	0	**166**
10:00 AM	4	92	40	1	16	3	0	0	1	0	0	0	0	**157**
11:00 AM	3	109	44	0	23	3	0	0	1	0	0	0	0	**183**
12:00 PM	3	102	29	0	13	4	0	0	0	0	0	0	0	**151**
1:00 PM	2	103	33	0	15	0	0	0	0	0	0	0	0	**153**
2:00 PM	2	145	57	0	28	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	135	62	0	14	0	0	0	0	0	0	0	0	**213**
4:00 PM	3	144	57	0	14	0	0	0	0	0	0	0	0	**218**
5:00 PM	1	148	38	0	12	1	0	0	0	0	0	0	0	**200**
6:00 PM	0	121	26	0	8	1	0	0	0	0	0	0	0	**156**
7:00 PM	0	71	14	0	4	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	75	24	0	3	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	50	6	0	1	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	29	2	0	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
Total	**38**	**1,838**	**643**	**2**	**234**	**18**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**2,777**
Percent	**1.4%**	**66.2%**	**23.2%**	**0.1%**	**8.4%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	**8**
1:00 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	**6**
4:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	19	12	0	8	0	0	0	0	0	0	0	0	**39**
6:00 AM	2	91	43	0	14	0	0	0	0	0	0	0	0	**150**
7:00 AM	1	198	102	0	31	0	0	1	0	0	0	0	0	**333**
8:00 AM	2	161	77	0	31	2	0	0	0	0	0	0	0	**273**
9:00 AM	1	134	38	0	18	4	0	0	1	0	0	0	0	**196**
10:00 AM	4	128	38	0	22	1	0	0	1	0	0	0	0	**194**
11:00 AM	3	122	51	0	16	5	0	0	0	0	0	0	0	**197**
12:00 PM	0	133	54	0	19	1	0	0	0	0	0	0	0	**207**
1:00 PM	3	134	40	0	22	1	0	0	0	0	0	0	0	**200**
2:00 PM	0	159	45	0	21	0	0	0	0	0	0	0	0	**225**
3:00 PM	3	169	49	1	26	0	0	0	0	0	0	0	0	**248**
4:00 PM	4	206	52	0	13	0	0	0	0	0	0	0	0	**275**
5:00 PM	10	198	55	0	12	0	0	0	1	0	0	0	0	**276**
6:00 PM	6	156	33	0	7	0	0	0	0	0	0	0	0	**202**
7:00 PM	3	144	30	0	2	1	0	0	0	0	0	0	0	**180**
8:00 PM	2	106	24	0	3	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	72	19	0	3	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	65	11	0	2	1	0	0	0	0	0	0	0	**80**
11:00 PM	0	27	1	0	1	0	0	0	0	0	0	0	0	**29**
Total	**46**	**2,451**	**781**	**1**	**272**	**17**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3,572**
Percent	**1.3%**	**68.6%**	**21.9%**	**0.0%**	**7.6%**	**0.5%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	8	3	0	2	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	4	3	0	1	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	11	10	0	5	0	0	0	0	0	0	0	0	**26**
6:00 AM	5	50	32	1	18	0	0	0	0	0	0	0	0	**106**
7:00 AM	4	159	67	0	20	0	0	0	1	1	0	0	0	**252**
8:00 AM	4	156	53	0	16	3	0	0	0	0	0	0	0	**232**
9:00 AM	2	106	37	0	18	3	0	0	0	0	0	0	0	**166**
10:00 AM	4	92	40	1	16	3	0	0	1	0	0	0	0	**157**
11:00 AM	3	109	44	0	23	3	0	0	1	0	0	0	0	**183**
12:00 PM	3	102	29	0	13	4	0	0	0	0	0	0	0	**151**
1:00 PM	2	103	33	0	15	0	0	0	0	0	0	0	0	**153**
2:00 PM	2	145	57	0	28	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	135	62	0	14	0	0	0	0	0	0	0	0	**213**
4:00 PM	3	144	57	0	14	0	0	0	0	0	0	0	0	**218**
5:00 PM	1	148	38	0	12	1	0	0	0	0	0	0	0	**200**
6:00 PM	0	121	26	0	8	1	0	0	0	0	0	0	0	**156**
7:00 PM	0	71	14	0	4	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	75	24	0	3	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	50	6	0	1	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	29	2	0	2	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
Total	**38**	**1,838**	**643**	**2**	**234**	**18**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**2,777**
Percent	**1.4%**	**66.2%**	**23.2%**	**0.1%**	**8.4%**	**0.6%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Vehicle Speed Report Summary

Location: Woodland Ave, B/W Irwin & Bellam

Count Direction: Northbound / Southbound

Date Range: 4/24/2019 to 4/24/2019

Site Code: 41

	Speed Range (mph)																Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	15	47	186	939	1,565	723	87	6	1	3	0	0	0	0	0	0	0	3,572
Percent	0.4%	1.3%	5.2%	26.3%	43.8%	20.2%	2.4%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	15	54	173	709	1,229	482	97	17	1	0	0	0	0	0	0	0	0	2,777
Percent	0.5%	1.9%	6.2%	25.5%	44.3%	17.4%	3.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	30	101	359	1,648	2,794	1,205	184	23	2	3	0	0	0	0	0	0	0	6,349
Percent	0.5%	1.6%	5.7%	26.0%	44.0%	19.0%	2.9%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	27.0	mph	Mean (Average) Speed	26.7	mph
85th Percentile	31.2	mph	10 mph Pace	22.1 - 32.1	mph
95th Percentile	33.7	mph	Percent in Pace	76.5	%
Southbound			**Southbound**		
50th Percentile (Median)	26.6	mph	Mean (Average) Speed	26.5	mph
85th Percentile	31.1	mph	10 mph Pace	21.3 - 31.3	mph
95th Percentile	34.4	mph	Percent in Pace	72.8	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Wednesday, April 24, 2019
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	3	3	0	1	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	1	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	0	1	0	3	6	0	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	0	2	7	15	10	5	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	3	5	30	73	29	7	2	1	0	0	0	0	0	0	0	0	**150**
7:00 AM	2	9	32	116	126	38	7	0	0	3	0	0	0	0	0	0	0	**333**
8:00 AM	0	2	9	93	136	30	2	1	0	0	0	0	0	0	0	0	0	**273**
9:00 AM	1	3	18	27	91	49	7	0	0	0	0	0	0	0	0	0	0	**196**
10:00 AM	4	4	12	63	75	32	3	1	0	0	0	0	0	0	0	0	0	**194**
11:00 AM	1	0	8	44	98	42	3	1	0	0	0	0	0	0	0	0	0	**197**
12:00 PM	0	1	4	51	92	50	9	0	0	0	0	0	0	0	0	0	0	**207**
1:00 PM	0	1	2	50	102	40	5	0	0	0	0	0	0	0	0	0	0	**200**
2:00 PM	0	0	0	69	83	65	8	0	0	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	2	5	63	129	45	4	0	0	0	0	0	0	0	0	0	0	**248**
4:00 PM	1	0	20	61	133	56	4	0	0	0	0	0	0	0	0	0	0	**275**
5:00 PM	1	10	22	45	116	74	7	1	0	0	0	0	0	0	0	0	0	**276**
6:00 PM	0	2	17	49	82	48	4	0	0	0	0	0	0	0	0	0	0	**202**
7:00 PM	1	3	7	51	84	31	3	0	0	0	0	0	0	0	0	0	0	**180**
8:00 PM	3	0	10	54	36	29	3	0	0	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	1	5	33	40	13	2	0	0	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	5	3	22	30	17	2	0	0	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	0	3	4	10	11	1	0	0	0	0	0	0	0	0	0	0	**29**
Total	**15**	**47**	**186**	**939**	**1,565**	**723**	**87**	**6**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,572**
Percent	**0.4%**	**1.3%**	**5.2%**	**26.3%**	**43.8%**	**20.2%**	**2.4%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	27.0	mph	Mean (Average) Speed	26.7	mph
85th Percentile	31.2	mph	10 mph Pace	22.1 - 32.1	mph
95th Percentile	33.7	mph	Percent in Pace	76.5	%

Project Manager: (415) 310-6469
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Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Wednesday, April 24, 2019
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	0	1	4	3	5	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	1	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	0	3	9	7	4	2	1	0	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	6	9	24	36	24	7	0	0	0	0	0	0	0	0	0	0	**106**
7:00 AM	0	4	16	65	108	46	11	2	0	0	0	0	0	0	0	0	0	**252**
8:00 AM	3	5	17	59	97	45	4	2	0	0	0	0	0	0	0	0	0	**232**
9:00 AM	0	6	11	18	86	36	8	1	0	0	0	0	0	0	0	0	0	**166**
10:00 AM	1	6	15	46	59	27	3	0	0	0	0	0	0	0	0	0	0	**157**
11:00 AM	0	2	8	53	89	25	6	0	0	0	0	0	0	0	0	0	0	**183**
12:00 PM	0	4	10	43	57	32	4	1	0	0	0	0	0	0	0	0	0	**151**
1:00 PM	1	3	14	50	59	16	9	1	0	0	0	0	0	0	0	0	0	**153**
2:00 PM	4	0	3	41	121	49	10	4	0	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	6	14	44	110	29	7	1	0	0	0	0	0	0	0	0	0	**213**
4:00 PM	0	2	11	65	86	45	7	1	1	0	0	0	0	0	0	0	0	**218**
5:00 PM	0	1	4	47	113	27	7	1	0	0	0	0	0	0	0	0	0	**200**
6:00 PM	0	2	10	42	73	23	4	2	0	0	0	0	0	0	0	0	0	**156**
7:00 PM	1	0	9	23	36	17	3	0	0	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	4	8	39	38	10	3	0	0	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	0	4	18	27	7	1	0	0	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	2	4	9	10	8	0	0	0	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	0	0	6	7	3	1	0	0	0	0	0	0	0	0	0	0	**17**
Total	**15**	**54**	**173**	**709**	**1,229**	**482**	**97**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,777**
Percent	**0.5%**	**1.9%**	**6.2%**	**25.5%**	**44.3%**	**17.4%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	26.6	mph	Mean (Average) Speed	26.5	mph
85th Percentile	31.1	mph	10 mph Pace	21.3 - 31.3	mph
95th Percentile	34.4	mph	Percent in Pace	72.81	%

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	3	3	0	1	0	0	0	0	0	0	0	0	0	0	**8**
1:00 AM	0	1	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	**9**
2:00 AM	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	0	1	0	3	6	0	0	0	0	0	0	0	0	0	0	0	**10**
5:00 AM	0	0	2	7	15	10	5	0	0	0	0	0	0	0	0	0	0	**39**
6:00 AM	0	3	5	30	73	29	7	2	1	0	0	0	0	0	0	0	0	**150**
7:00 AM	2	9	32	116	126	38	7	0	0	3	0	0	0	0	0	0	0	**333**
8:00 AM	0	2	9	93	136	30	2	1	0	0	0	0	0	0	0	0	0	**273**
9:00 AM	1	3	18	27	91	49	7	0	0	0	0	0	0	0	0	0	0	**196**
10:00 AM	4	4	12	63	75	32	3	1	0	0	0	0	0	0	0	0	0	**194**
11:00 AM	1	0	8	44	98	42	3	1	0	0	0	0	0	0	0	0	0	**197**
12:00 PM	0	1	4	51	92	50	9	0	0	0	0	0	0	0	0	0	0	**207**
1:00 PM	0	1	2	50	102	40	5	0	0	0	0	0	0	0	0	0	0	**200**
2:00 PM	0	0	0	69	83	65	8	0	0	0	0	0	0	0	0	0	0	**225**
3:00 PM	0	2	5	63	129	45	4	0	0	0	0	0	0	0	0	0	0	**248**
4:00 PM	1	0	20	61	133	56	4	0	0	0	0	0	0	0	0	0	0	**275**
5:00 PM	1	10	22	45	116	74	7	1	0	0	0	0	0	0	0	0	0	**276**
6:00 PM	0	2	17	49	82	48	4	0	0	0	0	0	0	0	0	0	0	**202**
7:00 PM	1	3	7	51	84	31	3	0	0	0	0	0	0	0	0	0	0	**180**
8:00 PM	3	0	10	54	36	29	3	0	0	0	0	0	0	0	0	0	0	**135**
9:00 PM	0	1	5	33	40	13	2	0	0	0	0	0	0	0	0	0	0	**94**
10:00 PM	1	5	3	22	30	17	2	0	0	0	0	0	0	0	0	0	0	**80**
11:00 PM	0	0	3	4	10	11	1	0	0	0	0	0	0	0	0	0	0	**29**
Total	**15**	**47**	**186**	**939**	**1,565**	**723**	**87**	**6**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,572**
Percent	**0.4%**	**1.3%**	**5.2%**	**26.3%**	**43.8%**	**20.2%**	**2.4%**	**0.2%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	27.0	mph	Mean (Average) Speed	26.7	mph
85th Percentile	31.2	mph	10 mph Pace	22.1 - 32.1	mph
95th Percentile	33.7	mph	Percent in Pace	76.5	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 to 4/24/2019
Site Code: 41

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	1	0	1	4	3	5	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**2**
4:00 AM	1	1	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0	**9**
5:00 AM	0	0	3	9	7	4	2	1	0	0	0	0	0	0	0	0	0	**26**
6:00 AM	0	6	9	24	36	24	7	0	0	0	0	0	0	0	0	0	0	**106**
7:00 AM	0	4	16	65	108	46	11	2	0	0	0	0	0	0	0	0	0	**252**
8:00 AM	3	5	17	59	97	45	4	2	0	0	0	0	0	0	0	0	0	**232**
9:00 AM	0	6	11	18	86	36	8	1	0	0	0	0	0	0	0	0	0	**166**
10:00 AM	1	6	15	46	59	27	3	0	0	0	0	0	0	0	0	0	0	**157**
11:00 AM	0	2	8	53	89	25	6	0	0	0	0	0	0	0	0	0	0	**183**
12:00 PM	0	4	10	43	57	32	4	1	0	0	0	0	0	0	0	0	0	**151**
1:00 PM	1	3	14	50	59	16	9	1	0	0	0	0	0	0	0	0	0	**153**
2:00 PM	4	0	3	41	121	49	10	4	0	0	0	0	0	0	0	0	0	**232**
3:00 PM	2	6	14	44	110	29	7	1	0	0	0	0	0	0	0	0	0	**213**
4:00 PM	0	2	11	65	86	45	7	1	1	0	0	0	0	0	0	0	0	**218**
5:00 PM	0	1	4	47	113	27	7	1	0	0	0	0	0	0	0	0	0	**200**
6:00 PM	0	2	10	42	73	23	4	2	0	0	0	0	0	0	0	0	0	**156**
7:00 PM	1	0	9	23	36	17	3	0	0	0	0	0	0	0	0	0	0	**89**
8:00 PM	1	4	8	39	38	10	3	0	0	0	0	0	0	0	0	0	0	**103**
9:00 PM	0	0	4	18	27	7	1	0	0	0	0	0	0	0	0	0	0	**57**
10:00 PM	0	2	4	9	10	8	0	0	0	0	0	0	0	0	0	0	0	**33**
11:00 PM	0	0	0	6	7	3	1	0	0	0	0	0	0	0	0	0	0	**17**
Total	**15**	**54**	**173**	**709**	**1,229**	**482**	**97**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,777**
Percent	**0.5%**	**1.9%**	**6.2%**	**25.5%**	**44.3%**	**17.4%**	**3.5%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	26.6	mph	Mean (Average) Speed	26.5	mph
85th Percentile	31.1	mph	10 mph Pace	21.3 - 31.3	mph
95th Percentile	34.4	mph	Percent in Pace	72.8	%

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Location: Woodland Ave, B/W Irwin & Bellam
Date Range: 4/24/2019 - 4/30/2019
Site Code: 41

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/24/2019			4/25/2019			4/26/2019			4/27/2019			4/28/2019			4/29/2019			4/30/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	8	14	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	14	22
1:00 AM	9	3	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	3	12
2:00 AM	6	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	11
3:00 AM	6	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	8
4:00 AM	10	9	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	9	19
5:00 AM	39	26	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	26	65
6:00 AM	150	106	256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	106	256
7:00 AM	**333**	**252**	**585**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**333**	**252**	**585**
8:00 AM	273	232	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	232	505
9:00 AM	196	166	362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	196	166	362
10:00 AM	194	157	351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194	157	351
11:00 AM	197	183	380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	183	380
12:00 PM	207	151	358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	207	151	358
1:00 PM	200	153	353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	153	353
2:00 PM	225	**232**	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	225	**232**	457
3:00 PM	248	213	461	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248	213	461
4:00 PM	275	218	**493**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	218	**493**
5:00 PM	**276**	200	476	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**276**	200	476
6:00 PM	202	156	358	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	202	156	358
7:00 PM	180	89	269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	89	269
8:00 PM	135	103	238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	103	238
9:00 PM	94	57	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	57	151
10:00 PM	80	33	113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	33	113
11:00 PM	29	17	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	17	46
Total	3,572	2,777	6,349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,572	2,777	6,349
Percent	56%	44%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56%	44%	-
AM Peak	07:00	07:00	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	07:00	07:00
Vol.	333	252	585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	333	252	585
PM Peak	17:00	14:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	14:00	16:00
Vol.	276	232	493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276	232	493

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com