111 INDEPENDENCE DRIVE PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT
TECHNICAL APPENDICES

STATE CLEARINGHOUSE NO. 2019060108

MENLO PARK, CALIFORNIA

LSA

December 2020

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APPENDIX A

NOTICE OF PREPARATION AND COMMENT LETTERS

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NOTICE OF PREPARATION
ENVIRONMENTAL IMPACT REPORT
111 INDEPENDENCE DRIVE PROJECT
CITY OF MENLO PARK

Date: June 14, 2019

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: Kaitie M. Meador
Senior Planner
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Subject: **Notice of Preparation (NOP) of an Initial Study and Environmental Impact Report for the 111 Independence Drive Project**

Lead Agency: City of Menlo Park, Planning Division

Project Title: 111 Independence Drive Project

Project Area: Bayfront Area, City of Menlo Park

Notice is hereby given that the City of Menlo Park (City) will be the lead agency and will prepare a focused environmental impact report (EIR) for the proposed 111 Independence Drive Project (project). An Initial Study has been prepared along with this Notice of Preparation (NOP), which scopes out several environmental topics from further review. The focused EIR will address potential physical environmental effects of the project that have not been scoped out, as outlined in the California Environmental Quality Act (CEQA). The City is requesting comments on the scope and content of this focused EIR.

A scoping session will be held as part of the Planning Commission meeting on **June 24, 2019,** at **7:00 p.m.** at the Menlo Park City Council Chambers, located at 701 Laurel Street, Menlo Park, CA 94025. The scoping session, which is part of the focused EIR process, is the time when the City solicits input from the public and agencies on specific topics they believe should be addressed in the environmental analysis.

Written comments on the scope of the focused EIR may also be sent to:

Kaitie M. Meador
City of Menlo Park
Community Development Department, Planning Division
701 Laurel Street
Menlo Park, CA 94025
KMMeador@menlopark.org
Phone: 650.330.6731

Comments on the NOP are due no later than the close of the NOP review period (5:00 p.m. on **Monday, July 15, 2019**). However, we would appreciate your response at the earliest possible date. Please send your written comments to Kaitie Meador at the address shown above or by email to KMMeador@menlopark.org with "111 Independence Drive Project EIR" as the subject. Public agencies that provide comments are asked to include a contact person for the agency.

The Initial Study is available online at: https://www.menlopark.org/1572/CEQA-documents. Paper copies are also available for review at:

- Menlo Park Library (800 Alma Street, Menlo Park, CA 94025)
- Belle Haven Branch Library (413 Ivy Drive, Menlo Park, CA 94025)
- Community Development Department, Civic Center (701 Laurel Street, Menlo Park, CA 94025)

PROJECT LOCATION AND EXISTING CONDITIONS: The project site is located north of US Highway 101 (US 101) in the City of Menlo Park, as shown in Figure 1. The site is bounded by Independence Drive and Marsh Road to the north, a single-story commercial and office building and Constitution Drive to the east, a single-story office building to the south, and the Independence Site of the Menlo Gateway project to the west.

The project site is designated Mixed Use Residential within the Bayfront Area on the City's General Plan Land Use Designations Map and is within the Residential-Mixed Use-Bonus Zoning District. The generally-level site is currently developed with an approximately 15,000-square-foot single-story office building, as shown in Figure 2. The existing building was constructed in 1972 and is currently occupied by a commercial business. Vegetation on the project site consists of landscaped areas along the site perimeter fronting Independence Drive. A small portion (approximately 88 square feet) of the Independence Drive right-of-way is located within the project site. A public utility easement, approximately 10 feet in width, runs along the eastern border of the project site.

PROJECT DESCRIPTION: The proposed project would result in the redevelopment of the project site with an approximately 145,350-gross-square-foot, eight story multi-family apartment building with 105 dwelling units and a potential 712-square-foot commercial space, as well as associated open space, circulation and parking, and infrastructure improvements, as shown in Figures 3, 4, and 5. In addition, the proposed project would include dedication of the approximately 88 square feet of Independence Drive that are currently within the project site as well as a public access easement to construct a portion of the public sidewalk within the project site. The project sponsor is currently proposing that a total of 14 residential units (15 percent) be affordable to moderate and low income households (the City's Below Market Rate Housing Program requires 15 percent affordable to low income households). Density above the maximum bonus level residential density and gross floor area would be achieved through the density bonus provision of the City's Below Market Rate Housing Program.

The ground floor would be raised 30 inches above grade to accommodate flood plain design requirements. The proposed building would have a maximum height of 95 feet not including parapet walls, mechanical equipment, and elevator and stair overruns. Height above the maximum average height would also be achieved through the incentives provided in the City's Below Market Rate Housing Program. The parapet walls would vary but generally be 5.5 feet in height around the perimeter of the building and elevator and stair overruns would extend up to 99 feet. An at-grade, three-level, approximately 49,582-square-foot, 115-space parking garage would be located within the proposed building at the northeast corner.

The proposed project would be constructed to complement the adjacent Menlo Gateway buildings on Independence Drive, which have a convex curved façade, with a concave curvature to the façade on the upper floors. The base of the proposed building would be a convex curved façade with metal awnings and amenity space set back from Independence Drive via public open space. A total of approximately 16,729 square feet of open space would be provided at the ground floor and the fourth and eighth floors of the proposed building.

PROJECT APPROVALS: The following City discretionary approvals would be required prior to development at the project site:

- Environmental Review
- Use Permit
- Below Market Rate Housing Agreement
- Architectural Control

There will be a fiscal impact analysis conducted regarding the project. In order to qualify for bonus-level development within the R-MU-B zoning district, the proposed project will also be required to complete an appraisal process to identify the value of the community amenities to be provided in exchange for the opportunity to develop at the bonus level.

RESPONSIBLE AGENCIES: The agencies listed below are expected to review the draft focused EIR to evaluate the proposed project:

- Pacific Gas & Electric
- California Department of Transportation
- California Regional Water Quality Control Board/San Mateo Countywide Water Pollution Prevention Program
- Native American Heritage Commission
- City/County Association of Governments
- Bay Area Air Quality Management District
- San Mateo County Transportation Authority
- San Mateo County Environmental Health Division
- West Bay Sanitary District
- Menlo Park Fire Protection District

INTRODUCTION TO EIR: The project site is within the ConnectMenlo study area. ConnectMenlo, which updated the City's General Plan Land Use and Circulation Elements and rezoned the land in the M-2 Area (now referred to as the Bayfront Area), was approved on November 29, 2016. Because the City's General Plan is a long-range planning document, the ConnectMenlo EIR was prepared as a program EIR, pursuant to CEQA Guidelines Section 15168. Section 15168(d) of the CEQA Guidelines provides information for simplifying the preparation of environmental documents by incorporating by reference analyses and discussions. CEQA Guidelines Section 1512(d) states that where an EIR has been prepared and certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to the effects that were not analyzed as significant in the prior EIR or susceptible to substantial reduction or avoidance.

An Initial Study for the project, which is available for review online, at the City libraries, and at the Community Development Department (as listed above) has been prepared to evaluate the potential environmental impacts of the proposed project and determine what level of additional environmental review is appropriate. In accordance with the requirements outlined in Section 15168 of the CEQA

Guidelines, the Initial Study has been prepared to disclose the relevant impacts and mitigation measures covered in the ConnectMenlo EIR and discuss whether the project is within the parameters of the ConnectMenlo EIR. In addition, as a result of the settlement agreement between the City of Menlo Park and the City of East Palo Alto, certain topics are required to be analyzed. Based on the findings of the Initial Study, a focused EIR will be prepared for impacts that need further discussion and/or mitigation beyond that provided in the ConnectMenlo EIR. The focused EIR for the project will be prepared and processed in accordance with CEQA and the CEQA Guidelines.

PROBABLE ENVIRONMENTAL EFFECTS: Based on the conclusions in the Initial Study, the following topics will be scoped out of the EIR: aesthetics; agriculture and forestry resources; biological resources; cultural resources; energy; geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; public services; recreation; tribal cultural resources; utilities and service systems; and wildfire. Therefore, the focused EIR will analyze whether the proposed project would have a significant environmental impact in the following areas:

- Air Quality;
- Greenhouse Gas Emissions;
- Noise (traffic noise);
- Population and Housing; and
- Transportation

ALTERNATIVES: Based on the significance conclusions determined in the focused EIR, alternatives to the proposed project will be analyzed to reduce identified impacts. Section 15126.6(e) of the CEQA Guidelines requires the evaluation of a No Project Alternative. Other alternatives may be considered during preparation of the EIR and will comply with the CEQA Guidelines, which call for 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.

EIR PROCESS: Following the close of the NOP comment period, a draft focused EIR will be prepared that will consider all NOP comments. In accordance with CEQA Guidelines Section 15105(a), the draft focused EIR will be released for public review and comment for a required 45-day review period. Following the close of the 45-day public review period, the City will prepare a final EIR, which will include responses to all substantive comments received on the draft focused EIR. The draft focused EIR and final EIR will be considered by the Planning Commission in making the decision to certify the EIR and approve or deny the project.

Kaitie M. Meador
City of Menlo Park

June 14, 2019

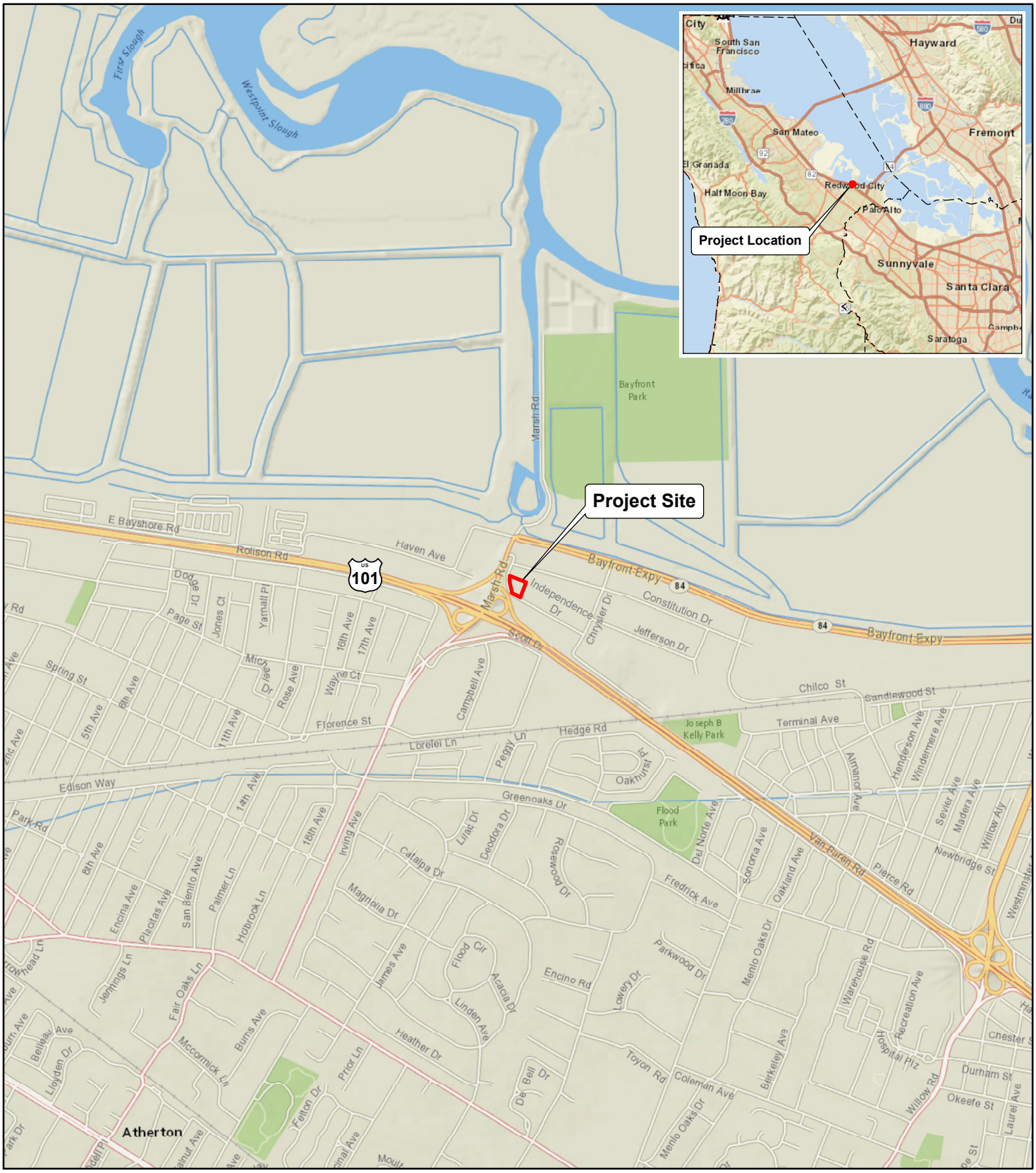


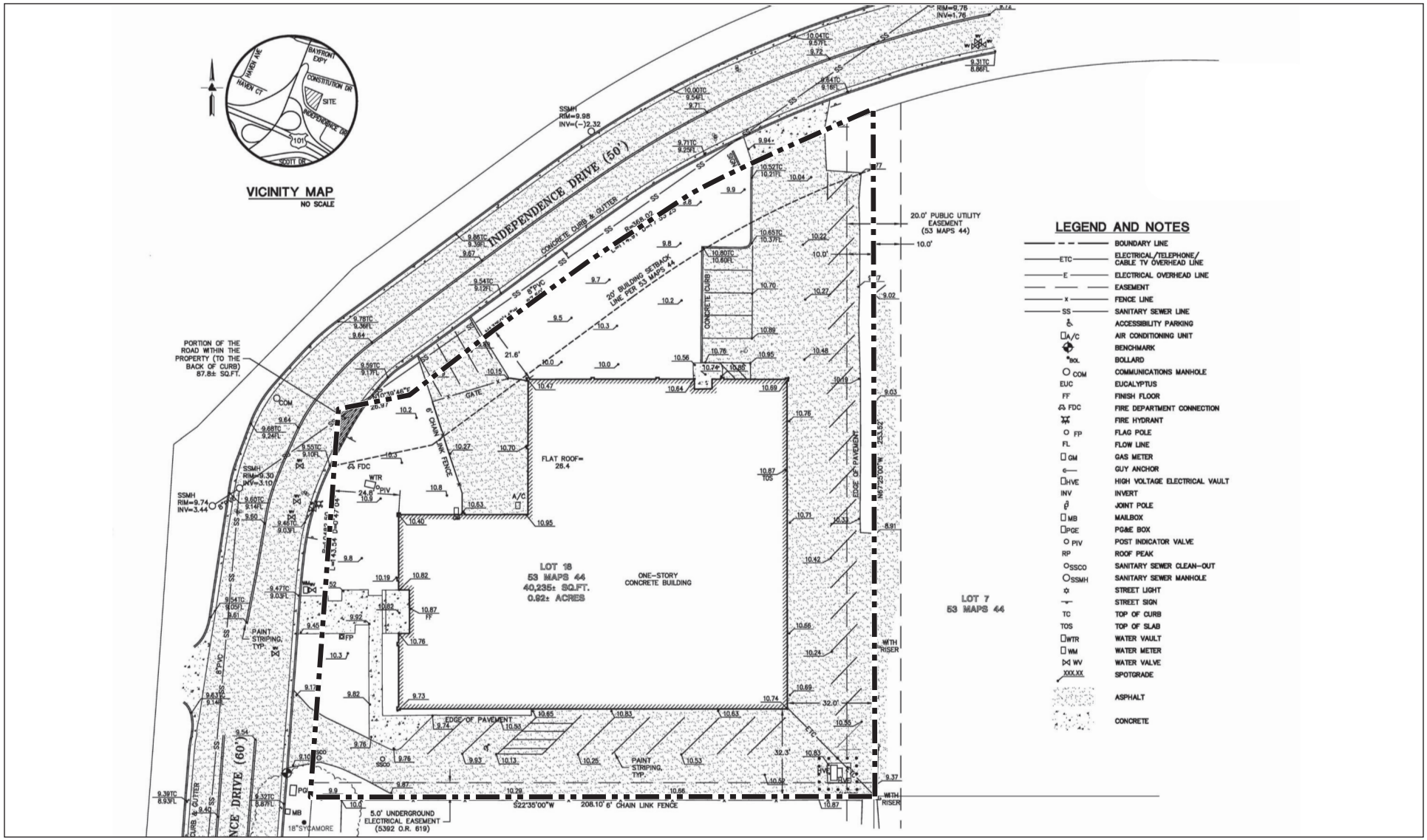
FIGURE 1

111 Independence Drive Project NOP

Project Location and Regional Vicinity Map

SOURCE: National Geographic (c) 2018; Esri World Street Map (c) 2018.

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FIGURE 2

0 32 64
FEET

TRUE NORTH
PROJECT NORTH

Project Boundary

111 Independence Drive Project NOP
Existing Site Conditions

SOURCE: BDE ARCHITECTURE, FEBRUARY 2019.

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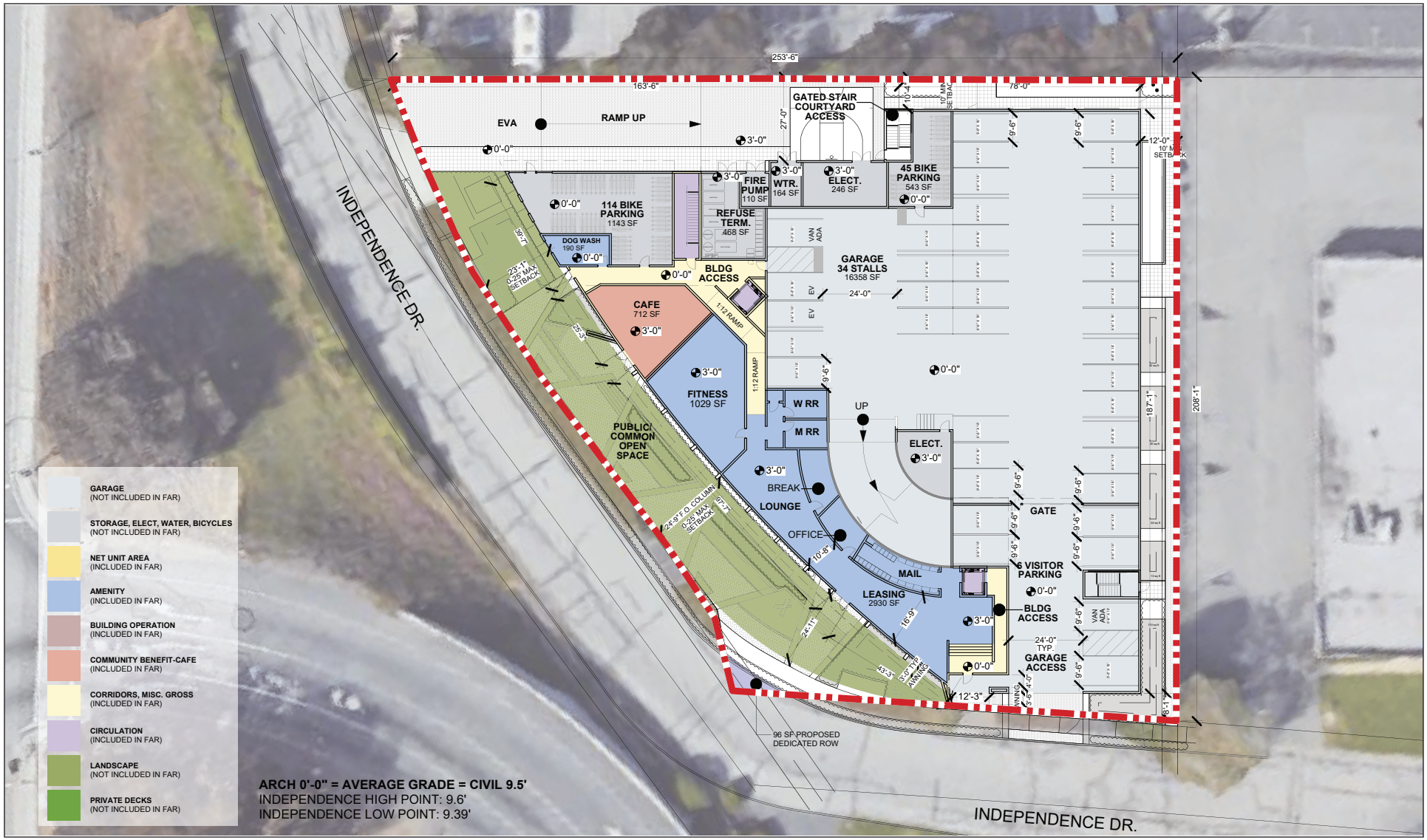


FIGURE 3

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NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project NOP
Conceptual Ground Floor Site Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

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FIGURE 4

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project NOP
Conceptual Fourth Floor Site Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

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FIGURE 5

NOT TO SCALE

SOURCE: BDE ARCHITECTURE, MAY 2019.

111 Independence Drive Project NOP

Conceptual Building Elevations - Southwestern and North

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Meador, Kaitie M

From: Lynne Bramlett <lynne.e.bramlett@gmail.com>
Sent: Monday, July 15, 2019 12:12 PM
To: Meador, Kaitie M
Cc: Lynne Bramlett
Subject: Comment on EIR for 111 Independence Drive
Attachments: Council_GP_SubcommitteesV6.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Kaitie,

I'm writing with input into the NOP for the EIR for 111 Independence Drive. First, the City Council recently held a discussion on a development moratorium that included signficant numbers of people expressing their concerns about the excessive development.

I'm disappointed that it took that kind of public meeting to get attention on the problem of excessive development in District 1. To help, I sent Council the attached letter with ideas. Please attach that letter to my email comments on the 111 Independent Drive project as I believe a complete change needs to take place regarding the entire development-related process. The current one is too focused on serving developers. Instead, the Planning Department needs to better consider the needs of residents. Councilmember Taylor also has said that this particular project is too large for its space. We need a better process for responding to input from our elected officials and also residents living nearby. We shouldn't have to metaphorically shout to try to get someone to pay attention to our concerns.

Some additional comments:

- I want the General Plan Office Cap to be kept in Place. Please add a rolling tally of the development caps to each EIR or NOP. As these are about to be reached in District 1, the public needs the cumulative total listed on each EIR and NOP.

- Any project that will exceed the caps by the time it's approved, such as (I believe) this particular project, should not be proceeding at the bonus-development level.

- This project is much to too large for its space. Approval of the bonus development level should not have been given.The project, next to a new high school, will generate serious traffic congestion and additional air quality, noise, etc. environmental impacts.

- Public Notice Process. Have you reached out to the SUHSD and neighboring businesses to see what they think of this project? If not, please make a concerted effort to do so. Please see my attached letter to Council with suggestions regarding the public Notice process. The list of Responsible Agencies is also very generic. Can you add names? This also needs expanding to include the school districts and neighboring businesses, along with other Stakeholders in District 1.

- Public benefit. The fiscal analysis should be done much earlier in the process and well before a project moves along too far. I believe that I've read that a Cafe has been proposed. If so, I consider that an inadequate public benefit for the amount of harm this project will bring to District 1 -- at the bonus

development level. Please see the attached letter with more specific suggestions regarding calculating the amount of public benefit vs. the harm to the residents.

Lynne Bramlett
lynne.e.bramlett@gmail.com

MEMO

To: City Council

From: Lynne Bramlett

Date: July 5, 2019

Re: Suggestions for City Council District 1 and Districts 2-5 Subcommittees

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I'm writing with suggestions for Council to consider. At your June 11 meeting, the public expressed grave concerns about the cumulative negative impacts of new development, without the corresponding infrastructure. District 1 residents suffer the most severe impacts due to the City's ConnectMenlo-related decisions to maximize new development in District 1.

I applaud Council's sincere desire to tackle these serious problems. However, much work will be needed and I and other residents want to help. The problems are so serious and so urgent that we cannot wait for lengthy studies and/or Staff to have time to work on solutions. Plus, it's reasonable to ask if it would not be better to have a "fresh focus" via resident-led working groups that research and propose solutions to specific topics. Waiting to take action, especially in District 1, would perpetuate what has become a toxic *status quo* that appears to value the revenue stream from development, and the interests of large property owners, over the quality of life for residents.

District 1-Subcommittee Proposed Ideas

1. **Discuss and Pass a Resolution to maintain the current Office Space development caps.** As I understand it, the caps are on the bonus-level development options in the M-2 and downtown-specific plan. The bonus levels can more than double the overall size of a project allowed under the base-level only. This represents a significant financial windfall to the property owners, even after paying for a bonus-level amenity. Already, there are multiple projects in the pipeline that will exceed the development caps. Yet these projects are moving forward without any apparent plans to reduce the project size. This builds too much momentum, making it difficult later to stop or adjust the project. It also suggests that the developers believe that Council will increase development caps or possibly amend the General Plan to allow the projects. Have private assurances already been given?
2. **Add a Growth Management Element to the General Plan.** Although not a state mandated General Plan element, a Growth Management Element would mandate that growth and development be based upon the City's ability to provide an adequate circulation system. A Growth Management Element establishes policies and standards for traffic levels of service and performance standards for police, fire, emergency vehicles, sanitary facilities, water, road infrastructure, etc. to ensure generally that growth takes place in a manner that will ensure protection of the health, safety and welfare of both existing and future residents.

   Other cities facing similar challenges of rapid growth, without the necessary infrastructure, have adopted a Growth Management Element. These cities include: Loma Linda, Pleasant Hill, El Cerrito, and Mission Viejo. Contra Costa County also requires a Growth Management Element.

   Effective growth management would also establish parameters for periodically monitoring the impacts that growth has on the community, and also define the methods by which impacts are addressed.

3. **Conduct an Analysis of the General Plan's Land Use and Circulation Elements Goals, Policies and Programs.** Determine if any statements need clarifying, revising, updating or removing. Also review the adequacy of the measurement and reporting system for each. A parallel task would be to determine if the ConnectMenlo Guiding Principles (values statements) have actually become embedded into the Goals, Policies and Programs. (See next suggestion). Develop recommendations based on municipal best practices and MP's current situation.

4. **Elevate the Role of the Guiding Principles to Guide Development in Menlo Park.** The Guiding Principles represent the public's most current statement of Values. The public trusted the Guiding Principles, and Council's assurances that they would be followed. Unfortunately, they lack shared definitions and metrics, and some statements are overly broad. It's time to clarify, as necessary, the statements and to add metrics and a quarterly reporting system for each. Right now, the Guiding Principles are more platitudes than value-statements that actually guide land-use decisions in Menlo Park. The Guiding Principles need to be followed and more clout in the form of a Council Resolution that would include Council's expectations for metrics and a quarterly reporting system.

5. **Conduct an Analysis of the General Plan's zoning ordinances.** Some topics to consider: Is the zoning equitable across all parts of Menlo Park? Where does the zoning need changing to increase housing, especially affordable housing? Or where does it need changing to reduce "Ghost" ownership by corporate interests? Should the bonus-level options be rescinded or scaled back. Is the current bonus policy too generous towards property owners at the expense of the public's quality of life?

6. **Conduct an Analysis of the City of Menlo Park's General Plan compared to the criteria included in State law**. Also evaluate the degree to which the Menlo Park General Plan complies with the State's Guidelines for General Plans. While the Statute of limitations has more than passed for any legal challenges, the review would be helpful in pinpointing opportunities to improve the current General Plan.

7. **Conduct an Analysis of the City's Public Noticing Policy for Development Permit Applications Reviewed by the Planning Commission and/or City Council**. I would add notices in Spanish (not just the one sentence that I'm seeing in the *Daily Post* notices) for all developments in District 1. As the *Daily Post* is not widely available in District 1, also post notices in the *Almana*c. Also use the City's communication methods to post notices of EIRs. For example, the Belle Haven newsletter could include EIR notices and these also could be posted on social media, such as NextDoor. The City's website could include a way to sign up for EIR-related notices, via a link at the Notify Me, page. Developers could also play a stronger role in the process as per Ann Arbor's Citizen Participation Ordinance Guide for PUDs, Planned Projects, Rezonings & Major Site Plans. Menlo Park could adopt a similar approach that puts more of the expectations, in specific and measurable terms, on the developers.

   The EIR-related notices (and staff reports) also sometimes use names for the projects that the public may not recognize. Instead, the projects should be described so as to alert the maximum number of residents about the proposed development.

   Also review the City's website for opportunities**.** The Public Notices page has a link to a Development Notices page that contains little information. The Notice of Application Submittals sub link contained only one link to one project. There are other opportunities.

Districts 2-5-Subcommittee Led Proposed Ideas

1. **Review the General Plan's Bonus-Level Development Process. First**, the current "value analysis" for considering bonus-level development is very focused on the amount of revenue generated for the City from the grant of a bonus-level development. This analysis needs to be expanded to quantify ALL the benefits and liabilities from the proposed granting of a Public Benefit Bonus.

   Second, it is important *early in the EIR process* to determine the economic value that the developer receives from the Public Benefit Bonus. The Fiscal Impact Analysis should be conducted at the beginning stage of the EIR process. Waiting until later in the cycle gives a project too much momentum. As you likely know, the residents in District 1 are mostly still waiting for amenities they thought they would get years ago. There is too much wiggle-room" in this process. Developers need to be held accountable and the EIR documents need to more explicitly protect the residents' interests.

   Third, there needs to be an explicit consideration of the negative cumulative impacts of the proposed development on the residents' quality of life.

   Fourth, the economic value (in hard numbers) to the developer should then be tangibly tied to a concrete public amenity selected via a public process from a pre-determined list. The public amenity should represent a concrete and tangible public benefit that will help to ameliorate the detriment caused by the development. The public amenity should also be located near the residents most impacted by a particular development. A cash payment to the City, which is apparently commonly done, should not be allowed except for very rare circumstances.

   Finally, a Public Benefit Bonus should only be granted when the total value to the City minus the negative impact on the residents' quality of life is comparable to the economic benefit received by the developer.

2. **Develop a well-defined outcome for public benefits/Community Amenities.** The lack of a well-defined outcome was detailed in Staff Report #15-063. The R-MU Residential zoning incudes information about bonus-level amenities, but without enough specifics. Separately, I've also seen a list of District 1 desired amenities but this should be readily available in a more public spot. These also need price tags and a process. The recent notice of preparation of an EIR for a project at 162-164 Jefferson noted that the "project is proposing bonus-level development, although the proposed community amenity has not yet been identified." Instead, the amenity should be agreed-upon *before* a major development project has too much momentum.

3. **Review the City's Development-related policies**. Only three are posted as policies at the Planning Division site: 1) M-2 Implementation Policy, 2) Parking Reduction Policy and 3) Public Noticing Policy. Are more policies needed to address current problems?

4. **Expand the City's General Plan Annual Report to the State on the Status of our General Plan Implementation.** Currently, ours focused on providing a Housing Element update. While not required, a report that included an update across all adopted elements would give Council more information for annual planning purposes. Please see the example from the City of Escondido and the State's requirements.

5. **Conduct an Analysis of the ConnectMenlo EIR-Related Mitigation Monitoring and Reporting Program Measures.** The program-level EIR was detailed in Resolution 6356. Individual major developments also have EIRs that likely also include mitigation measures. The status of these mitigations needs more transparency and perhaps also accountability and oversight. Conduct annual progress reviews to ensure that all required mitigation measures are implemented and completed in a satisfactory manner before and during project construction and operation. Require Annual reports to update the public on the mitigation. Identify ways to increase accountability, oversight and transparency, as needed.

   The City could also start to report yearly "Mitigation" status via using the yearly Annual Report on the Status of the General Plan required by the State.

6. **Discuss Staff Priorities Pertaining to Development vs. Residents' Quality of Life.** The excessive Development has delivered value to property owners and the Staff Organization, but little (if any) value to residents. For projects to be considered successful, all main parties must see value. Increased development supports specific Staff positions and it provides revenue to support the overall Staff Organization. The 2019 Budget document states that "Personnel costs…represent 65 percent of total General Fund expenditures and total $45.30 million for fiscal year 2019-20, up 11.6 percent when compared to the amended budget for fiscal year 2018-19" (32). The management-level Staff may be spending more time with developers and major property owners than residents, which creates an imbalance and an opportunity for disproportionate influence. Openly discuss this topic towards the broader goal of establishing a more transparent and resident-focused culture in Menlo Park. The underway Community Development Department Review might also identify possibly solutions.

7. **Conduct an Analysis of the EIR process and outcomes to identify ways both could improve to better balance the needs of residents with the goals of Staff/developers.** Some initial ideas include posting a chart with the key EIR milestone phases. Then label each EIR with where it is in the EIR process. The EIR documents are daunting, so ways to simplify the language and use more graphs and charts might help. It's difficult to catch any flawed premises and/or serious environmental concerns that have been brushed over or dismissed. The process also seems too weighted to agree to a development, despite serious environmental impacts. Then the tracking of the EIR mitigations needs a more transparent process with accountability. Many individuals and groups have taken considerable time to write thoughtful feedback on an EIR, but their input does not seem to have been taken into account. Instead, the revenue stream from new development seems more important. Having more EIR "checkpoint" stages might help along with resident-focused priorities for the Staff.

Projects that Council Could Delegate to City Advisory Committees/Commissions

1. **Conduct an Analysis of Corporate Ownership of Housing in Menlo Park.** Determine the extent of "Ghost" properties and properties typically rented out for short-term rentals**.** Based on the findings, propose recommendations to Council that could include zoning changes. The Housing Commission could be asked to lead this effort, resulting in a report to Council.

2. **Implement Training on the new Environmental Justice General Plan Requirements.** Senate Bill 1000 took effect in 2018. When the City concurrently updates 2 or more elements of its General Plan, SB 1000 requirements start. The City could start with training sessions on the bill's requirements with a broad invitation list. The Environmental Quality Commission, in conjunction with the Planning Commission, could lead this effort.

3. **Establish an annual reporting process for Development agreements/Term Sheets to increase transparency.** For each, include the negotiated public benefit(s), in-lieu fees, proposed housing, on-going yearly revenue streams and anything else that was a material aspect of the agreement. Changes to the initial agreement also need a reporting process, so the public is able to track any changes. Status reports for each major one could be available via the City's website. The Finance & Audit Committee could be asked to conduct an analysis and then make recommendations to Council.
4. **Review the City's Annual Report on the status of the transportation impact, storm drainage, recreation in-lieu, below market rate housing in-lieu, and building construction road impact fees collected yearly.** Consider ways to improve current report format so that it makes tracking the financials easier for the public. The Finance & Audit Committee could be asked to review the report format and make recommendations to Council.
5. **Review current business taxes to determine if these are adequate and fair.** The FAC could be asked to conduct an analysis and to make recommendations for Council to Consider.
6. **Ask the Planning Commission to discuss ways its role could evolve to include a more proactive approach to planning.**
7. **Review the City's Parks & Recreation-related public-private partnerships.** Determine if each arrangement represent fair value to the public. The Parks & Recreation Commission could review each and prepare a report on the topic with recommendations to Council.
8. **Review the Benefits of Transitioning to a two-year budget developed in the cycle of a five-year financial plan.** A two-year budget process allows for a more stringent approach to analyzing data, tracking trends, and potential problems, and calling for corrective budget action much earlier. It would give more time for community engagement, and the Finance staff more time for other financial-transparency-related projects. The City of Irvine recently transitioned to a two-year budget cycle, and I recently read that Redwood City plans to do so too. The FAC could prepare a report on this topic with recommendations to Council.

General Ways to Reduce Costs to Reduce Need for Development Money

1. **Conduct a Staff Organization size & efficiency review**. Several have suggested that the Staff organization is large when compared with other cities our size. An organizational review, by an outside organizational consultant reporting directly to Council, would likely generate recommendations that would allow for greater efficiencies. Over time, the Staff Organization could then be reduced via attrition – not layoffs. The ConnectMenlo zoning changes were explicitly designed to maximize income coming from new development. Reducing the size of the Staff organization would reduce the need for new development as an economic stream to pay for staff salaries, benefits and pensions. The Development Agreements also bring in cash that goes into funds that might be used to pay for Capital Improvement Projects that Staff values, but that are not necessarily valued by residents. Less development money flowing into/out of Menlo Park would help to turn the City into more of a resident-focused City.
2. **Pay down long-term debt and adopt a pay-as-you-go approach to large Capital projects.** Ask residents what services they don't want and would like to cut for more ideas. Our long-term debt payments represent a significant amount of money. We are also still paying for facilities developed years ago.

Meador, Kaitie M

From: Latoya Dunlap <latoyad03@gmail.com>
Sent: Thursday, July 11, 2019 1:55 PM
To: Meador, Kaitie M
Subject: Housing proposal- NO THANKS

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

This traffic is already a nightmare. Please don't even consider this before what wrong it's fixed. You can't keep adding issues on top of issues when there are already so many that need to be fixed.

Thank you,
Latoya
Belle Haven Resident

EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

Via Electronic Mail

July 12, 2019

Kaitie Meador
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025
kmmeador@menlopark.org

Re: Earthjustice Comments on the Notice of Preparation of a Draft Environmental Impact Report for the 111 Independence Drive Development Project

Earthjustice appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report ("DEIR") for the 111 Independence Drive Development Project ("Project"), which contemplates the development of an eight story multi-family apartment building with 105 dwelling units and a potential 712-square-foot commercial space. Our initial comments focus on the importance of incorporating building electrification requirements into the Project. The transition from gas to electric buildings is critical to reaching a zero emissions future and will not occur at the scale or timing needed absent decisive City leadership. Consistent with California Environmental Quality Act ("CEQA") requirements to adopt all feasible mitigation to reduce significant greenhouse gas ("GHG"), energy and utility impacts, building electrification is essential mitigation to reduce Project impacts and take meaningful action to address the climate crisis. Building electrification will also provide economic, safety, and air quality benefits for the City. We therefore urge the City to require all-electric construction as feasible mitigation in the DEIR for the Project.

I. The Project Will Have Significant GHG Impacts.

CEQA requires a DEIR identify all the significant impacts of a proposed project, including from the project's GHG emissions.[1] To determine the significance of the Plan's GHG impacts, the City should apply a net-zero emissions threshold. A net-zero threshold is also consistent with the severity of the climate crisis and the recognition that any increase in GHG emissions exacerbates the cumulative impacts of climate.

In determining the significance of project impacts, the City "must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." *Cleveland National Forest Foundation v. San Diego Assn. of Gov'ts* (2017) 3 Cal.5th 497, 519. Non-zero numeric thresholds, such as the 1,100 MT GHG significance threshold proposed by the Bay Area Air Quality Management District ("BAAQMD") in 2009 are unlikely to survive legal scrutiny. The BAAQMD numeric threshold was derived from Assembly Bill ("AB") 32's 2020

[1] Pub. Res. Code § 21083.05; CEQA Guidelines § 15064.4.

GHG reduction targets and does not reflect Senate Bill 32's requirement to reduce GHGs to 40 percent below 1990 levels by 2030 or our increased understanding of the severity of climate impacts California is and will experience.[2] While useful when first recommended ten years ago, it has not kept in step with scientific knowledge and regulatory developments and is no longer supported by substantial evidence.

Alternative approaches to determining the significance of Project GHG impacts, such as using a comparison against "business-as-usual" emissions or a per capita emissions metric, may not withstand legal scrutiny and should not be used to evaluate the Project's emissions in the DEIR. In *Center for Biological Diversity v. Cal. Dept of Fish & Wildlife* (2015) 62 Cal.4th 204, the California Supreme Court held that determining the significance of project GHG impacts by comparing project emissions with emissions under a business-as-usual scenario derived from statewide emissions reduction goals under AB 32 lacked substantial evidence. For similar reasons, use of statewide per capita emissions metrics to determine the significance of project emissions has also been rejected for the purpose of determining project GHG impacts under CEQA. As the court held in *Golden Door Properties LLC*, because "using a statewide criterion requires substantial evidence and reasoned explanation to close the analytical gap left by the assumption that the 'level of effort required in one [statewide] context . . . will suffice in the other, a specific land use development.'" *Golden Door Properties LLC v. County of San Diego* (2018) 27 Cal.App.5th 892, 904 (quoting *Center for Biological Diversity*, 62 Cal.4th at 227). While use of a statewide per capita metric to determine the significance of GHG impacts may be useful for a General Plan, which examines collective community emissions of existing and proposed new development, it is not appropriate for projects that only govern new development. Accordingly, the City should apply a net-zero emissions GHG threshold to ensure a legally defensible EIR. Because the Project will result in an increase in GHG emissions, the City should consider its GHG impacts significant.

II. The Project Will Have Significant Energy Impacts if it Requires Gas Connections.

An EIR must also evaluate project energy use to avoid "wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources."[3] The failure to evaluate a project's energy impacts renders an EIR inadequate.[4] Notably, an energy impact analysis demands more than mere compliance with Title 24 Building Standards and implementation of GHG mitigation measures.[5] Among its provisions, Appendix F of the CEQA Guidelines specifies that a project should include "total energy requirements of the project by fuel type and end use."[6] Accordingly, the DEIR should quantify the project's expected energy consumption by fuel type, keeping in mind that a key purpose of this evaluation is "decreasing reliance on fossil fuels, such as coal, natural gas and oil."[7]

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[2] *See* BAAQMD, *CEQA Guidelines Update, Proposed Thresholds of Significance* at 10-22 (Dec 7, 2009), http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/proposed-thresholds-of-significance-dec-7-09.pdf?la=en (explaining methodology for project-level GHG threshold).
[3] CEQA Guidelines § 15126.2(b).
[4] *See Ukiah Citizens for Safety First v. City of Ukiah*, 248 Cal.App.4th 256 (2016); *see also California Clean Energy Committee v. City of Woodland*, 225 Cal.App.4th 173 (2014).
[5] *See* CEQA Guidelines, Appendix F, Sec. II; *see also Ukiah Citizens* 248 at 264; *see also California Clean Energy Committee* 225 at 207, fn. 6.
[6] CEQA Guidelines, Appendix F, Sec. II.
[7] CEQA Guidelines, Appendix F, Sec. I.

Another goal of the energy impacts analysis is to "increas[e] reliance on renewable energy resources" and to "avoid[] or reduc[e] inefficient, wasteful and unnecessary consumption of energy."[8] Building electrification achieves both of these goals. First, all-electric homes allow project energy needs to be supplied entirely by an increasingly renewable and decarbonized grid, which under SB 100, will be carbon-free by 2045. In contrast, gas appliances maintain reliance on fossil fuels. Second, electric heat pump are two to over four times more efficient than gas appliances.[9] Indeed, as the California Energy Commission has concluded, "electrification of space and water heating with highly efficient technologies…will be key to reducing emissions from buildings."[10] The high efficiency of advanced electric appliances mean that electrification will reduce Project emissions *today*, and the climate benefits of electrification will only improve as the grid gets cleaner. Accordingly, the DEIR should evaluate use of high performing electric technologies in the market today to replace all gas appliances in the Project's residential and commercial buildings, including heat pump water heaters, heat pump space heaters, heat pump clothes dryers, induction stoves, and convection ovens.

Use of renewable natural gas is also not a meaningful substitute for building electrification. Additionally, building electrification is both feasible and more efficient than natural gas. A study conducted by Energy and Environmental Economics, Inc. ("E3") determined through testing 10 different scenarios that the scenario with high electrification of buildings has both low cost and low technology risk compared to alternatives, one of those alternatives being renewable natural gas.[11] The study also concluded that even with extensive natural gas efficiency in buildings, without substantial building electrification, California would be forced to import "out-of-state, zero-carbon, sustainable biofuels, hydrogen fuel or climate-neutral synthetic methane to meet its long-term climate goals."[12] With building electrification enabling increased efficiency, use of renewable resources, and avoiding new fossil fuel commitments, reliance on gas as an energy source for the Project source should be considered a significant energy impact.

III. The Project Will Have Significant Utility Impacts if it Requires Gas Connections.

Recent updates to the CEQA Guidelines added language regarding a project's utility impacts.[13] This new language added to the Utilities and Service Systems section now directs agencies to assess whether electric power and/or natural gas use will have significant environmental effects.[14] New projects lock in energy system infrastructure for decades.[15] As a result, if new projects are continuously powered by carbon-emitting energy sources such as natural gas, "it will be that much more difficult for California to meet its GHG emission

[8] *Id*.
[9] United States Department of Energy, Heat Pump Systems | Department Of Energy, 2018. Energy.Gov. Accessed May 10 2018. https://www.energy.gov/energysaver/heat-and-cool/heat-pump-systems.
[10] California Energy Commission, 2018 Integrated Energy Policy Report, Pub. No. CEC 100-2018-001-V2-CMF, Feb. 2019 at 22.
[11] California Energy Commission, *Deep Decarbonization in a High Renewables Future*, Pub. No. CEC-500-2018-012, June 2018 at iii.
[12] California Energy Commission, *Deep Decarbonization in a High Renewables Future*, Pub. No. CEC-500-2018-012, June 2018 at 33.
[13] CEQA Guidelines, Appendix G, Sec. XIX.
[14] *See Id*.
[15] California Energy Commission, *2018 Integrated Energy Policy Report*, Pub. No. CEC 100-2018-001-V2-CMF, Feb. 2019 at 26.

reduction goals."[16] As the California Energy Commission ("CEC") determined in its 2018 Integrated Energy Policy Report ("IEPR") Update:

> New construction projects, retrofitting existing buildings, and replacing appliances and other energy-consuming equipment essentially lock in energy system infrastructure for many years. As a result, each new opportunity for truly impactful investment in energy efficiency and fuel choice is precious. If the decisions made for new buildings result in new and continued fossil fuel use, it will be that much more difficult for California to meet its GHG emission reduction goals. Parties planning new construction have the opportunity instead to lock in a zero- or low-carbon emission outcome that will persist for decades.[17]

By locking in new fossil fuel infrastructure, any expansion of gas utility system will have a significant impact on the environment.

IV. Building Electrification is Feasible and Effective Mitigation to Reduce Project GHG and Energy Impacts.

A lead agency may not lawfully approve a Project where "there are feasible alternatives or feasible mitigation measures available which would substantially lessen [its] significant environmental effects."[18] Eliminating natural gas use in new buildings is feasible mitigation that will substantially lessen the Project's GHG and energy impacts. Indeed, building electrification is one of the fastest and most cost-effective ways to achieve the transition to net-zero emissions. In the 2018 IEPR Update, the CEC recognized the "growing consensus that building electrification is the most viable and predictable path to zero-emission buildings . . . due to the availability of off-the-shelf, highly efficient electric technologies (such as heat pumps) and the continued reduction of emission intensities in the electricity sector."[19]

All-electric developments are being constructed for a range of building types pursuing low or zero emissions objectives and are a feasible mitigation requirement for new development under the Project. Sacramento's Municipal Utility District has partnered with homebuilders to construct entire neighborhoods that are all-electric, with 400 all-electric homes planned in the next two years alone.[20] Some California developers now exclusively build all-electric homes, and have already deployed a range of affordable, luxury, single- and multi-family housing units all across the state.[21] Given that other entities are now requiring all-electric construction, there is no reason for the City not to also do so. For example, the University of California announced in August of 2018 that "[n]o new UC buildings or major renovations after June 2019, except in

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[16] *Id.*
[17] CEC, *2018 Integrated Energy Policy Report Update, Vol. II* at 18 (Jan. 2019), https://efiling.energy.ca.gov/getdocument.aspx?tn=226392
[18] Pub. Res. Code § 21002.
[19] CEC, *2018 Integrated Energy Policy Report Update, Vol. II* at 20 (Jan. 2019), https://efiling.energy.ca.gov/getdocument.aspx?tn=226392.
[20] Justin Gerdes, *All-Electric Homes Are Becoming the Default for New Residential Construction in Sacramento*, Greentech Media (Nov. 13, 2018), https://www.greentechmedia.com/articles/read/all-electric-homes-are-becoming-the-default-for-new-residential-constructio#gs.VYzCCMQ.
[21] *See* Redwood Energy, *Development Projects (A Small Sample)*, https://www.redwoodenergy.tech/development-projects/.

special circumstances, will use on-site fossil fuel combustion, such as natural gas, for space and water heating."[22]

Similarly, in its Downtown Specific Plan, the City of Hayward required for multifamily residential developments that "[a]ll buildings will be all electric, meaning that electricity is the only permanent source of energy for water-heating, mechanical and heating, ventilation, and air conditioning (HVAC) (i.e., space-heating and space cooling), cooking, and clothes-drying and there is no gas meter connection."[23] The natural next step is to extend such a requirement to commercial developments, which can also be feasibly electrified.[24]

V. There Are Multiple Co-Benefits to Achieving Zero Emission Buildings through Electrification.

Beyond achieving the energy and GHG emissions reductions essential for preventing climate breakdown, electrification of new buildings will produce a range of important co-benefits for the economic well-being, safety, and health of the community. Building electrification offers the potential to lower energy bills, reduce the cost of new construction, improve air quality, public safety, and climate resiliency, as well as create new jobs. Far from being a barrier to new housing, all-electric new construction can enable greater opportunities for affordable housing construction by reducing costs and streamlining mitigation requirements. For disadvantaged populations that pay a disproportionate amount of their income to energy costs, and who are more likely to suffer from asthma due to poor indoor air quality, zero emission homes are an important opportunity to deliver social equity.[25]

A. Lowering Energy Bills and Cost of New Construction

All-electric buildings can lower utility bills for tenants, reduce the cost of construction of new housing in the City, and shield customers from the volatile and increasing costs of gas. A recent report, *Decarbonization of Heating Energy Use in California Buildings*, by Synapse Energy Economics found that electrification could lower utility bills by up to $800 annually and lower the cost of new construction in Los Angeles by roughly $1,500 to $6,000.[26] Other analysis has found that new homes and apartment buildings can cost between $1,000 and $18,000 less to build if they are not connected to gas distribution pipelines.[27] The UC has carefully examined feasibility and costs of all-electric buildings in the report: UC Carbon Neutral Buildings Cost Study. The first key insight offered is that "[a]ll-electric buildings are comparable or slightly less

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[22] University of California, *UC sets higher standards, greater goals for sustainability* (Sept. 4, 2018), https://www.universityofcalifornia.edu/press-room/uc-sets-higher-standards-greater-goals-sustainability.
[23] City of Hayward, *Hayward Downtown Specific Plan DEIR, Greenhouse Gas Emissions Chapter* at 4.6-40 (Jan. 7, 2019), https://www.hayward-ca.gov/sites/default/files/documents/dtsp-eir-greenhouse-gas-emissions.pdf.
[24] *See, e.g.*, Redwood Energy, *Zero Carbon Commercial Construction: An Electrification Guide for Large Commercial Buildings and Campuses* (2019), https://drive.google.com/file/d/1L5IBsSmT-p8he6dmrW565l6ZB_dkXya9/view.
[25] Kelly Vaugh, *Social Equity, Affordable Housing, and the Net-Zero Energy Opportunity*, Rocky Mountain Institute (May 9, 2018), https://rmi.org/social-equity-affordable-housing-and-the-net-zero-energy-opportunity/.
[26] Synapse Energy Economics, *Decarbonization of Heating Energy Use in California Buildings* at 2, 39 (Oct. 2018), http://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf.
[27] Stone Energy Associates, *Accounting for Cost of Gas Infrastructure*, CEC Docket 17-BTSD-01 (May 4, 2017), https://efiling.energy.ca.gov/GetDocument.aspx?tn=217420&DocumentContentId=26959.

expensive tha[n] gas + electric buildings from a 20-year Life Cycle Cost perspective."[28] The most significant cost savings were found for residential buildings, where the average Life Cycle Cost for all-electric was $5.28/sf lower compared to gas + electric options.[29]

B. A Safer Community

Recent events from Aliso Canyon, San Bruno, and the state of Massachusetts add to the devastating record of hazardous natural gas infrastructure. Between 2015 and 2017, natural gas pipeline explosions and incidents in the country claimed on average 15 fatalities, 57 injuries, and $316,647,907 in property damage *annually*.[30] As climate impacts intensify, the escalating risks of aging natural gas infrastructure will outpace the industry's rate of pipeline replacement. Sea level rise, which promises to be one of the many significant climate impacts affecting the region, especially amplifies the risks of natural gas.[31]

Methane leakage, a pervasive problem with natural gas infrastructure, can be particularly hazardous for families living in earthquake and fire-prone areas since leaking gas exacerbates fires after earthquakes. The California Seismic Safety Commission estimates that 20 to 50 percent of total post-earthquake fires are fires related to gas leaks.[32] Beginning to electrify entire communities is a key precautionary strategy to mitigate the growing risks of California's massive gas system.

C. Improved Air Quality

Gas appliances in buildings make up a quarter of California's nitrogen oxide (NO_x) emissions from natural gas. NO_x is a precursor to ozone and a key pollutant to curb in order to comply with state and federal ambient air quality standards. Electrifying buildings will help the City to reduce NO_x and ground level ozone, improving *outdoor* air quality and benefiting public health. Electrification of fossil fuel appliances will also immediately improve *indoor* air quality and health. On average, Californians spend 68 percent of their time indoors, making indoor air quality a key determinant of human health.[33] The combustion of gas in household appliances produces harmful indoor air pollution, specifically nitrogen dioxide, carbon monoxide, nitric

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[28] Point Energy Innovations, *UC Carbon Neutral Buildings Cost Study* at 3 (June 2017), https://www.ucop.edu/sustainability/_files/Carbon%20Neutral%20New%20Building%20Cost%20Study%20FinalReport.pdf.

[29] *Id.*

[30] Pipeline and Hazardous Materials Safety Administration, *Pipeline Incident 20 Year Trends* (Nov. 2018), https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends.

[31] Radke *et al.*, *Assessment of California's Natural Gas Pipeline Vulnerability to Climate Change*, University of California, Berkeley (2016), https://www.energy.ca.gov/2017publications/CEC-500-2017-008/CEC-500-2017-008.pdf.

[32] California Seismic Safety Commission, *Improving Natural Gas Safety in Earthquakes* at 1 (adopted July 11, 2002), http://ssc.ca.gov/forms_pubs/cssc_2002-03_natural_gas_safety.pdf.

[33] Klepeis *et al.*, *The National Human Activity Pattern Survey (NHAPS): A Resource for Assessing Exposure to Environmental Pollutants*, J. EXPO. ANAL. ENVIRON. EPIDEMIOL., Vol. 11(3), 231-52 (2001).

oxide, formaldehyde, acetaldehyde, and ultrafine particles.[34] The California Air Resources Board warns that "cooking emissions, especially from gas stoves, have been associated with increased respiratory disease."[35] Young children and people with asthma are especially vulnerable to indoor air pollution.

D. Pathways to Good, Green Jobs

Electrification of buildings will enable local workforce development for jobs that will be critical in California's broader energy transition. Partnering with local organizations and community colleges, the City can foster training and pipeline programs for new jobs in construction, HVAC installation, electrical work, energy efficiency and load management services, as well as manufacturing.

These jobs will rapidly grow in demand as local governments across the state look to rapidly address the emissions from their building sector. In Sacramento Municipal Utility District territory, where all-electric buildings are quickly becoming the default for new developments, demand for specialized plumbers and HVAC technicians is expected to grow enormously. The region expects to install more than 300,000 heat pump space heaters in the next 15 to 20 years.[36]

The next one to five years will be a critical window of opportunity for the City to jump-start this transition away from gas to clean energy buildings. CEQA is an essential vehicle to take all feasible action to reduce GHGs and limit further expansion of gas infrastructure and we urge incorporation of all-electric building design into the Project.

Please contact Matt Vespa at mvespa@earthjustice.org, Sasan Saadat at ssaadat@earthjustice.org with any questions or concerns, and please include each of us in future notifications on the Projec's development.

Sincerely,

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[34] *See, e.g.*, Logue *et al.*, *Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California*, ENVIRON. HEALTH PERSP., Vol. 122(1), 43-50 (2014); Victoria Klug & Brett Singer, *Cooking Appliance Use in California Homes—Data Collected from a Web-based Survey*, LAWRENCE BERKELEY NATIONAL LABORATORY (Aug. 2011); John Manuel, *A Healthy Home Environment?* ENVIRON. HEALTH PERSP., Vol. 107(7), 352-57 (1999); Mullen *et al.*, *Impact of Natural Gas Appliances on Pollutant Levels in California Homes*, LAWRENCE BERKELEY NATIONAL LABORATORY (2012).

[35] California Air Resources Board, *Combustion Pollutants* (last reviewed Jan. 19, 2017), https://www.arb.ca.gov/research/indoor/combustion.htm.

[36] Justin Gerdes, *Experts Discuss the Biggest Barriers Holding Back Building Electrification*, Greentech Media (Sept. 19. 2018), https://www.greentechmedia.com/articles/read/here-are-some-of-the-biggest-barriers-holding-back-building-electrification#gs.fBEBKJy2.

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From: Meador, Kaitie M
To: Theresa Wallace
Cc: Matthew Wiswell; Perata, Kyle T; Prince, Leigh
Subject: RE: 111 Independence - NOP Comments
Date: Wednesday, July 24, 2019 9:54:42 AM
Attachments: CMP_Email_Logo_100dpi_05d92d5b-e8e3-498f-93a6-d0da509bd602111111111.png

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Hi Theresa,

During the June 24th Planning Commission meeting there was also a public comment for the project at 115 Independence that was related to the scoping session for this project. I've copies the comment from the Planning Commission minutes below. Can you please also include this in the NOP comments.

> Pamela Jones said for the Item H1 (111 Independence Dr) it was critical to indicate the project was within the Redwood City Elementary School District as that District was experiencing low enrollment and cutting back on schools. She said regarding amenities for the project that based on their location the onsite amenities were most appropriate. She said the BMR housing agreement needed to be changed and encouraged the applicants for Items H1 (111 Independence Dr) and H2 (115 Independence Dr) to offer 20% BMR or even higher and at both below market rate and affordable housing. She said she wanted assurances that none of the units were Air B&B or corporate housing units.

Thanks,
Kaitie

CITY OF MENLO PARK

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From: Meador, Kaitie M
Sent: Wednesday, July 24, 2019 9:37 AM
To: 'Theresa Wallace' <Theresa.Wallace@lsa.net>
Cc: Matthew Wiswell <Matthew.Wiswell@lsa.net>; Perata, Kyle T <ktperata@menlopark.org>; Prince, Leigh <lfp@jsmf.com>
Subject: 111 Independence - NOP Comments

Hi Theresa,

I have attached the comments that I received during the NOP comment period. I have also

attached a draft copy of the transcript for the Scoping Session for your reference. Once we review the draft I will send you the finalized version of the document.

Also, do you have any updates on the revised project schedule based on K&A's review?

Thanks,
Kaitie

Lozano Smith
ATTORNEYS AT LAW

Kelly M. Rem
Attorney at Law

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July 15, 2019

By U.S. Mail & E-Mail: KMMeador@menlopark.org

Ms. Kaitie M. Meador, Senior Planner
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Re: Response of Sequoia Union High School District to Notice of Preparation of an Initial Study and Environmental Impact Report for the 111 Independence Drive Project

Dear Ms. Meador:

This office represents Sequoia Union High School District ("District"). On behalf of the District, we are hereby submitting comments regarding the Notice of Preparation of the Initial Study and Environmental Impact Report ("NOP") regarding the focused environmental impact report ("EIR") that the City of Menlo Park ("City") plans to prepare for the project located at 111 Independence Drive, Menlo Park, California ("Project"). Specifically, this letter responds to the City's invitation to submit comments on the proposed scope and content of the focused EIR. The District previously submitted written comments highlighting some of the District's concerns regarding both this Project and the Commonwealth: Building 3 project, both of which are located within the vicinity of the District's TIDE Academy. The District requests that these and other projects in that vicinity be considered cumulatively, since their already significant individual impacts have the potential to create substantial problems for the District when combined with one another.

According to the NOP, the proposed Project, sponsored by SP Menlo, LLC ("Developer"), consists of the demolition of an existing single-story, 15,000-square foot ("sf") office building, and the construction of a new eight-story, 145,350 sf, and 105-unit multi-family residential building with an integrated multi-story and above-grade parking structure on an approximately one-acre site. The Project includes the maximum density permitted at the site through bonus level development, and 115 parking stalls, which is just shy of the maximum parking stalls allowed per unit based on the Project site's R-MU-B zoning designation. The Project is located approximately 0.25 miles north of the District's TIDE Academy, located at 150 Jefferson Drive, Menlo Park.

The District submits these comments in order to preserve its concerns regarding the proposed scope and content of the focused EIR. Below are specific scoping requests for the EIR, which the City must address in the focused EIR to evaluate adequately the potential environmental impacts of the Project on the District.

Transportation/Circulation/Traffic Analysis

1. **Describe the existing and the anticipated vehicular traffic and student pedestrian movement patterns to and from school sites, including consideration of bus routes.**

2. **Assess the impact(s) of increased vehicular movement and volumes, including potential conflicts with school pedestrian movement, school transportation, and busing activities.**

3. **Estimate travel demand and trip generation, trip distribution and trip assignment by including consideration of school sites and home-to-school travel.**

4. **Assess cumulative impacts on schools and the community in general resulting from increased vehicular movement and volumes expected from additional development already approved or pending.**

5. **Discuss the direct, indirect, and cumulative impacts on the circulation and traffic patterns in the community as a result of traffic generated by the transportation needs of students to and from the Project and schools throughout the District during the Project build-out.**

6. **Assess the impacts on the routes and safety of students traveling to school by vehicle, bus, walking, and bicycles.**

The District has significant concerns about the traffic, transportation, and circulation impacts that the Project may have on the District, including the District's staff, parents, and students that attend the TIDE Academy. The foregoing categories of information are critical for determining the extent of those impacts on the District.

Any environmental analysis related to the proposed Project must address potential effects related to traffic, noise, air quality, and any other issues affecting schools. (Pub. Resources Code, §§ 21000, *et seq.*; Cal. Code Regs., tit. 14, §§ 15000, *et seq.*; *Chawanakee Unified School District v. County of Madera, et al.,* (2011) 196 Cal.App.4th 1016.) Additionally, specifically related to traffic, there must also be an analysis of safety issues related to traffic impacts, such as reduced pedestrian safety, particularly as to students walking or bicycling to and from TIDE Academy; potentially reduced response times for emergency services and first responders traveling to TIDE Academy; and increased potential for accidents due to gridlock during school drop-off and pick up hours. (See, Journal of Planning Education and Research, "Planning for Safe Schools:

Impacts of School Siting and Surrounding Environments on Traffic Safety," November 2015, Chia-Yuan Yu and Xuemei Zhu, pg. 8 [Study of traffic accidents near Austin, Texas schools found that "[a] higher percentage of commercial uses was associated with more motorist and pedestrian crashes" around schools].)

As discussed, the District's TIDE Academy is located just north of the Project's site. The Project site's neighborhood is one of the most heavily traversed areas in the City of Menlo Park. The Project site is bordered by Bayfront Expressway (State Route 84) on the north, the Dumbarton rail corridor on the east, U.S. Highway 101 on the south, and Marsh Road on the west. Marsh Road is an arterial or collector roadway that connects major activity centers in Menlo Park, Atherton, and Redwood City. Further, the Project site is located in the Bayfront Area of Menlo Park that has experienced a drastic impact in traffic over the last ten to fifteen years as the City has continued to approve of newer, corporate campuses and mixed biotechnology, commercial, office, and residential land uses. The City's 2016 General Plan Update calls for an increase of 4.7 million square feet of non-residential office space, 850 hotel rooms, 5,430 residential units, 13,960 residents, and 20,150 employees, all within the Bayfront Area.[1] The General Plan Update Draft EIR concluded that the General Plan Update would result in significant and unavoidable impacts to roadway segments and increase peak hour delays at intersections from increased traffic, even after the mitigation measures called for in the General Plan Update are implemented (if ever).[2]

Adding to the District's concerns regarding traffic surrounding the Project site and the TIDE Academy are the number of development projects that have recently been approved by the City and/or completed in the area, including Buildings 1 and 2 on the Commonwealth Corporate Center, the Facebook Campus Project at former 1601 Willow Road and 312 and 313 Constitution Drive (78.9 acres of mixed use development), and the Menlo Gateway Project at 100-190 Independence Drive (cafe/restaurant, health club, 230-room hotel, three office and research and development buildings, and three parking structures covering 15.9 acres). There are several other projects that are being considered by the City, including the Facebook Campus Expansion Projects at 301-309 Constitution Drive, the Menlo Uptown Project at 141 Jefferson Drive and 180-186 Constitution Drive (483 multi-family dwelling units), and Commonwealth Building 3 Project (249,500 sf office space and 324,000 sf parking structure), all of which promise to drastically increase traffic in the neighborhood. **Given the magnitude of development being considered and approved in this area, the District maintains that a focused EIR is inappropriate and in conflict with the letter and spirit of CEQA**. Please see our separate letter related to the Commonwealth: Building 3 project, which was submitted to the City on June 28, 2019. All of these various projects located within the vicinity of TIDE threaten to have significant impacts, both individually and cumulatively, on the students attending TIDE, as well as District staff.

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[1] Menlo Park Small High School Project Final EIR (October 6, 2016), p. 2-12; ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update (June 1, 2016), Table 3-2.

[2] Menlo Park Small High School Project Final EIR (October 6, 2016), pp. 2-15 – 2-16; ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update (June 1, 2016), p. 4.13-73.

Construction of the Project will severely exacerbate the already stifling traffic in the neighborhood and the safety issues posed thereby. In addition to drawing hundreds of additional residents, visitors, and emergency vehicles into the area, as currently planned, the Project site only has one point of vehicular ingress and egress: the driveway connected to Independence Drive. This will inevitably lead to congestion along Independence Drive as all residents and visitors to the new apartment complex will drive along the same narrow, two-lane road to enter and exit the apartment complex on a daily basis. Further, to access the Project site, residents and visitors will often turn right onto Independence Drive from Marsh Road. This turn is extraordinarily dangerous as it requires the driver essentially to complete a 180 degree turn with no visibility of the cars and/or people walking and/or driving on Independence Drive.

The traffic and safety impacts posed by the Project, combined with all the other City-approved development in the area, will severely impact the safety and convenience of TIDE Academy students who walk or bike to school. To mitigate the impacts of increased traffic in the Project site neighborhood in implementing the District's TIDE Academy project, the District committed to develop and implement a Travel Demand Management Plan. Through this Plan, the District encourages the use of student walking, biking, and other alternative means of student transport to school.[3] To mitigate the impacts of conflicts and/or dangerous interactions between pedestrians, bicyclists, and vehicles, the District agreed to prepare a "Safe Routes to School Map" that identifies facilities such as traffic lights, crosswalks, and demarcated bikeways that promote safe routes to school.[4] The Project would undermine the District's abilities to implement its transportation and safety mitigation measures for the TIDE Academy, endangering students, parents, and visitors to the school.

We urge the City thoroughly to address and analyze each of the above listed items through its EIR, and implement extensive and thoughtful mitigation measures.

Noise

7. **Identify any noise sources and volumes which may affect school facilities, classrooms and outdoor school areas.**

It is expected that noise from construction and operation of the Project will cause impacts on the District's educational program at the TIDE Academy. Request No. 7 is intended to clarify that the EIR's consideration of noise issues take into account all of the various ways in which noise may impact schools, including increases in noise levels in the immediate vicinity of TIDE Academy.

Population

[3] Menlo Park Small High School Project Draft EIR (July 8, 2016), p. S-4

[4] Menlo Park Small High School Project Draft EIR (July 8, 2016), p. S-6

8. **Describe historical, current, and future population projections for the District.**

The District anticipates that this project will generate students and specifically requests that historical, current, and future population projections for the District be addressed in the EIR. Population growth or shrinkage is a primary consideration in determining the impact that development may have on a school district, as a booming population can directly impact the District and its provision of educational services, largely because of resulting school overcrowding, while a district with declining enrollment may depend on new development to avoid school closure or program cuts. Overcrowding can constitute a significant impact within the meaning of the California Environmental Quality Act ("CEQA"). (See, Cal.Code Regs., tit.14, §§ 15064(e).) This is particularly true where the overcrowding results in unsafe conditions, decreased quality of education, the need for new bus routes, and a need for new school construction. The same can hold true for potential school closures or program cuts resulting from a declining population.

Housing

9. **Describe the type and number of anticipated dwelling units indirectly resulting from the Project.**

10. **Describe the average square footage for anticipated dwelling units, broken down by type of unit, indirectly resulting from the Project.**

11. **Estimate the amount of development fees to be generated by development in accordance with implementation of the Project.**

The foregoing categories of information are critical for determining the extent of both physical and fiscal impacts on the District caused by increased population growth. California school districts are dependent on developer fees authorized by the provisions of Government Code Sections 65995, *et seq.*, and Education Code sections 17620, *et seq.*, for financing new school facilities and maintenance of existing facilities. The developer fees mandated by Section 65995 provide the District the bulk of its local share of financing for facilities needs related to development.

The adequacy of the statutory development fees to offset the impact of new development on local school districts can be determined only if the types of housing and average square footage can be taken into consideration. For instance, larger homes often generate approximately the same number of students as smaller homes. At the same time, however, a larger home will generate a greater statutory development fee, better providing for facilities to house the student being generated. It is for these reasons that the Government Code now requires a school district to seek – and presumably to receive – such square footage information from local planning departments. (Gov. Code § 65995.5(c)(3).)
While the foregoing funding considerations are fiscal issues, they translate directly into physical, environmental impacts, in that inadequate funding for new school construction can result in

overcrowding of existing facilities. Furthermore, fiscal and social considerations are relevant to an EIR, particularly when they either contribute to or result from physical impacts. (Pub. Resources Code § 21001(g); Cal.Code Regs., tit.14, §§ 15021(b), 15131(a)-(c), 15142 & 15382.)

Phasing of development is also a crucial consideration in determining the extent of impact on schools. The timing of the development will determine when new students are expected to be generated, and therefore is an important consideration particularly when considering the cumulative impact of a project in conjunction with other approved or pending development.

Conclusion

The District is not anti-development. However, the needs of the District must be appropriately considered in the environmental review process for all proposed new development that will impact the District, such as the Project. The District is hopeful that it will be able to collaborate with the Developer and the City in order to identify and propose solutions that alleviate the impacts caused by Developer's Project, and is prepared to provide any information necessary to assist the City in preparation of the EIR and in addressing each of the comment and scope/content issues set forth above.

We request that all notices and copies of documentation with regard to this Project be mailed both to the District directly, and also to our legal counsel's attention as follows:

Mary E. Streshly, Superintendent
Sequoia Union High School District
480 James Avenue
Redwood City, CA 94062

Kelly M. Rem
Lozano Smith
2000 N. Main St., Suite 500
Walnut Creek, CA 94596

Please feel free to contact me directly if we can be of any assistance. Thank you.

Sincerely,

LOZANO SMITH

Kelly M. Rem

Kelly M. Rem

KMR/mag

cc: Mary E. Streshly, Superintendent (mstreshly@seq.org)

CITY OF MENLO PARK

PLANNING COMMISSION

In re)
SP MENLO LLC/)
111 INDEPENDENCE DRIVE)
_____)

ENVIRONMENTAL IMPACT REPORT

SCOPING SESSION

REPORTER'S TRANSCRIPT OF PROCEEDINGS

MONDAY, JUNE 24, 2019

MENLO PARK CITY COUNCIL CHAMBERS

Reported by: MARK I. BRICKMAN, CSR, RPR
License No. 5527

ATTENDEES

THE PLANNING COMMISSION:

Andrew Barnes - Chairperson
Henry Riggs - Vice Chairperson
Katherine Strehl
Camille Kennedy
Chris Decardy (Absent)
Michele Tate
Michael C. Doran (Absent)

THE CITY STAFF:

Kyle Perata - Principal Planner
Kaitie Meador - Project Manager

SUPPORT CONSULTANT:

Theresa Wallace - Principal Planner, LSA Architects

PROJECT PRESENTERS:

Sateez Kadivar
Jon Ennis
Paul Lettieri

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BE IT REMEMBERED that, pursuant to Notice of the Meeting, and on June 24, 2019, 9:42 PM at the Menlo Park City Council Chambers, 701 Laurel Street, Menlo Park, California, before me, MARK I. BRICKMAN, CSR No. 5527, State of California, there commenced a Planning Commission meeting under the provisions of the City of Menlo Park.

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MEETING AGENDA

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Presentation by Theresa Wallace	21
Public Comments	28
Commission Questions	30

JUNE 24, 2019 9:42 PM

P R O C E E D I N G S

---o0o---

CHAIRPERSON BARNES: And we are at G2. So Mr. Perata, should I progress to H, the Study Session and just work from H1 and H2 and not do G?

MR. PERATA: So we do need to do G. There are actually two separate components to the same project. Item G is the Scoping Session on the Environmental Impact Report and then the Study Session component comes after.

You need to do the Public Hearing first before we get to the Study Session.

CHAIRPERSON BARNES: Sure. We've got to blend it. We're blending the EIR and the Study Session in one.

MR. PERATA: One report, two items, similar to what we just did on the Corporate Center in the last meeting.

CHAIRPERSON BARNES: So I'll -- we'll go through and address this -- go from G2 and go to H1 and do G2 and progress to H1.

MR. PERATA: Right. So I'll let the Project Manager Kaitie Meador take over, but just quickly, yes, you need to do the Public Hearing first, and then once the Scoping Session is done and all public speaks, we have a court reporter for this portion and we want to

record all those comments in the court reporter format for the EIR position, and then we'll close that and move into the Study Session.

I may have just overstepped in terms of Kaitie's presentation, so I'll turn it over to her.

CHAIRPERSON BARNES: So let me announce it so I can get through that and read it, and Kaitie, you can tell us exactly how you want us to progress on that.

So we're going to progress to G2, and that's the Environmental Impact Report Scoping Session for 111 Independence Drive: Request for use permit, architectural control, environmental review and density bonus to redevelop the site with approximately 150 multi-family dwelling units and an approximately 712 square foot potential commercial space in one building with an above grade multi-story parking garage integrated into the proposed eight-story building, located in the R-MU-B (Residential Mixed Use, Bonus) zoning district.

The project site currently contains an approximately 15,000 square foot single-story office building that would be demolished. The proposed residential building would contain approximately 95,056 square feet of gross floor area. The proposal includes a request for a use permit to modify certain R-MU design standards and a request for an increase in height,

density and floor area ratio under the bonus level development allowance in exchange for community amenities.

The proposal also includes a request to use the City's Below Market Rate (BMR) density bonus, including an increase in units, FAR and height, in exchange for BMR units.

Hello, Kaitie.

MS. MEADOR: Good evening, Commission. So as you just mentioned, the project at 111 Independence Drive for the Study Session and Scoping Session, and just to recap what Kyle is saying, so we will have two parts for the public hearing.

We will have the Environmental Impact Report Scoping Session, so that is an opportunity for you and the public to comment on what topics should be studied in the EIR.

And then after that, we will have a Study Session to provide feedback on the revised project plan.

There was one previous Study Session that was held last year, and as the Planning Commission knows at that time, their feedback was generally positive with comments focusing on parking and open space.

So for this meeting, there will be no action taken on the item.

And then staff is recommending that -- that you first start with the EIR Scoping Session. So my presentation will be followed by a presentation from the applicant, and then the EIR consultant.

After that, then there will be time for the Commission to ask questions and public comment, followed by the Commissioners' discussion and then close of the Scoping Session.

After that, we'll have the Study Session and we'll go right into the Planning Commission questions and public comment again, and then Commissioner discussion.

If you have any questions about that, let me know.

CHAIRPERSON BARNES: Great. Any questions for Kaitie? Seeing none, progress to the applicant.

Good evening.

MR. KADIVAR: Good evening, Planning Commissioners. Good to be before you again. It was almost a year ago to the day that we were here at the Study Session on June 18th, 2018.

My name is Sateez Kadivar. I am part of the ownership family along with my mother, Massy Mehdipour and my sister.

We bought the property about twenty years ago, and my mother has run a couple of businesses out of it.

I participated in the last business over the last fifteen years there, so I spent a lot of time at this location.

Also with me tonight is Jon Ennis, president of BTE Architecture and Nathan Simpson of BTE. He's done a lot of the heavy lifting since changes last time, and Paul Lettieri, principal of Lasardo Landscape Architects.

So just a little additional background. We've got a lot of experience as a family in the construction industry across a variety of industries as well as technology for construction.

We're a local family. I attended Oak Knoll, Hillview and M-A. My four kids go to La Entrada and Las Lomitas with the oldest a year away from M-A.

Kind of broadly speaking, I've been to a lot of Planning Commission meetings, a lot of City Council meetings, and at almost every other one, the topic of the housing crisis and housing balance comes up. That's what this project is -- is all about.

In particular, I've noticed on the tenant relocation ordinance that Menlo Park worked on for a long time and heard passionate, passionate debate on both sides.

But what everybody agreed on was the real long-term solution is increasing the supply of housing. So that's kind of the overarching goal of -- of what

we're doing here is to address the jobs/housing imbalance.

And to do so in a traffic and environmentally friendly manner, by virtue of being adjacent to or really within a job center, this -- this project is thought of as an infill project within Menlo Gateway because we're really myopic about it.

We're on Phase I of Menlo Gateway on one side and Phase II is -- is -- is on the other.

It's also worth noting that we're removing office stock. We're not adding office stock. So it's a hundred percent housing even though office is technically allowed in the -- in the district for the zoning.

So I'd like to summarize some of the primary points of feedback that we received a year ago. We were pretty diligent in going through these and incorporating these changes.

Architecture and design, as Kaitie mentioned, the feedback was very favorable. You know, we heard comments like the building is gorgeous and it's a great -- it's a great design.

Because of the feedback, obviously, we have not altered the -- fundamentally architecture and designs at all while incorporating some of the changes that I'll talk about.

Probably the most obvious feedback and the majority of the Commissioners provided was reducing the parking ratio.

We were at a ratio of 1.4. Keep in mind as a reminder the minimum is 1, the maximum is 1.5. We had come in thinking we had done a good job being within that.

What we've done now is reduced that parking ratio to 1.1 which is, you know, eerily close to the -- effectively close to the bare minimum and again provides the associated traffic and environmental benefits.

We have to delve into that a little bit. We have 115 parking stalls. Keep in mind six of those are outside of the gates of the garage, visitor and cafe parking, so effectively we have 109 stalls for 105 units.

To put that in context, we -- you know, the zoning provides for additional forty percent parking, so we've cut that substantially.

Next item. The front private patio publicly available open space. This is really feedback from one Commissioner to not have a private patio in the front, to make all parts of the public accessible area.

Other than that, the feedback on the open space was very positive.

So we focused our efforts on eliminating the

private patio, but otherwise keeping the entrance of what we did, but incorporating the cafe.

Next topic. There was a fair amount of discussion on the community amenities list. We have added a cafe, which is one of the amenities from the community amenities list of the category of community serving -- community serving retail.

There's like -- likewise a lot of discussion on BMR, both from the Commissioners as well as public comment, Karen Grove and Pamela Jones in particular. I think there were some others, as well.

The comments were not only BMR units be on one floor; they be among income levels.

So we provided a BMR proposal. Really dispersed around the building, both horizontally and vertically. The unit mix is the same as the building overall.

We're using a floating system so that you don't -- as somebody's income increases, they don't -- they don't have to move -- move out of their unit.

Lastly, we made a big change on the income levels. Whereas before we were proposing one hundred percent moderate. We revised that to fifty percent moderate, fifty percent low.

This type of mix does a couple of things. It

helps the project be more viable and helps to provide teacher and work force housing known as the missing middle.

The project we're proposing is -- is somewhat unique. It's a smaller project or smaller lot but with a higher density.

So in some ways, we're caught in the middle a little bit. The economics become challenging because we have the more complex and expensive type of construction with eight stories, but we have a fair amount of amenities, but without the ability to spread those costs across four or 500 units, and we do not have an office building to kind of subsidize the -- the costs.

At the same time, by providing moderate units, we address a big community need to provide missing middle housing.

Right now -- I mentioned this last time, and the numbers really haven't changed. The City of Menlo Park has permitted only three percent the regional housing needs assessment allocation for -- for moderate.

So the allocation level is 143 and there are entitlements, actually units for four, and even the 143 target number is a pretty low bar according to Housing Commissioners.

A note about impacts on schools. Ninety-one

percent of the units are one bedroom and studios, so very much, you know, designed to limit the impact on schools in terms of students, and we hope to provide a positive impact via both BMR and nearby housing.

And lastly, just to highlight some of the other neighborhood benefits, parcel projects, street improvements, sidewalks, lighting, landscaping, underground and power lines and we are dedicating a portion of the property which runs through Independence Street.

So with that, I will hand it over now to Jon Ennis who will talk about the design architecture.

Thank you.

CHAIRPERSON BARNES: Thank you.

MR. ENNIS: Good evening, Chairman and members of the Planning Commission. We are going to walk through the design we presented a year ago and obviously answer any questions as we walk through the project again.

It's an interesting plan shape and interesting context with the Menlo Gateway next to us, so I think we -- we have resulted in a pretty unique and interesting architecture that I'm excited to share with you guys.

So this site -- you see the Gateway there. Two perspectives. And our -- our project is just the one-story office building, so that's the site context

there.

And just I think you guys know, as the R-MU zoning pointed out on that point, it's the parcel right there with the arrow.

I think we just heard a pretty good summary of the units, so the percentages are there. Twenty-eight percent studio, sixty-four one and nine percent two-bedroom units.

And we're going to talk about parking. More than one bike per unit, and outside short-term bike parking, also.

So you're looking here at the ground floor. So it's mainly parking, covered almost one hundred percent by the -- the only parking that you see as you're driving around the site would be the garage entrance, but we really worked hard to create a varied activated and classy first floor of the building.

You see it's very activated. You see a lot of people coming in and out of the project.

This slide kind of highlights one of the changes where we had just a lobby entrance, where now we were asked to make that lobby more prominent. So we moved that forward and closer to the street.

And then and all the way along Independence Drive, we have active uses, so lobby lounge with an

attendant. We added the cafe and kind of a bike shop/ bike lounge area all around the concept. So we have a nice, lit up almost retail-like frontage, but not retail.

The other thing we did is we added more entrances to the front, and we pretty much made that public. So there's a stairs where you can enter the lobby from another point, and then the central area where you can enter a ramp that takes you up and to the left or the right. Can you put your arrow on that for me?

So it's multiple entrances and doors into the building, into the cafe. There's a lot of entrances, a lot of activity and we made it all public, part of the public ground.

And now you're standing up on top. This is the third floor, so three floors of concrete. They're on the top of the third floor. So now we've kind of cut away.

You know, a lot of projects we do end up taking shape of the site and the building ends up taking the shape of the site and you see we're doing something different.

This created a counterpoint to the arc of the street. Those become private terraces with planters that kind of divide up those unit's terraces, and then on the back, we reduce the mass and have taken away all that space on the back floor for barbecues, fire pits, the spa

with a pool in the back.

So then now when you go third through eighth, you pretty much see this repetitive bar at the building, and then at the upper left we've chopped away some of the units to create a small outdoor, some very large small outdoor area and a little inside gathering area for tenants to kind of take in the views from the site.

So you can see it's got an eight-story building, three-story -- three-story base. We tried to accentuate -- you know, kind of have a building with a base and metal on top.

We articulated that with material and color, and in this light, you can kind of see the activated base. The lights are on the ground floor and there's lots of activity in there.

There's wood panels. Those two windows are supposed to look the same. I don't know why they showed up at dark, kind of weird in the rendering.

But basically a wood base, kind of a warm material down at the -- you know, the lower part of the building, and then as it goes up, you can see that counterpoint kind of white frame mass of the building arcs away from the -- from the street.

And at the top, we have just kind of a penthouse level with a blue band across the top. You can

see the deck on the upper left there in the rendering.

These are the materials. So it's basically on the ground floor fluoroform concrete. The wood -- the dark wood you see on that rendering in the lower left is a panel, and across from that is basically three coats cement plaster.

The paint, very large and kind of the largest economic -- the largest industrially available vinyl windows. You can see those in the upper corner there. They can be as much as nine by eight feet. The square windows very large and beautiful.

We have wood awnings, and the picture of the louvers are covering all the parking garage's openings. So the headlights won't be seen, but air can come in and out of those openings, and some of the decks have less rails. We are fluoroform concrete finally in the lower right there.

This is a diagram, the -- we complied completely with the code. That blue area, that blue setback area was wrapped all the way around the building.

So it's kind of what I was saying. The building would end up being essentially the shape of the site, which is ten foot setback all the way around.

What we did is we varied from that a little bit. I think in the end we have the same amount of

unbuilt area. We just did it in a different shape.

So that's just one of the requests that we have, and I think that dark brown colored curb, I think you can understand it. It results in more interesting architecture, I think. The building meets the modulation code with a slightly different variation.

So here you can see the two buildings. It's kind of this interesting counterpoint of a convex and concave arc working off -- working off of the existing Gateway building, and those dash lines we just put over there, it just kind of illustrates the artwork.

I think it's kind of an interesting harmonious massing and counterpoint of the two buildings. It's very interesting and have a great feeling. So that's the site relationship that we're working on.

And this is a view from the highway, illustrating the size and scale of the building and the interest in the breakdown of the massing.

And this is just the project from another point of view, trying to illustrate the setback and the planting that we're doing in front, kind of a photo montage to show, you know, what the building environment will look like when we're done.

And then we have Paul Lettieri, the president from Lasardo to talk a little bit more in more detail of

the setback in front of the building and a few other things.

Thank you.

MR. LETTIERI: My name is Paul Lettieri. I only have a few slides to go over. We'll try not to be repetitive.

Our main change is the front, because now we actually have doors across the street. So the cafe -- that's fine.

We have the cafe on one side. I think it's important to realize the building is thirty inches above the street for before the hand is there to the right.

So we have that grade to pick up. We had that grade change to address before. We tried to make an opportunity out of it.

The cafe is thirty inches above, so you can sit at the tables and look out on the street.

It's got twelve foot wide stairs which connect to it, and a connection to that cafe's space, and what we've done for solving the grade change part of it, the walls run parallel to the building which is basically like -- it goes up in both directions.

So you come into the center, you can walk to the lobby entrance on the right or the cafe on the left if you are using the handicap accessible route, and we

have direct stairs to take you up otherwise, and we tried to put that into kind of the geometry of the paving pattern that runs across the edge.

We have -- we're screening that ramp to some extent at the edge. The top is a six inch high planter wall. So in terms of how -- how you feel as you walk the street.

We've got a planted edge off the building as well as a planted edge on the outside of the ramp, and as we had in our previous design, wide benches and with backs to them, and there's a deck, a wood deck eighteen inches up for a place for an art piece to be just to the left of the entrance there.

And we've also addressed the bicycle parking, which we didn't have enough before. We've got racks distributed in two logical locations, sort of splitting the lobby and one in front of the cafe, and so the bike -- the bike access connection on the left side has zero essentially.

It's not inhabitable space. That's why we don't have that raised plateau going all the way around the front of the building.

We do our storm water treatment in many of the planters that you see there, certainly integrate that into the site.

So lastly, just as a reminder, the reason we don't have street access is the gas line there. We kind of drafted the design of the plaza around that.

The next one. Just some of the imagery as we used on the left side. Open space in the sense of deck there. That's sort of the middle - middle picture. The decking for seating and potentially for the art to be on it, and the courtyard up above.

Jon really talked about those. They're not changed from the last time in concept and detail.

If you have any questions about those, I'd be happy to talk about them. So we're all here to answer any questions you might have.

CHAIRPERSON BARNES: Thank you.

MS. WALLACE: Good evening. I'm Theresa Wallace. I'm principal planner with LSA, the City's consultant for environmental review of the proposed project.

So the first slide just lists the topics that I will cover in my brief presentation tonight, including the purpose of the Scoping Session, and overview of the Connect Menlo EIR and its relationship to this project, the initial study that was prepared for the project, the EIR that we will be preparing and overview of the environmental review process and schedule, and then we'll

open it up for questions from the Commission and then public comment.

So the California Environmental Quality Act or CEQA requires lead agencies that approve projects to identify environmental impacts associated with those projects and then either avoid or mitigate the impacts.

The purpose of the Scoping Session tonight is to engage interested parties early on in the environmental review process and to get your thoughts on the topics that should be considered in environmental review of that proposed project.

The merits of the project are not considered in the EIR, so comments should focus on specific issues that relate to impacts on the environment.

Comments should focus on the range of environmental topics to be considered in the EIR. Any specific issues of concern related to environmental topics, the approach and methods used in the analysis and potential mitigation measures or alternatives that you think should be considered.

This is just an overview of the Connect Menlo EIR. In November 2016, the City Council approved an update to the Land Use and Circulation Elements of the General Plan and related zoning changes, commonly referred to as Connect Menlo.

The Connect Menlo Final EIR provided a program level analysis of the development potential envisioned for the entire City, including the increased development potential in the Bayfront area where the project site is located.

The City of East Palo Alto challenged the City certification of the EIR, and to settle the litiga -- the litigation, the parties entered into a settlement agreement that allowed for environmental review for later activity.

That is consistent with the program, and to be limited to effects that were not analyzed as significant in the prior EIR or are subject to substantial reduction or avoidance through project revision.

That does require certain projects -- including those utilizing bonus level development -- to conduct a focused EIR with regard to housing and transportation.

Environmental review of the proposed project will adhere to the Connect Menlo EIR and will also comply with the terms of the settlement agreement.

So the initial step in the environmental review process and initial study was prepared to evaluate the potential impacts of the project and determine what levels of additional analysis would be appropriate for the project EIR.

The initial study discloses relevant impacts and mitigation measures covered in the Connect Menlo EIR and discusses -- discusses whether the project is within the parameters of that EIR.

Based on the conclusions of the initial study, the topics shown on the slide will not be further evaluated because the project is not anticipated to result in significant effects related to those issue topics or because the initial study found that these topics were adequately addressed through the program level EIR.

From the topics of cultural resources, geology and soils, which also covers impact paleological resources and noise, it was determined that applicable mitigation measures identified in the Connect Menlo EIR would ensure that those impacts would be less than significant.

Though the focused EIR anticipated will be analyzed whether the project would result in significant impacts to the issue topics shown here.

For air quality, the Connect Menlo EIR identified mitigation measures that required technical assessment of private comprehension and construction, air quality impacts, and the site is also located in proximity to several major roadways which requires

preparation of a health assessment. Those topics will be covered.

The greenhouse gas emission topics, the project contribution to emissions will be studied based on transportation related impacts that were identified with the project.

For noise, although the Connect Menlo EIR determined that impacts would be less than significant with implementation of mitigation measures, there is the possibility that there will be transportation related impacts and therefore transportation related noise, so that topic will also be studied.

For population and housing, a housing needs assessment will be prepared pursuant to the terms of the settlement agreement, and that topic will be covered in the EIR.

Again, the terms of the settlement agreement require the preparation of a project specific transportation impact assessment.

The study will include analysis of potential impacts of key study intersections and identification of project -- project specific mitigation measures.

So finally the EIR is also required to evaluate a reasonable range of alternatives. The alternatives should attain most of the basic project objectives and

should avoid or substantially lessen any significant effects of the project.

The alternatives will be developed after the impacts of the project are identified and with input received during the comment period.

A no project alternative will be considered, which is required by CEQA, and also a reduced size project alternative may also be considered.

So this slide, if you can read it, shows the overall schedule indicated for the environmental review process.

On June 14th, the City issued the Notice of Preparation or NOP notifying interested parties and responsible agencies that an EIR will be prepared, and the initial study has been included for that review.

The thirty-day comment period to provide public comments on scope and content of the EIR -- EIR ends on July 15th.

During that time, interested parties are encouraged to submit comments on the scope of the EIR in writing, and tonight is also again an opportunity to provide verbal comments.

Over the next several months, we will prepare the EIR, and the Draft EIR is expected to be published in the late fall.

After the EIR is published, there will be a 45-day public comment period. During that time, there will also be an opportunity to review the EIR and submit comments to the City.

The City will also hold a public hearing on the Draft EIR during that comment period, and at that time comments can also be provided verbally or again in writing.

After the close of the comment period, we will then prepare written responses to each substantive comment received regarding the EIR. It's called a response to comments document.

The response to comments document will also include any revision to the Draft EIR if any are necessary.

Together, the Draft EIR and response to comments document will constitute the Final EIR which will be published and available for review a minimum of ten days before any hearings are held.

So once the Final EIR is complete, the City will consider certification of the EIR, and after that, as a separate action will consider approval of the project.

The public may attend these hearings and provide comments on the Final EIR. EIR certification is

currently anticipated in the spring of next year.

So again the purpose of this meeting is to engage the public early on in the environmental review process and to get your thoughts on the topics that should be evaluated.

Even if you provide comments verbally at this meeting tonight, we would encourage you to submit them in writing, as well, and again, that's -- the comment period closes on July 15th.

So with that, if the Commission has any questions, I can answer them or we can open it up for public comments.

CHAIRPERSON BARNES: Any Commissioner questions on the Draft -- on the presentation as delivered by the EIR consultant?

Seeing none, I will move to open for public comment on the EIR scope. And as it relates to public comment, I have one card for Ms. Pamela Jones.

If anyone would like to submit accord, please come forward and submit your card.

MS. JONES: Good evening, Commissioners and staff.

CHAIRPERSON BARNES: Good evening.

MS. JONES: As always, thank you for your work and your sincere deliberations. It really felt good

having you -- being in your hands.

Pamela Jones, resident of Menlo Park on Hollyburne Street. My comment is specifically to the EIR -- the scoping EIR.

It's -- it's my understanding that the Connect Menlo 2016 was based on the 2010 CEQA requirements. It was -- the CEQA was revised in 2017 and has subsequently been revised -- revised and the -- and the document was released on December 28th, 2018 and is now in effect.

I would like to be assured that the EIR process is using the current CEQA. If it was changed for a reason and if we're using the 2010, then we're using almost a decade's old document.

I also think it would be helpful that whomever does these EIRs is that they do a presentation to educate not just the Council and the Commissioners, because some of you probably didn't know this looking at the expressions on your face, didn't know that there was a new one, that it would be really helpful to the public and be a way of engaging the public so that you would have more people show up when we talk about the scoping EIR.

It's a mystery to even find when it's going to happen, but the entire EIR process is one in which the entire City can be involved in. You can't be involved in

something that you don't know about.

So two parts. One is the updated CEQA; and two, let's look at having a robust outreach to the community so that we know every single step of the process and we can be present when they -- when it's being brought to the Commissioners.

So again, thank you.

CHAIRPERSON BARNES: Thank you.

I have no other cards. If anyone would like to give public comment, again please come forward, and having no other cards and seeing no one coming forward, we are going to progress to Commission comments on the EIR scope.

I'll open it up to you guys for comments.

Mr. Riggs.

COMMISSIONER RIGGS: Yes. I do have one question and I suppose it would be for Ms. Wallace. Usually when we see an EIR in the transportation portion, it charts, say, both roadway segments and intersections and compares likely changes with the baseline, and where the baseline is the service of level F, whatever change takes place is more or less considered no change because it's still level F.

I would like to get clarity whether we still do that or whether say there's a twenty-three percent

increase in delay at intersection Q that is already level F, is that identified in some way in the chart to make it clearer to the -- the quick reader that there is a notable impact?

MS. WALLACE: I'm trying to understand your question. So the City's traffic analysis guidelines have significant criteria, so if an intersection is already operating at unacceptable level --

COMMISSIONER RIGGS: Right.

MS. WALLACE: -- the project contribution to that unacceptable condition will be quantified and discussed.

And if that -- if there's -- I'm not familiar with exactly what the threshold would be, so if -- if it rises to a certain percentage contribution, if that's a significant impact, that would be identified and mitigation would be recommended.

Is that getting to your --

COMMISSIONER RIGGS: Do you still use in the chart performance levels like D, E and F?

MS. WALLACE: Yes.

COMMISSIONER RIGGS: All right. So I would like to suggest that when F is impacted to the negative, that whether there's an asterisk added to the F in the chart or a new letter is substituted or some indicator on

the chart that there is a significant impact.

And then to be honest, I don't recall whether the transportation impact of the larger area than just the segment or intersection are identified as -- is there something smaller than regional? Is there a -- is there a local area impact that -- that is judged?

For example, over the years, Willow Road has been repeatedly impacted by development that might be more than a mile away. It might also be impacted by development that is more than two or three miles away and outside of the city limits.

But do we have a place in the EIR to indicate -- indicate that the neighborhood that depends on Willow Road for its transportation, including simply cross-town transportation, that neighborhood -- that entire neighborhood's impacted when that segment Reaches -- reaches a tipping point? In other words, where it's more or less unmoving for ninety minutes.

Is there a portion of the EIR that addresses a neighborhood level of impact? I don't recall seeing one.

MS. WALLACE: So you're talking about like neighborhoods that could be several miles away? Is that what --

COMMISSIONER RIGGS: Well, it might be in the case of the neighborhood called Willows one mile away.

In the case of a neighborhood called Belle Haven, it's adjacent.

But where one looks at segments, one is looking at individual roadways, and it implies that these collector streets are impacted, whereas in fact the neighborhood's impacted.

Do we have -- do we have anything in the EIR that identifies neighborhoods being restricted -- their movement being restricted?

MS. WALLACE: Well, we haven't prepared the EIR yet, but that point is well taken. We did work with the City to identify fifteen intersections and its vicinity for analysis.

We haven't conducted that analysis yet. We don't know how they're impacted or the communities in those areas are impacted.

COMMISSIONER RIGGS: All right. So I guess I'm asking if there was a template for such things. You seem to be indicating that if the City asks for it, we could have it.

MS. WALLACE: That is certainly something we could consider, the EIR should.

COMMISSIONER RIGGS: Okay. Then, I guess I would turn to staff and ask Kaitie. Is this something that would make sense from a staff perspective to include

in the EIR?

MS. MEADOR: So we could look into it further. We can discuss it with the transportation division, but we can look at additional intersections to study within the neighborhood surrounding the project site.

COMMISSIONER RIGGS: And -- and I was thinking in terms of the narrative of the EIR, which would, rather than say: "Hamilton is backed up during this period," that would say: The following neighborhood bounded by the following streets or the western portion of the neighborhood of this name is impacted by lack of access or lack of ready ability to exit.

That would be a new form of narrative I believe for an EIR, but it would help delineate to officials using the EIR what the meaning of the impacts are.

So I'm suggesting that and the change in the chart where we have a level F that's indicated before and after a level F that the asterisk would change level F asterisk or some other manner in which it acknowledges a -- an additional impact.

MR. PERATA: So I'll jump in real quick just to summarize or confirm. So if I understand correctly, you're not speaking to the actual analysis itself, but rather the editorial nature of how the EIR presents the information relating to the charts regarding level of

service of potential impacts, especially since the designation is changing, and geographically speaking more to the roadway segments as relates to the neighborhood of the context of Menlo Park and geographically neighborhood wise or residential street wise to be a little more context for the readers of the document to understand where we're looking at.

COMMISSIONER RIGGS: Yes. I'm talking to the narrative.

MR. PERATA: Got it.

COMMISSIONER RIGGS: And to make the change more useful for level F asterisk and level two, and it would make the narrative more useful than to say that Hamilton is backed up, to say that the southeastern portion of the neighborhood and entry is additionally backed up.

Thank you.

CHAIRPERSON BARNES: Thank you.

Commissioner Kennedy.

COMMISSIONER KENNEDY: Just a couple things. So to Miss Jones' point around the baseline information in Connect Menlo that would be used as, is it going to be from 2018 or is it prior from 2010?

MS. WALLACE: So part of what we do is look at the baseline conditions and determine if there have been

any changes, and we consider that context.

And also with respect to the change in the CEQA guidelines, if you review the initial study, you see that we use the current guidelines and for example we talk about energy and wildfire, which are new topics. So that will be used.

COMMISSIONER KENNEDY: And then through the chair.

CHAIRPERSON BARNES: Yes, proceed.

COMMISSIONER KENNEDY: So you're talking about the EIR sort of addressing the narrative in the over-explanation of how things would derive.

So I'm wondering in maybe looking at a further and deeper analysis around the existing condition, because it seems existing and changing with each new project.

So we've been looking at plans for a very long time, and I think there's a lot of data in there that gets very overwhelming, and unless you know what you're looking for, you sort of look at numbers and sort of in the aggregate without understanding how they actually relate to each other.

So I, you know, maybe even beyond sort of expressing a larger narrative, you know, really for this particular area, really sort of delving into, you know,

the levels of F that there are and the impacts around the level of F that happen as the existing condition, right?

Because each additional project just adds the F. It doesn't take away, and it can't be -- I don't think -- it can't be really mitigated. It can get spread a little further out. That's my comment.

CHAIRPERSON BARNES: Thank you.

Any other additional comments as it relates to the EIR scope, and if there is none, then I will close the public hearing.

Before I do, I'll check in with staff, EIR consultant. Anything else that you would like to add prior to closing?

MS. WALLACE: No.

CHAIRPERSON BARNES: Kaitie, anything prior to closing?

MS. MEADOR: No.

CHAIRPERSON BARNES: Good to go. Okay. Thank you. So with that, I'll close the public hearing as it relates to the EIR Scoping Session.

Thank you.

(The record was closed at 10:31 PM).

---o0o---

STATE OF CALIFORNIA)

COUNTY OF SAN FRANCISCO)

I, the undersigned, hereby certify that the discussion in the foregoing meeting was taken at the time and place therein stated; that the foregoing is a full, true and complete record of said matter.

I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing meeting and caption named, or in any way interested in the outcome of the cause named in said action.

IN WITNESS WHEREOF, I have hereunto set my hand this _____day of _____, 2019.

_____

MARK I. BRICKMAN CSR 5527

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APPENDIX B

INITIAL STUDY

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111 INDEPENDENCE DRIVE PROJECT
INITIAL STUDY

MENLO PARK, CALIFORNIA

LSA

June 2019

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111 INDEPENDENCE DRIVE PROJECT
INITIAL STUDY

MENLO PARK, CALIFORNIA

Submitted to:

City of Menlo Park
Community Development Department
Planning Division
701 Laurel Street
Menlo Park, California 94025

Prepared by:

LSA
157 Park Place
Pt. Richmond, California 94801
510.236.6810

Project No. CMK1901

LSA

June 2019

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LIST OF ABBREVIATIONS AND ACRONYMS

AB 52	Assembly Bill 52
APN	Assessor's Parcel Number
BAAQMD	Bay Area Air Quality Management District
Bay	San Francisco Bay
BMPs	Best Management Practices
CalEEMod	California Emissions Estimator Model
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH_4	Methane
City	City of Menlo Park
CO_2	Carbon dioxide
ConnectMenlo	General Plan Land Use and Circulation Elements
ConnectMenlo Final EIR	ConnectMenlo Final Environmental Impact Report
DPR	California Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
ESLs	Environmental Screening Levels
EV	Electric vehicle
EVA	Emergency vehicle access
FEMA	Federal Emergency Management Agency
GHG	Greenhouse gases

gsf	Gross square feet
GWh	Gigawatt-hours
I-280	Interstate 280
kWh	Kilowatt-hours
LID	Low Impact Development
MGD	Million gallons per day
MGY	Million gallons per year
MLD	Most Likely Descendant
MPFPD	Menlo Park Fire Protection District
mpg	Miles per gallon
MPMW	Menlo Park Municipal Water
MPPD	Menlo Park Police Department
N_2O	Nitrous oxide
NAHC	Native American Heritage Commission
NWIC	Northwest Information Center
PCB	Polychlorinated biphenyls
PCE	Peninsula Clean Energy
PG&E	Pacific Gas & Electric
Phase I ESA	Phase I Environmental Site Assessment
R-MU-B	Residential – Mixed Use District – Bonus
SamTrans	San Mateo County Transit District
SB 50	Senate Bill 50
SFPUC	San Francisco Public Utilities Commission
SHPO	State Historic Preservation Office

SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SR 84	State Route 84
SRA	State Responsibility Area
Stanford HCP	Stanford University Habitat Conservation Plan
SVCW	Silicon Valley Clean Water
TCE	Trichloroethene
TDM	Transportation Demand Management
TIA	Transportation Impact Analysis
TIF	Transportation Impact Fee
UPRR	Union Pacific Railroad
US 101	US Highway 101
USEPA	United States Environmental Protection Agency
UWMP	Urban Water Management Plan
VMT	Vehicle miles traveled
Water Board	San Francisco Bay Regional Water Quality Control Board
WBSD	West Bay Sanitary District
WTP	Water Treatment Plant
WWTP	Waste Water Treatment Plant

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1.0 PROJECT INFORMATION

1. **Project Title:**

   111 Independence Drive Project

2. **Lead Agency Name and Address:**

   City of Menlo Park
   City Hall – 1st Floor
   701 Laurel Street
   Menlo Park, CA 94025

3. **Contact Person and Phone Number:**

   Kaitie Meador, Senior Planner
   City of Menlo Park
   Community Development Department, Planning Division

   Phone: 650-330-6731
   Email: KMMeador@menlopark.org

4. **Project Location:**

   111 Independence Drive, Menlo Park, San Mateo County
   Assessor's Parcel Number (APN): 055-236-120

5. **Project Sponsor's Name and Address:**

   SP Menlo, LLC
   111 Independence Drive
   Menlo Park, CA 94025

6. **General Plan Designation:** Mixed Use Residential, Bayfront Area

7. **Zoning:** Residential – Mixed Use District – Bonus (R-MU-B)

8. **Description of Project:**

This section describes the proposed 111 Independence Drive Project (proposed project) submitted by SP Menlo, LLC (project sponsor) and evaluated in this Initial Study. A description of the proposed project's location, context and objectives is followed by details of the project itself and a summary of required approvals and entitlements.

Project Site

The following describes the geographic context of the site for the proposed project and provides a brief overview of the existing land uses within and in the vicinity of the site.

Regional Location and Access

The approximately 0.92-acre triangular project site is located at 111 Independence Drive within the City of Menlo Park, San Mateo County. Menlo Park is located approximately 30 miles south of San Francisco, at the southern end of San Francisco Bay (Bay).

Regional vehicular access to the project site is provided by US Highway 101 (US 101), via the Marsh Road on- and off-ramps located immediately to the north and State Route 84 (SR 84 or the Bayfront Expressway) located to the east.[1] Direct local access is via Independence Drive which borders the site immediately to the north and west, Constitution Drive approximately 0.1 mile to the east, and Chrysler Drive about 0.2 mile to the south of the project site.

The nearest bus stop to the project site is served by the San Mateo County Transit District (SamTrans) Route 270 and is located approximately 0.3 miles to the north on Haven Avenue. The Atherton Caltrain Station is located approximately 2.8 miles west of the site. The Menlo Park Caltrain Station is located approximately 3.7 miles south of the project site.

Figure 1-1 depicts the site's regional and local context. Figure 1-2 is an aerial photograph of the project site and the vicinity.

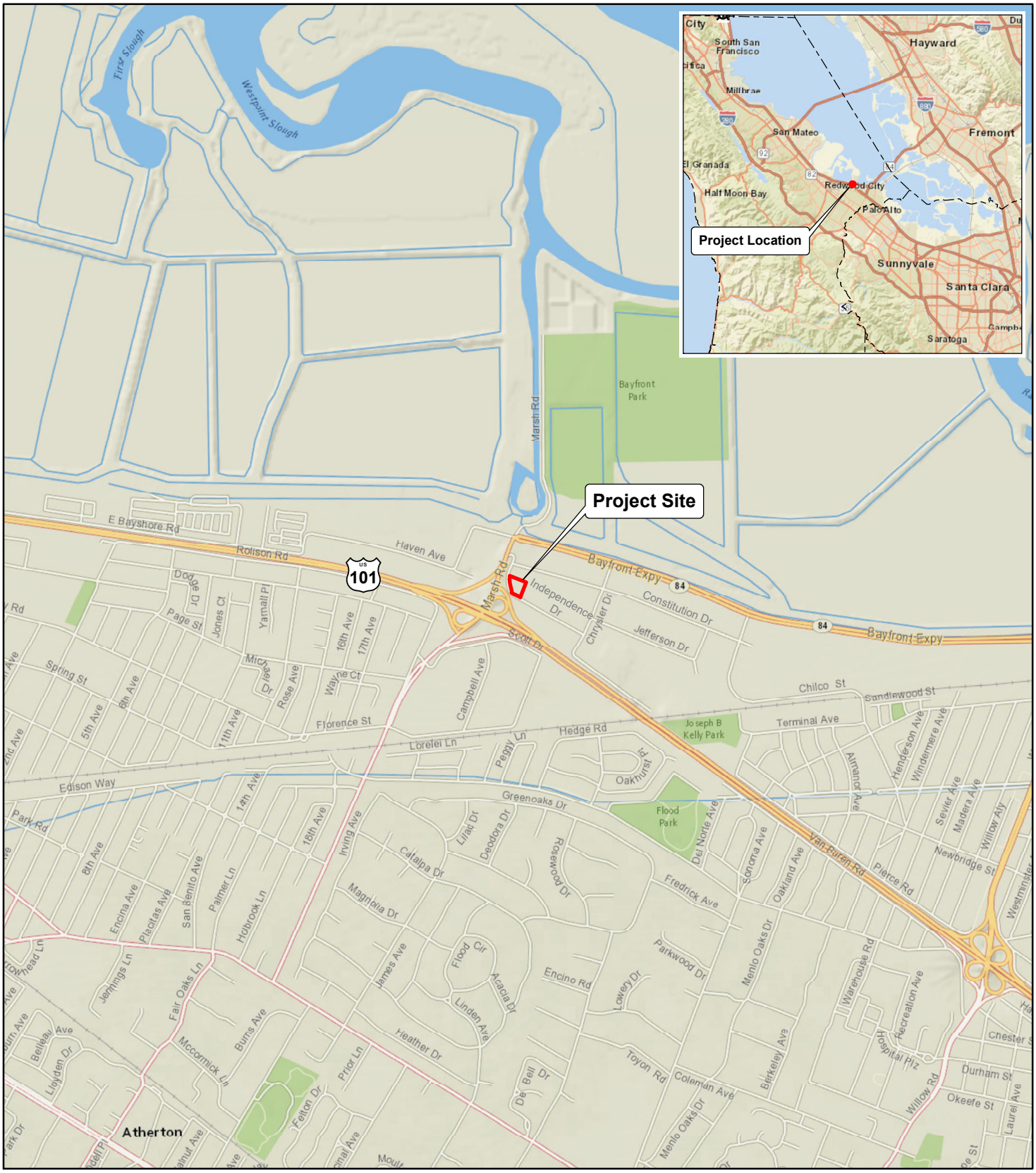
Site Characteristics and Current Site Conditions

The generally-level project site (APN 055-236-120) is currently developed with an approximately 15,000-square-foot single-story office building. A small portion (approximately 87.8 square feet) of the Independence Drive right-of-way is located within the project site. The project site provides designated parking for about 35 vehicles. Ingress and egress to the project site is provided by three driveways along Independence Drive.

The existing building was constructed in 1972 and is currently occupied by a commercial business. Vegetation on the project site consists of landscaped areas along the site perimeter fronting Independence Drive. A public utility easement, approximately 10 feet in width, runs along the eastern border of the project site.

Figure 1-3 depicts an aerial view of the project site and Figure 1-4 depicts current site conditions. Figure 1-5 includes photos of the existing building on the site; viewpoint locations are depicted in Figure 1-3.

[1] The street grid in the immediate vicinity of the project site generally extends northwest-southeast and northeast-southwest. To simplify the direction descriptions used in this document, roadways progressing along the peninsula toward the City of San Francisco (e.g., US 101) are designated northbound-southbound roadways and roadways progressing towards San Francisco Bay (e.g., Marsh Road) are designated eastbound-westbound. All compass directions referenced in this document will use this orientation and north arrows on all figures note this directional convention as "project" north.



LSA

FIGURE 1-1

0 1000 2000
FEET

PROJECT NORTH
TRUE NORTH
N

111 Independence Drive Project Initial Study
Project Location and Regional Vicinity Map

SOURCE: National Geographic (c) 2018; Esri World Street Map (c) 2018.

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FIGURE 1-2

111 Independence Drive Project Initial Study

Aerial Photograph of the Project Site and Surrounding Land Uses

SOURCES: GOOGLE EARTH 8/9/18; LSA, 2019,

P:\CMK1901 111 Independence Drive\PRODUCTS\Graphics\IS Figures\Figure 1-2.ai (5/2/19)

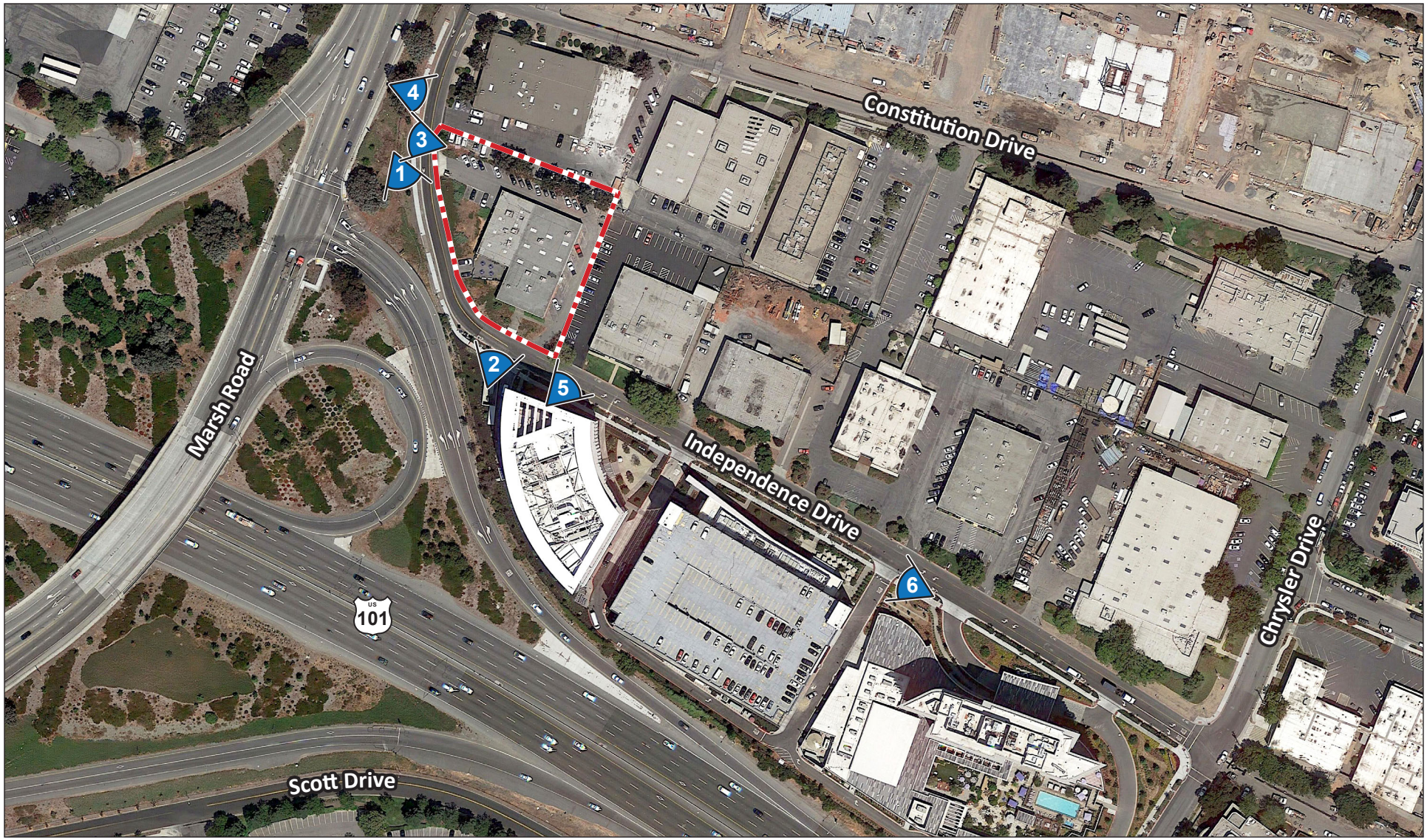


FIGURE 1-3

LSA

0 100 200
FEET

PROJECT NORTH
TRUE NORTH
N

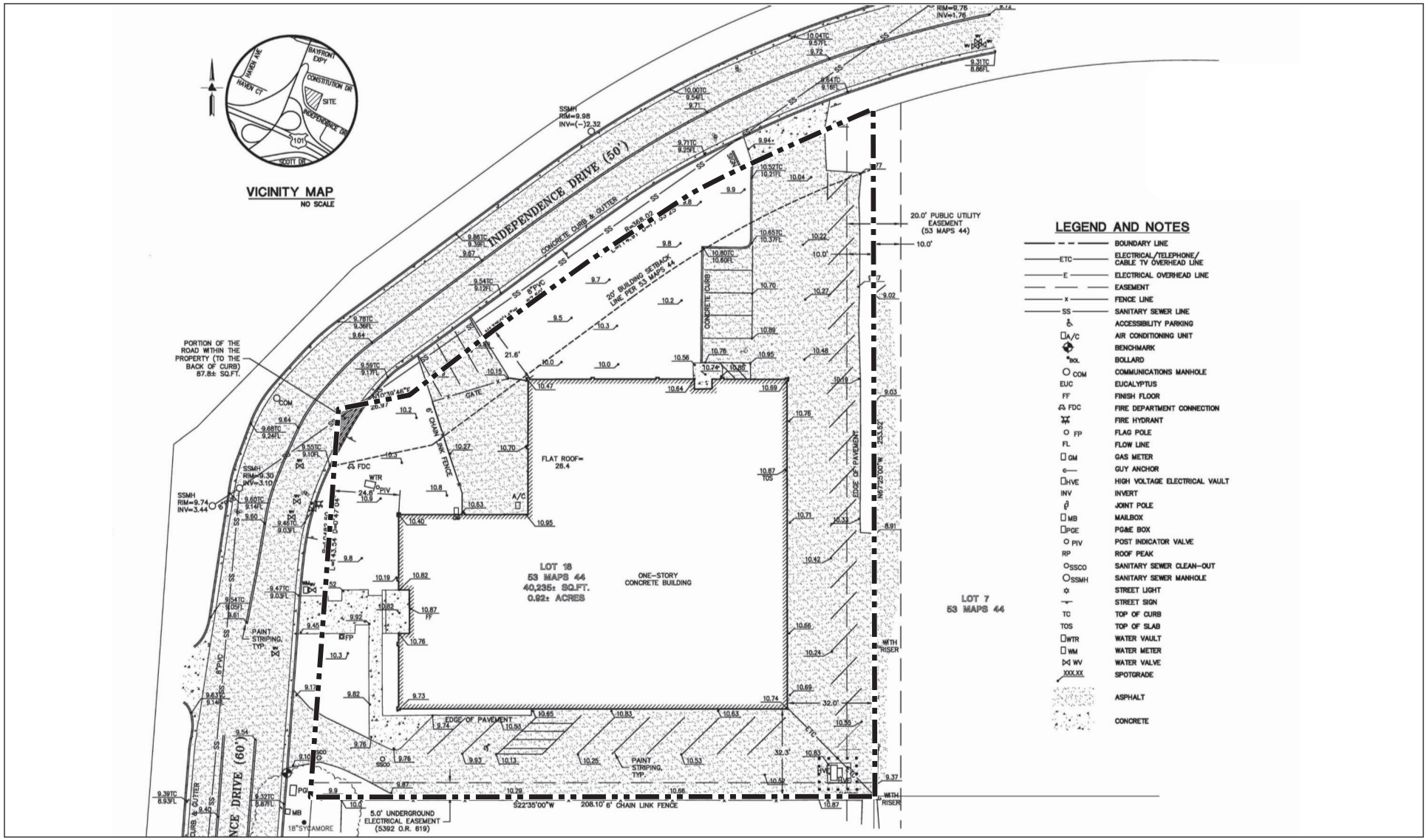
2 Photo Locations (Figures 1-5, 1-16 through 1-17)

Project Site

111 Independence Drive Project Initial Study
Photo Locations

SOURCES: GOOGLE EARTH 8/9/18; LSA, 2019,

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LSA

FIGURE 1-4

0 32 64
FEET

TRUE NORTH
PROJECT NORTH

Project Boundary

111 Independence Drive Project Initial Study
Existing Site Conditions

SOURCE: BDE ARCHITECTURE, FEBRUARY 2019.

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Photo 1: Existing building, as seen from Independence Drive/Constitution Drive



Photo 2: Existing building, as seen from Independence Drive

LSA

FIGURE 1-5

111 Independence Drive Project Initial Study
Photos of Existing Site

SOURCE: LSA, 2019.

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Regulatory Setting

The project site is designated Mixed Use Residential on the City of Menlo Park's (City) General Plan Land Use Designations Map, which was recently updated as part of the City's General Plan Land Use and Circulation Elements Update (referred to herein as ConnectMenlo). The purpose of the update was to create live/work/play environments and to encourage office, research and development, residential, commercial uses, and hotels, all in close proximity or integrated with one another in the Bayfront Area, which is generally located north of US 101. The Mixed Use Residential designation provides for higher density housing to meet the needs of all income levels. This designation is intended to promote live/work/play environments oriented towards pedestrians, transit, and bicycle use, especially for commuting to nearby jobs.[2] The maximum base residential density is 30 units per acre.

The project site is located within the Residential Mixed Use Bonus (R-MU-B) zoning district.[3] The purpose and intent of the R-MU-B zoning district is to: 1) provide high density housing to nearby employment; 2) encourage mixed use development with a quality living environment and neighborhood-serving retail and services on the ground floor that are oriented to the public, and promote a live/work/play environment with pedestrian activity.[4]

Background

On November 29, 2016, the Menlo Park City Council certified the ConnectMenlo Final Environmental Impact Report (ConnectMenlo Final EIR)[5, 6] and approved updates to the Land Use and Circulation Elements of the General Plan.[7] ConnectMenlo also included changes to the City's zoning map and rezoned specific properties to reflect the General Plan updates, including the new land uses within the Bayfront Area of the City. The ConnectMenlo Final EIR provided a program-level analysis of the development potential envisioned for the entire City, including the increased development potential in the Bayfront Area. ConnectMenlo specifically identifies new development potential in the Bayfront Area of up to 2.3 million square feet of non-residential space, 400 hotel rooms, 4,500 residential units, 11,570 residents, and 5,500 employees. The buildout potential for future development is expected to occur over a 24-year buildout horizon (from approximately 2016 to 2040).

On December 29, 2016, the City of East Palo Alto filed suit challenging the certification of the ConnectMenlo Final EIR. The City of East Palo Alto alleged that the City of Menlo Park did not comply with the California Environmental Quality Act (CEQA) because the EIR underestimated the

2 Menlo Park, City of, 2016. *Menlo Park General Plan*. November 29.

3 Menlo Park, City of, 2019. City of Menlo Park GIS Viewer. Available online at: cmpweb2.menlopark.org/Html5Viewer/Index.html?configBase=https://cmpweb2/Geocortex/Essentials/REST/sites/Menlo_Park/viewers/MPGVH/virtualdirectory/Resources/Config/Default (accessed March 13, 2019).

4 Menlo Park, City of, 2019. Menlo Park Municipal Code. January 15.

5 Menlo Park, City of, 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Public Review Draft Environmental Impact Report*, SCH#2015062054. June 1.

6 Menlo Park, City of, 2016. *ConnectMenlo: General Plan Land Use and Circulation Elements and M-2 Area Zoning Update, Public Review Final Environmental Impact Report*, SCH#2015062054. October 10.

7 Menlo Park, City of, 2016. *General Plan: ConnectMenlo, Menlo Park Land Use and Mobility Update*. November 29.

amount of new employment and failed to adequately analyze the traffic impacts that would result from development under ConnectMenlo. To resolve the litigation, the City of Menlo Park and the City of East Palo Alto entered into a settlement agreement. The key terms of the settlement agreement are as follows:

1. Reciprocal Environmental Review for Future Development Projects. Menlo Park will prepare an EIR for any project located in the Office (O), Life Science (LS) or Residential Mixed Use (R-MU) district that exceeds 250,000 net new square feet and would require a use permit, that proposes bonus level development, that proposes a master plan project, or that may have a significant environmental impact. Menlo Park may, with the exception of housing and traffic (which were the focus of East Palo Alto's challenge), simplify the environmental review for future development projects by incorporating analysis and discussions from the ConnectMenlo Final EIR pursuant to CEQA Guidelines Section 15168(d). East Palo Alto will prepare an initial study for future development projects to determine the appropriate level of environmental review and will conduct that review, which can be simplified by incorporating by reference analysis and discussions from its General Plan update referred to as Vista 2035.

2. Reciprocal Traffic Studies. Menlo Park and East Palo Alto will work together to ensure that future development projects' potentially significant traffic impacts on the other jurisdiction are analyzed and mitigated.

3. Reciprocal Study of Multiplier Effect. When the preparation of an EIR is required as described above, Menlo Park or East Palo Alto, as applicable, will conduct a Housing Needs Assessment, which to the extent possible, will include an analysis of the multiplier effect for indirect and induced employment.

This Initial Study was prepared in accordance with the terms of the settlement agreement and CEQA Guidelines Sections 15152 and 15168 and incorporates by reference the information contained in the ConnectMenlo Final EIR. Per CEQA Guidelines Section 15168 later activities occurring under a program EIR may be examined in light of the program EIR and tier from the program EIR as provided for in CEQA Guidelines Section 15152. Per CEQA Guidelines Section 15152, "where an EIR has been prepared and certified for a program… consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program… should limit the EIR… on the later project to effects which: 1) were not examined as significant effects on the environment in the prior EIR; or 2) are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means." The analysis provided in this Initial Study tiers from the ConnectMenlo Final EIR.

Proposed Project

This section provides a description of the proposed project as identified in the project sponsor's application materials submitted to the City, dated May 29, 2019.[8] The proposed project would result

[8] SP Menlo LLC, 2019. City of Menlo Park Development Permit Application for the 111 Independence Drive Project. May 29. It should be noted that project plans may be subject to refinement prior to project approval.

in the demolition of existing office space and redevelopment of the project site with an approximately 145,350-gross-square-foot (gsf), eight-story multi-family apartment building with approximately 105 dwelling units and an approximately 712-square-foot potential commercial space, as well as associated open space, circulation and parking, and infrastructure improvements. In addition, the proposed project would include dedication of the 87.8 square feet of Independence Drive that are currently within the project site as well as a public access easement to construct a portion of the public sidewalk within the project site. Individual project components are further described below.

Figure 1-6 through Figure 1-11 depict the currently available conceptual site plans for the first through eighth floors of the proposed building. Figure 1-12 and Figure 1-13 depict conceptual building elevations as seen from surrounding roadways. Figure 1-14 depicts conceptual sections of the proposed building. A conceptual landscaping plan is shown in Figure 1-15.

Building Program

The proposed project would result in the demolition of existing office square footage and the redevelopment of the project site with an eight-story multi-family apartment building including three levels of above ground parking. The ground floor would be raised 30 inches above grade to accommodate flood plain design requirements. The proposed building would have a maximum height of 95 feet not including parapet walls, mechanical equipment, and elevator and stair overruns. The parapet walls would vary but generally be 5.5 feet in height around the perimeter of the building and elevator and stair overruns would extend up to 99 feet. The average height of the proposed building would be approximately 63.46 feet.

The ground floor of the proposed building would include the first level of the parking garage, bicycle parking and bike shop space, a fitness room, a leasing office, the mailroom, and stairwells and elevators providing access to the residential portion of the building. An approximately 712-square-foot potential commercial space would also be located at the ground level and may include a café/coffee shop.

The second and third floors would also include the parking garage, the program for which is further described below in Section 3.3.3, and 2 residential units on the second floor and 15 residential units on the third floor. The fourth floor would include 17 residential units, an approximately 950-square-foot indoor community space and an approximately 7,311 outdoor courtyard. The fifth through seventh floors of the proposed building would each include 18 residential units, with private porches facing either Independence Drive or the interior of the building available on a portion of the units. The eighth floor of the proposed building would include 17 residential units, and an approximately 890-square-foot outdoor terrace and 554-square-foot indoor kitchenette and seating area.

A total of approximately 73,333 square feet of residential uses (approximately 105 dwelling units) would be located on the second floor and above. Units would average 698 square feet, with 29 studios, 67 one-bedroom units, and 9 two-bedroom units. The project sponsor is currently proposing that a total of 14 residential units (15 percent) be affordable to moderate and low income households. Moderate income households are those earning up to 120 percent of the area median income. This is a deviation from the City's inclusionary housing requirement that units be provided

for low income households, which are those earning between 51 and 80 percent of the area median income. Density above the maximum bonus level residential density and gross floor area above the maximum permitted residential gross floor area and floor area ratio would be achieved through the density bonus provision of the City's Below Market Rate Housing Program. In addition, this program would also allow an exceedance of the maximum average height limit.

The proposed project would be constructed to complement the adjacent Menlo Gateway buildings on Independence Drive, which have a convex curved façade, with a concave curvature to the façade on the upper floors. The base of the proposed building would be a convex curved façade with metal awnings set back from Independence Drive via public open space.

Open Space and Landscaping

A total of approximately 16,729 square feet of open space would be provided at the ground floor and the fourth and eighth floors of the proposed building. Private residential open space would consist of common courtyards, private balconies, and a roof terrace, totaling approximately 10,346 square feet. Common useable space for residents on the ground floor would include an approximately 3,257-square-foot yard in the northwest corner of the project site, which may include a bocce ball court and dog run. The common outdoor courtyard would be located on the northwestern corner of the fourth floor and would be approximately 7,311 square feet in size. This courtyard would include a pool, dining plaza, seating areas, and other similar features. Private balconies would be provided with some residential units, facing either Independence Drive or the interior of the site. Publicly-accessible open space on the project site would consist of the approximately 6,383-square-foot plaza adjacent to Independence Drive that would provide access to the proposed building and also provide space for outdoor seating.

Approximately 12 new trees would be planted on the project site, including along Independence Drive, along the rear yard and within the fourth floor courtyard. In addition, planter beds would be installed within all of the open space areas mentioned above, as shown on Figure 1-15.

Access, Circulation and Parking

Pedestrian access to the proposed building would be provided by Independence Drive and from within the site interior. As described above, a residential lobby would be provided on the ground floor, and the residential units would be accessed via two stairwells and two elevators in the northern and southern portions of the proposed building.

An at-grade, three-level, approximately 49,582-square-foot, 115-space parking garage would be located within the proposed building at the northeast corner. The ground floor of the parking garage would provide 40 parking spaces, the second floor would provide 39, and the third floor would provide 36. Of the 115 parking spaces, 5 are required to be ADA-compliant spaces.

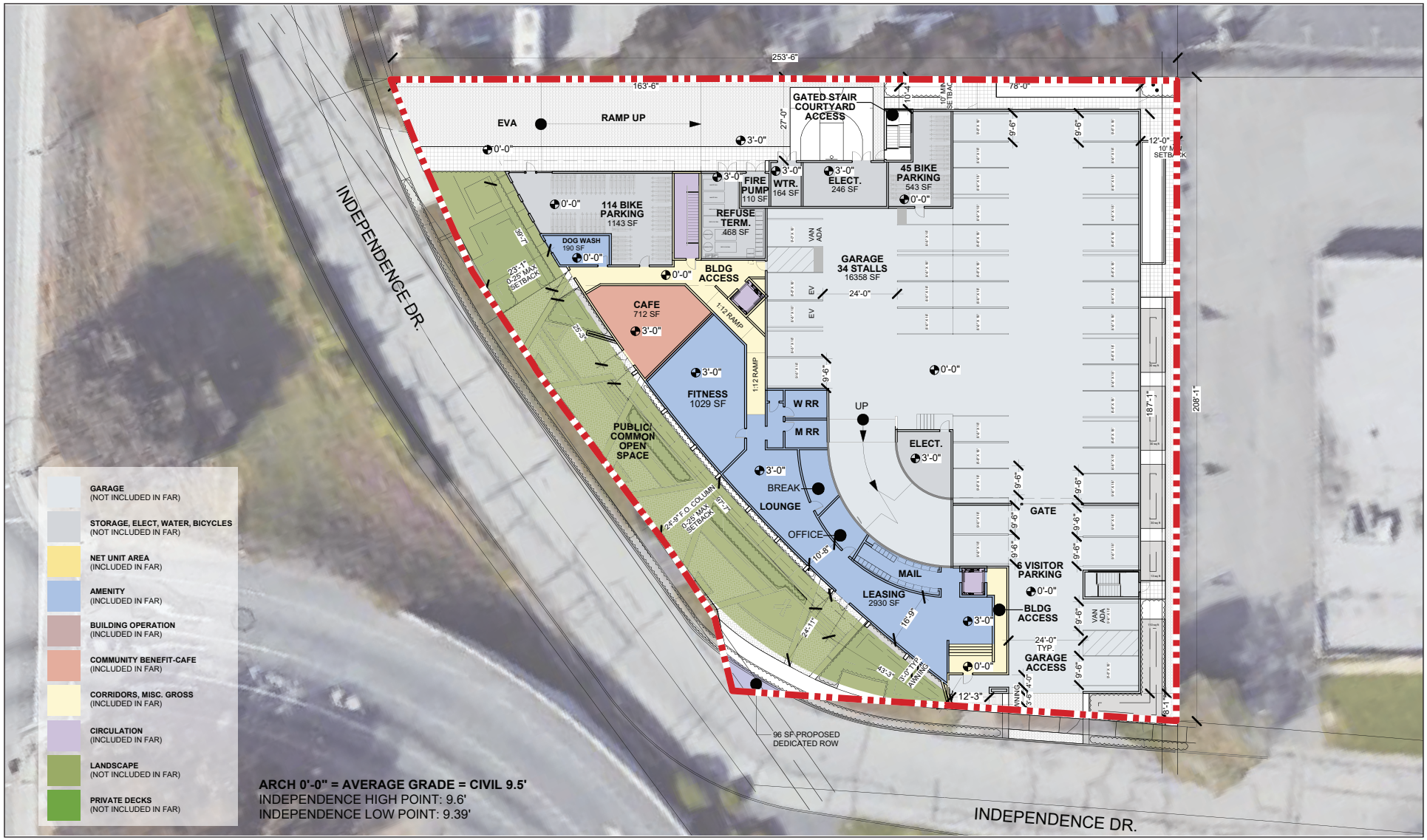


FIGURE 1-6

LSA

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project Initial Study
Conceptual Ground Floor Site Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

P:\CMK1901 111 Independence Drive\PRODUCTS\Graphics\IS Figures\Figure 1-6.ai (6/4/19)



FIGURE 1-7

LSA

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project Initial Study
Conceptual Second Floor Site Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

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FIGURE 1-8

LSA

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project Initial Study
Conceptual Third Floor Site Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

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LSA

FIGURE 1-9

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project Initial Study
Conceptual Fourth Floor Site Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

P:\CMK1901 111 Independence Drive\PRODUCTS\Graphics\Figures\IS Figure 1-9.ai (6/4/19)



LSA

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

FIGURE 1-10

111 Independence Drive Project Initial Study
Conceptual Fifth through Seventh Floor Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

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FIGURE 1-11

LSA

NOT TO SCALE

TRUE NORTH
PROJECT NORTH
N

Project Site

111 Independence Drive Project Initial Study
Conceptual Eighth Floor Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

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LSA

FIGURE 1-12

NOT TO SCALE

SOURCE: BDE ARCHITECTURE, MAY 2019.

111 Independence Drive Project Initial Study

Conceptual Building Elevations - Southwestern and North

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LSA

FIGURE 1-13

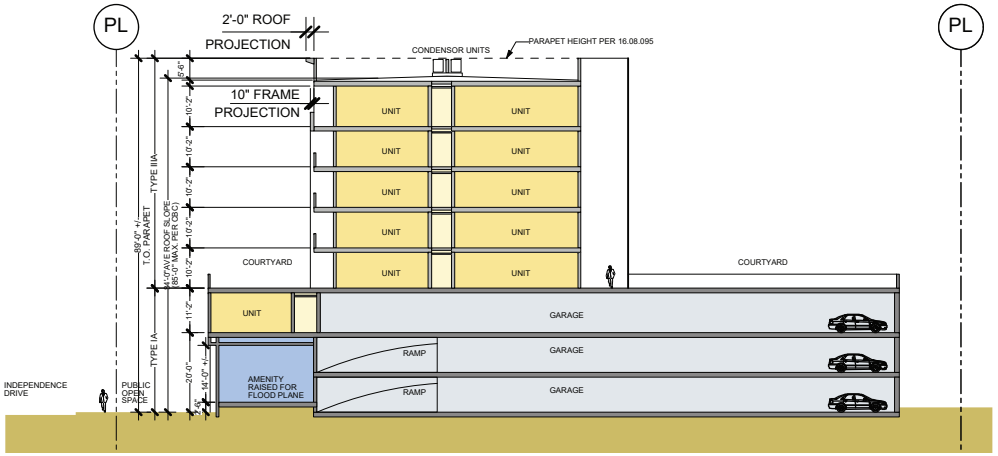
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SOURCE: BDE ARCHITECTURE, MAY 2019.

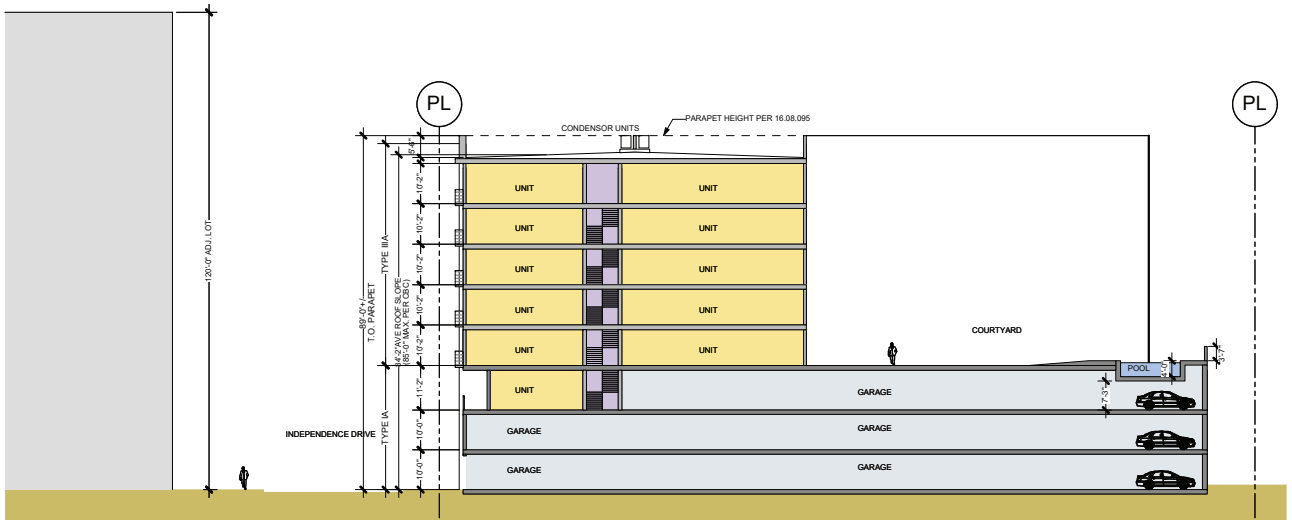
111 Independence Drive Project Initial Study

Conceptual Building Elevations - South and East

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BUILDING SECTION 2



BUILDING SECTION 1

LSA

FIGURE 1-14

NOT TO SCALE

SOURCE: BDE ARCHITECTURE, MAY 2019.

111 Independence Drive Project Initial Study
Conceptual Building Sections

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LSA

0 16 32
FEET

TRUE NORTH
PROJECT NORTH
N

FIGURE 1-15

111 Independence Drive Project Initial Study
Conceptual Landscape Plan

SOURCE: BDE ARCHITECTURE, MAY 2019.

P:\CMK1901 111 Independence Drive\PRODUCTS\Graphics\IS Figures\Figure 1-15.ai (6/4/19)

Access to the parking garage would be via a single two-way entry point at the southeastern corner of the project site from Independence Drive. In addition, the ground floor would also include an access ramp along the northern boundary of the project site to provide emergency vehicle access (EVA).

A total of 175 bicycle parking spaces would be provided throughout the ground level of the project site, including 159 long-term spaces within a designated bicycle storage room within the first floor for residents, and 16 short-term spaces near the entrance to the parking garage at the southern end of the project site.

Utilities, Infrastructure and Easements

The project site is located in an urban area with existing utilities and infrastructure. The proposed project would be required to install the following utility connections to the satisfaction of the applicable utility providers: water; wastewater; stormwater drainage; gas and power; and telecommunications services. Connections to existing infrastructure would occur within the adjacent public right-of-way.

The proposed project would include the following elements that would reduce the demand for utilities and infrastructure: a landscaped area providing stormwater treatment on the western edge of ground floor; drought-tolerant landscaping; flow-through planters; and energy-efficient appliances and efficient irrigation systems. In addition, as mentioned above, the project sponsor would underground utility poles that border the site.

The existing project site includes approximately 31,496 square feet of impervious surfaces and approximately 8,739 square feet of pervious surfaces. The proposed project would result in a net increase in impervious surface coverage of approximately 2,675 square feet compared to existing conditions.

As noted above, the proposed project would include the dedication of the approximately 87.8-square-foot portion of Independence Drive within the project site for continued use by the City as well as a public access easement to construct a portion of the public sidewalk within the project site.

Demolition, Grading and Construction

The proposed project would include demolition of the existing office building and surface parking lot on the project site. Construction debris, such as old foundations, pavements, and structures, would be collected and hauled off site for disposal. Approximately 875 cubic yards of demolition waste would be generated by the proposed project.

Up to 100 feet of site soils would be excavated to remove materials that may not be suitable for project development. Up to 1,925 cubic yards of soils would be removed from the site for excavation, utility trenching, and foundations, 350 cubic yards of which would be retained on-site and used as fill, and 1,575 cubic yards of which would be off-hauled. A total of 400 cubic yards of soils would be imported to the site to raise the grade to meet Federal Emergency Management Agency (FEMA) requirements. Excavation depths would be a maximum of 1.5 feet for the proposed

building and parking garage, and 3.5 feet for the bio-retention areas. Foundation footings may extend up to 30 feet below grade and impact pile driving may be required.

If approved, construction of the proposed project is anticipated to begin in approximately May 2020 and would occur over a 21 month period. Demolition activities are anticipated to occur over an approximately 15 day period and grading would occur over a 60 day period. Exterior work, such as foundation installation, building construction, and installation of pavements is expected to occur over a 4 to 5 month period. The proposed project is anticipated to be fully operational and occupied by approximately February 2022.

9. Surrounding Land Uses and Setting:

The project site is located in the northern area of the City, within the Bayfront Area near Bedwell Bayfront Park and San Francisco Bay. The Bayfront Area is generally bounded by US 101, San Francisco Bay, and the city limits of Atherton, Redwood City, and East Palo Alto. The site is generally surrounded by a mix of uses, including older buildings and new construction, as depicted in Figure 1-3 and further described below. Figure 1-16 and Figure 1-17 include photos of surrounding land uses; refer to Figure 1-3 for photo viewpoint locations.

- **North of the Project Site.** The project site is immediately bordered to the north by Independence Drive and Marsh Road, which includes on- and off-ramps to US 101 (Photo 6). Across Marsh Road are office and light manufacturing uses.

- **East of the Project Site.** The project site is bordered immediately to the east by a single-story commercial and office building (Photo 3) and Constitution Drive, a two-lane roadway that connects Marsh Road to the Facebook campus to the south. The City has received a development application, which would result in the construction of an approximately 320 unit multi-family residential building and 34,708 square foot commercial building, for the neighboring properties at 115 Independence Drive, and 104 and 110 Constitution Drive. Further east of the project site are additional office buildings, the Constitution Site of the Menlo Gateway project,[9] which is currently under construction and anticipated to be complete in December 2019, SR 84, and the Bedwell Bayfront Park, an approximately 160-acre park managed by the City.

- **South of the Project Site.** The project site is bordered immediately to the south by a single-story office building currently occupied by a commercial use (Photo 4). Further south of the project site are additional commercial and light manufacturing uses. The Facebook campus, consisting of approximately 14 buildings along SR 84, begins approximately 0.5 mile south of the project site. Union Pacific Railroad (UPRR) tracks are also located just south of the Facebook campus. Across the UPRR tracks and approximately 1 mile south of the site is the Belle Haven residential neighborhood, which is generally occupied by single family residences.

[9] The Menlo Gateway project, approved in 2010, includes three office buildings, three parking structures, a hotel, and a private health club and cafe on 15.9 acres at 100 to 200 Independence Drive (west of the project site) and 101 to 155 Constitution Drive (east of the project site).



Photo 3: Vegetated area adjacent to the Marsh Road/US-101 interchange, north of the project site



Photo 4: 104 Constitution Drive, east of the project site

LSA

FIGURE 1-16

111 Independence Drive Project Initial Study
Photos of Surrounding Land Uses

SOURCE: LSA, 2019.

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Photo 5: 115 Independence Drive, south of the project site



Photo 6: 100 Independence Drive, west of the project site

LSA

FIGURE 1-17

111 Independence Drive Project Initial Study
Photos of Surrounding Land Uses

SOURCE: LSA, 2019.

P:\CMK1901 111 Independence Drive\PRODUCTS\Graphics\IS Figures\Figure 1-17.ai (5/2/19)

- **West of the Project Site.** The project site is bordered immediately to the west by the Independence Site of the Menlo Gateway project, which consists of multiple office buildings (Photo 5) and an 11-story hotel. Further west is US 101 and the Marsh Road off-ramp, across which are commercial and healthcare uses.

10. Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):

A number of permits and approvals would be required to allow development of the proposed project. As lead agency for consideration of the proposed project, the City of Menlo Park would be responsible for the majority of the approvals required for project development. Other agencies also may have some authority related the proposed project and its approvals. A list of required permits and approvals, including the discretionary actions described above, which may be required by the City and other agencies, is provided in Table 1.A.

Table 1.A: Anticipated Permits and Approvals for Project Implementation

Lead Agency	Permit/Approval
City of Menlo Park	● EIR Certification ● Use Permit ● Below Market Rate Housing Agreement ● Architectural Control
Responsible Agencies	
Pacific Gas & Electric (PG&E)	● Undergrounding of electrical infrastructure ● Approval of electric/natural gas improvements and connection permits
California Department of Transportation (Caltrans)	● Review of traffic circulation effects and consultation on potential traffic improvements that may affect state highway facilities, ramps, and intersections
California Regional Water Quality Control Board/San Mateo Countywide Water Pollution Prevention Program	● Approval of National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge
City/County Association of Governments	● Review of potential effects on Routes of Regional Significance
Bay Area Air Quality Management District (BAAQMD)	● Permits for onsite generators, boilers, and other utility equipment
San Mateo County Transportation Authority	● Review of potential effect on public transit
San Mateo County Environmental Health Division	● Review of onsite generators
Menlo Park Fire Protection District	● Residential Site Plan review
West Bay Sanitary District	● Approval of wastewater hookups

Source: LSA (2019).

There will be a fiscal impact analysis conducted regarding the project. In order to qualify for bonus-level development within the R-MU-B zoning district, the proposed project will also be required to complete an appraisal process to identify the value of the community amenities to be provided in exchange for the opportunity to develop at the bonus level.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

A request form describing the proposed project was sent to the Native American Heritage Commission (NAHC) in West Sacramento requesting a list of tribes eligible to consult with the City, pursuant to Public Resources Code section 21080.3.1. On May 24, 2019, the NAHC responded in a letter with a list of tribal contacts. The City sent a letter providing the opportunity for consultation pursuant to Assembly Bill 52 (AB 52) for the project to these individuals. No requests for consultation have been received to date. The consultation process and its conclusion will be further discussed in the EIR.

2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist in Chapter 3.0.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☒ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☒ Noise	☒ Population/Housing	☐ Public Services
☐ Recreation	☒ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

2.1 DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☒ I find that the proposed project MAY have a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Kaitie Meador, Senior Planner

6/11/19

Date

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3.0 CEQA ENVIRONMENTAL CHECKLIST

3.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c. In non-urbanized 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 a 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?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Pursuant to Public Resources Code Section 21099, certain types of projects located within a transit priority area are exempt from the consideration of environmental impacts related to aesthetics.

The nearest public transit stop to the project site is served by SamTrans Route 270 and is located approximately 0.3 miles to the north on Haven Avenue. Route 270 operates on an hourly timetable and provides access to the Redwood City Transit Center, located approximately 4.5 miles north of the site. The Atherton Caltrain Station is located approximately 2.8 miles west of the site; however, direct local public transit service to this station is not provided within the vicinity of the site. Facebook is currently constructing a new bus stop to serve the Chilco Campus at 180-200 Jefferson Drive, a few blocks from the project site; however, this bus stop serves buses and trams used by Facebook employees only and does not provide public transit service.

Although the proposed project is a residential development located on an infill site, the project is not located within a transit priority area as defined by Public Resources Code section 21099, because the SamTrans Route 270 stop is not defined as a major transit stop (typically defined as stops with 15-minute headways) and because no other major transit stops are located within one half mile or less of the project site. Therefore, the proposed project's potential impacts related to aesthetics are discussed below.

a. Would the project have a substantial effect on a scenic vista? ***(Less-Than-Significant Impact)***

As stated in the ConnectMenlo Final EIR, scenic corridors are considered public views as seen along a linear transportation route and scenic vistas are views of a specific scenic feature. Scenic vistas are generally interpreted as long-range views, while scenic corridors are short-, middle-, and long-range views. The City has not designated any official scenic corridors or vistas. However, the

ConnectMenlo Final EIR considered views of the Santa Cruz Mountain Range, views to the Bay, and views of the foothills and San Francisquito Creek within the City as scenic vistas.

The ConnectMenlo Final EIR determined that more intense development and increases in proposed building heights in the Bayfront Area, where the project site is located, could block views of the Bay and its scenic resources from various vantage points. Due to the natural topography and location of the Bayfront Area at the City's northern border, the far-field views of the Santa Cruz Mountain Range, foothills and San Francisquito Creek would not be impacted by new development occurring within the Bayfront Area. Because the topography in the Bayfront Area is essentially flat, the views from street-level to the scenic resources are currently inhibited by existing conditions such as buildings, structures, overhead utilities, and mature trees/vegetation. As such, the maximum heights currently permitted limit the opportunity for views of scenic vistas from street-level public viewing. Therefore, the height increases permitted with ConnectMenlo, which are limited to certain parcels in the Bayfront Area including the project site, would not cause any further substantial obstruction from the street level view to any scenic resource.

The developed parcels in the Bayfront Area are not considered public Bay-viewing destination points. Public Bay-viewing destination points include the Bayfront Expressway and the San Francisco Bay Trail. No new development is planned for between the Bay and these viewing points; thus, no obstruction of views would occur under ConnectMenlo. Furthermore, potential future development Citywide, including the proposed project, would be subject to the City's existing architectural control process, in accordance with Section 16.68.020 of the Zoning Ordinance and would be required to comply with existing design standards outlined in the Zoning Ordinance. The design standards, which apply to all new construction, ensure development within the R-MU zoning district results in high-quality design.

Therefore, because the project site is located within a developed portion of the Bayfront Area and does not provide public views of the Bay, and because the proposed project would be subject to the City's existing architectural control process, this impact would be less than significant.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? ***(Less-Than-Significant)***

As noted in the ConnectMenlo Final EIR, the section of Interstate 280 (I-280) within the City is considered a State scenic highway. However, none of the potential new growth under ConnectMenlo would result in more intense development or increase heights within the I-280 viewshed. The project site is located within the Bayfront Area, which was considered for new growth, and is therefore not located within the viewshed of I-280. In addition, the existing building was built in 1972 and is not considered a historic resource, as noted in Section 3.5, Cultural Resources. Therefore, this impact would be less than significant.

c. In non-urbanized areas, would the project 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 a 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? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that future development occurring under ConnectMenlo would create a shift in uses in the Bayfront Area from light industrial and business park uses to office, technology, research and development, life sciences and mixed-use with multi-family residential and commercial, and involve notable changes in building intensity and height from 35 feet to 120 feet. However, given the existing commercial, industrial, and residential uses surrounding the areas of potential new growth, the gradual development of future projects would continue to be compatible with the existing visual character and quality of the Bayfront Area and its surroundings.

The proposed project would consist of an eight-story multi-family residential building within the Bayfront Area with a maximum height of 95 feet and an average height of 63.46 feet. The maximum allowed average height for the project site is 62.5 feet; however, the project sponsor is requesting an increase in the allowable average through the City's Below Market Rate Housing Program. As noted above, the proposed project would be subject to the City existing architectural control process, which would ensure the proposed project complies with the existing design standards outlined in the Zoning Ordinance. Therefore, the proposed project would have a less-than-significant impact related to scenic quality.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? ***(Less-Than-Significant Impact)***

As stated in the ConnectMenlo Final EIR, the City 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 onsite light and glare is caused by surrounding land uses and traffic, specifically from US 101 and the Bayfront Expressway in the Bayfront Area. In addition to new building, security, and lighting for parking areas, buildout of the Bayfront Area would also include lighting aimed at properly illuminating the overall Bayfront Area. Additionally, new larger buildings with more exterior glazing could result in new sources of glare.

New development in the Bayfront Area, including the proposed project, would be required to comply with General Plan policies that ensure new land uses do not generate excessive light levels that would spill on to adjacent sensitive receptors and reduce light and glare spillover from future development to surrounding land uses. Specifically, Policy LU-2.3 requires that new development with residential units address potential compatibility issues such as light spillover. The proposed project would be required to comply with this policy as part of the site plan review and architectural control process Therefore, the proposed project would have a less-than-significant impact related to substantial light or glare.

3.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (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))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. 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?	☐	☐	☐	☒

a. Would the project 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? ***(No Impact)***

The project site and vicinity are located within an urban area in the City of Menlo Park. There are no agricultural resources located on or near the project site. The project site is classified as "Urban and Built-Up land" by the State Department of Conservation.[10] Therefore, development of the proposed project would not convert agricultural land to non-agricultural uses. The proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use.

[10] California Department of Conservation, 2016. California Important Farmland Finder (map). Website: maps.conservation.ca.gov/dlrp/ciff (accessed April 10, 2019).

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? ***(No Impact)***

The project site is within the R-MU-B zoning district and is not under a Williamson Act contract.[11] Therefore, the proposed project would not conflict with existing zoning for an agricultural use or a Williamson Act contract.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (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))? ***(No Impact)***

The developed project site is located within an urban area in the City of Menlo Park and is within the City's R-MU-B zoning district. Therefore, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use? ***(No Impact)***

Refer to Section 3.2.c. The proposed project would not result in the loss of forest land or conversion of forestland to non-forest uses.

e. Would the project 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? ***(No Impact)***

Refer to Sections 3.2.a and 3.2.c. The project site is located within an existing urban environment and would not result in the extension of infrastructure into an undeveloped area, the development of urban uses on a previously undeveloped greenfield site, or other physical changes that would result in the conversion of farmland to non-agricultural uses or forest land to non-forest uses. The proposed project would not adversely affect agricultural or forestry resources.

[11] California Department of Conservation, 2012. *San Mateo County Williamson Act FY 2006/2007 (map)*. Available online at: ftp.consrv.ca.gov/pub/dlrp/wa (accessed April 10, 2019).

3.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

a. through c. ***(Potentially Significant Impact)***

The ConnectMenlo Final EIR found that future development would result in a substantial long-term increase in criteria air pollutants. The ConnectMenlo Final EIR identified Mitigation Measures AQ-2a, AQ-2b, and AQ-2b2, which require a technical assessment evaluating potential project operation- and construction phase-related air quality impacts and compliance with the Bay Area Air Quality Management District's (BAAQMD) basic control measures for reducing construction emissions. In addition, based on the proposed project's location in proximity to US 101, Marsh Road, and SR 84, and consistent with the requirements of Mitigation Measure AQ-3b from the ConnectMenlo Final EIR, a health risk assessment is required to determine the potential health risk to future residents of the project site.

As noted in Section 3.17, a transportation evaluation will be prepared. This evaluation may identify new or more significant impacts related to transportation, and therefore air quality, than was previously analyzed in the ConnectMenlo Final EIR. Development activity associated with implementation of the proposed project could increase pollutant concentrations in Menlo Park through increased vehicle trips and construction. This increase could contribute to existing air pollution in the San Francisco Bay Area Air Basin and has the potential to exceed regional air emission thresholds established by the BAAQMD. Construction activities associated with project development, including building demolition, grading, and ground disturbance, could increase concentrations of particulate matter and could expose sensitive receptors to toxic air contaminants. Therefore, the criteria identified above for topics 3.a through 3.c will be evaluated in an EIR. Mitigation measures will be recommended if necessary.

d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR concluded that buildout potential analyzed under ConnectMenlo could include potential odor sources that could affect new sensitive receptors, such as composting, greenwaste, and recycling operations; food processing; and painting/coating operations. Responses to odors are subjective, and vary by individual and type of land use. Residential uses are not included in Table 4.2-9 of the ConnectMenlo Final EIR, which lists uses that could be required to undergo environmental review to ensure sensitive land uses are not exposed to objectionable odors, and the proposed project would not be a source of odors. Therefore, the proposed project would not result in other emissions, such as those leading to odors, that would adversely affect a substantial number of people, and this impact would be less than significant.

3.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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 plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐
c. 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?	☐	☐	☒	☐
d. 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?	☐	☐	☒	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a. Would the project 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 plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that 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 to occur in the Menlo Park vicinity. ConnectMenlo included goals, policies, and programs and bird-safe regulations for the Bayfront Area that would help protect special-status species and birds and minimize impacts.

The project site is currently developed and does not include any sensitive habitat, nor is it located near any sensitive habitats, and therefore a project-specific baseline biological resources assessment pursuant to Mitigation Measure BIO-1 from the ConnectMenlo Final EIR would not be required. In addition, the proposed project would be required to comply with the bird-safe design measures included in the building regulations for the Bayfront Area. Therefore, the proposed project would

not result in direct or indirect adverse effects on special-status plant or wildlife species and this impact would be less than significant.

b. Would the project 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? ***(Less-Than-Significant Impact)***

As stated in the ConnectMenlo Final EIR, sensitive natural communities within the City consist of areas of coastal salt march vegetation in the baylands, native valley oaks in Saint's Patrick's Seminary, and possibly areas of riparian scribs and woodland along San Francisquito Creek and other drainages. The project site is currently developed and is not located within or in the immediate vicinity of one of these areas, and therefore would have a less-than-significant impact related to riparian habitat.

c. Would the project 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? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that development could have a significant adverse effect on wetlands by allowing development on previously undeveloped parcels in the Bayfront Area with mapped wetlands, which are along University Avenue. The project site is currently developed and does not support any federally protected wetlands. Compliance with all applicable requirements associated with the protection of water quality in stormwater runoff would further ensure that there are no impacts to wetlands within or beyond the Bayfront Area as a result of the proposed project. Compliance with stormwater quality requirements is discussed in Section 3.10, Hydrology and Water Quality, of this Initial Study.

d. Would the project 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? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that development and land use activities consistent with ConnectMenlo would result in a reduction in the remaining natural habitat within the City. However, most wildlife in these areas are already acclimated to human activity in the urbanized portions of the City. As noted above, the project site is currently developed and does not contain, nor is it located near, any sensitive habitats. Ornamental landscaping located throughout the project site would be removed. Vegetation and landscaping generally have the potential to support nests of common native bird species. All native birds and their nests, regardless of their regulatory status, are protected under the federal Migratory Bird Treaty Act and California Fish and Game Code. However, because the project site is located in a busy urban area and vegetation on the project site is limited, potential impacts to nesting birds would be less than significant.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ***(Less-Than-Significant Impact)***

The City's Tree Preservation Ordinance requires a permit to remove any protected trees. There are no mature trees on the project site; therefore, the proposed project would not conflict with the City's Tree Preservation Ordinance. The proposed project would include the planting of approximately 12 new trees, as well as the installation of new landscaping that would be in compliance with Municipal Code Chapter 12.44, Water-Efficient Landscaping, and therefore would not conflict with any local policies or ordinances protecting biological resources and this impact would be less than significant.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ***(No Impact)***

As noted in the ConnectMenlo Final EIR, portions of the City are within the Stanford University Habitat Conservation Plan (Stanford HCP).[12] However, the Stanford HCP only applies to land owned by Stanford University. The project site is not owned by Stanford University, and therefore is not located within the boundaries of an adopted conservation plan. Therefore, the proposed project would not conflict with the provisions of a habitat conservation plan, natural community plan or other approved local, regional or State habitat conservation plan, and no impact would occur.

[12] Stanford University, 2015. *Stanford University Habitat Conservation Plan*. December 22.

3.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

*a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? **(Less-Than-Significant Impact)***

As noted in the ConnectMenlo Final EIR, the two main categories of historical resources that are subject to adverse impacts, and that may be adversely affected by development allowed under ConnectMenlo, are historical archaeological deposits and historical architectural resources. Refer to Section 3.5.b, below for a discussion of archaeological deposits.

There are several recognized historic properties within the City; however, none of these are located within the Bayfront Area, where the project site is located. The ConnectMenlo Final EIR Mitigation Measure CULT-1 requires site-specific historic resources evaluations for individual projects that are proposed on sites with a building more than 50 years old or any site adjoining with a building more than 50 years old. The existing building on the project site was constructed in 1972, and therefore does not meet the 50-year-old threshold.[13] Adjoining properties include buildings that are 50 years or older; however, as noted above, none of the recognized historic properties within the City are located within the Bayfront Area or within the immediate project vicinity. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

*b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? **(Less-Than-Significant with Mitigation Incorporated)***

The ConnectMenlo Final EIR determined that it is highly improbable that archaeological deposits associated with the historic period of Menlo Park and Native American prehistoric archeological sites exist on the locations identified for future development, because these locations are concentrated on sites either already developed, and/or in close proximity to existing development, where development will have a lesser impact on historical archeological resources. However, future projects that require substantial excavation reaching significant depths below the ground surface could result in the disturbance of unidentified subsurface materials that have the potential to contain prehistoric archaeological resources, including unrecorded Native American prehistoric archaeological sites. The ConnectMenlo Final EIR identified Mitigation Measure CULT-2a, which is

[13] SP Menlo LLC, 2019. *Request for Evaluation for Potential Historic Significance*. January 27.

presented below, to ensure this impact would be reduced to a less-than-significant level. This mitigation measure would be applicable to the proposed project and would be required to ensure that potential impacts of the proposed project to archaeological deposits would be less than significant.

> **Connect Menlo Final EIR Mitigation Measure CULT-2a:** If a potentially significant subsurface cultural resource is encountered during ground disturbing activities, all construction activities within a 100-foot radius of the find shall cease until a qualified archeologist 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 CEQA criteria by a qualified archeologist. If the resource is 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 Menlo Park, Northwest Information Center (NWIC), and State Historic Preservation Office (SHPO), if required.

c. Would the project disturb any human remains, including those interred outside of formal cemeteries? ***(Less-Than-Significant with Mitigation Incorporated)***

The ConnectMenlo Final EIR determined that human remains associated with pre-contact archaeological deposits could exist within the City 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. Any human remains encountered during ground-disturbing activities are 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. The ConnectMenlo Final EIR identified Mitigation Measure CULT-4, which is presented below, to ensure this impact would be reduced to a less-than-significant level. This mitigation measure would be applicable to the proposed project and would be required to ensure that potential impacts of the proposed project to pre-contact human remains would be less than significant.

> **Connect Menlo Final EIR Mitigation Measure CULT-4:** 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 San Mateo 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. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.

3.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

*a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? **(Less-Than-Significant Impact)***

Energy conservation was evaluated in Section 4.15.5 of the ConnectMenlo Final EIR, consistent with CEQA Guidelines Appendix F. The ConnectMenlo Final EIR did not quantify energy or natural gas demand associated with buildout of ConnectMenlo; however, a brief discussion of energy use and conservation, including the City's Climate Change Action Plan, was included. The ConnectMenlo Final EIR determined that development pursuant to ConnectMenlo would be subject to new requirements under rule making developed at the State and local level regarding greenhouse gas (GHG) emissions. Specifically, the ConnectMenlo Final EIR found that individual projects would be required to adhere to the Heavy Duty National Program, which has been adopted by the United States Environmental Protection Agency (USEPA). The Heavy Duty National Program establishes fuel efficiency and GHG emission standards in the heavy-duty highway sector, which include combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). In addition, as required by Mitigation Measure AQ-2b1 in the ConnectMenlo Final EIR, individual development projects would be required to comply with the current BAAQMD's basic control measures for reducing construction emissions, which would also improve the energy efficiency of the project during construction.

The ConnectMenlo Final EIR determined that new development pursuant to ConnectMenlo would be constructed using energy efficient modern building materials and construction practices, in accordance with the CALGreen Building Code, the California Public Utility Commission's Long Term Energy Efficiency Strategic Plan, and Chapter 12.18 of the Menlo Park Municipal Code which contains the Green Building Ordinance. In addition, the ConnectMenlo Final EIR found that new buildings would also use new modern appliances and equipment, in accordance with the 2006 Appliance Efficiency Regulations.

As discussed in the ConnectMenlo Final EIR, implementation of ConnectMenlo inherently furthers objectives of energy conservation by focusing activities in areas of existing infrastructure and services. In addition, the Land Use, Circulation, and Open Space/Conservation elements of ConenctMenlo contain goals, policies, and programs that would require local planning and development decisions to consider impacts to energy resources. As a part of ConnectMenlo, all new building within the Bayfront Area are required to comply with specific green building requirements

for LEED certification, provide outlets for Electric Vehicle (EV) charging, provide on-site renewable energy generation, and enroll in the USEPA's Energy Star Building Portfolio Manager.

Similar to buildout of ConnectMenlo, the proposed project would increase the demand for energy during construction of the proposed project and would increase the demand for electricity, natural gas, and gasoline during operation of the proposed project. The discussion and analysis provided below is based on data included in the California Emissions Estimator Model (CalEEMod) output, which is included in Appendix A.

The anticipated construction schedule for the proposed project assumes that the proposed project would be built over 21 months. The proposed project would require demolition, grading, site preparation, and building activities during construction. Construction of the proposed project would require energy for the manufacture and transportation of construction materials, preparation of the site for demolition and grading activities, and construction of the project. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. In order to increase energy efficiency on the site during project construction, the project would restrict equipment idling times to 5 minutes or less and would require construction workers to shut off idle equipment, as required by the ConnectMenlo Final EIR Mitigation Measure AQ-2b1. In addition, construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would be less than significant.

Similar to buildout of ConnectMenlo, energy use consumed during operation of the proposed project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the proposed project. Energy and natural gas consumption was estimated for the project using default energy intensities by building type in CalEEMod. In addition, the proposed buildings would be constructed to current CALGreen standards, which was included in CalEEMod inputs. Electricity and natural gas usage estimates associated with the proposed project are shown in Table 3.A.

The proposed project would result in energy usage associated with gasoline to fuel project-related trips. Based on the CalEEMod analysis, the proposed project would result in approximately 1,431,105 vehicle miles traveled (VMT) per year. The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.0 mpg in 2015.[14] Therefore, using the USEPA fuel economy estimates for 2015, the proposed project would result in the consumption of approximately 65,050 gallons of gasoline per year. Table 3.A below, shows the estimated potential increased electricity and natural gas demand associated with the proposed project.

[14] U.S. Department of Transportation. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: https://www.bts.gov/archive/publications/national_transportation_statistics/table_04_23/ (accessed June 2019).

Table 3.A: Estimated Annual Energy Use of Proposed Project

Land Use	Electricity Use (kWh per year)	Natural Gas Use (therms per year)	Gasoline (gallons per year)
Residential	447,531	9,256	63,797
Retail	5,240	23	1,253
Parking Structure	99,367	0	0
Open Space	0	0	0
Total	**552,138**	**9,279**	**65,050**

Source: LSA (June 2019).

As shown in Table 3.A, the estimated potential increased electricity demand associated with the proposed project is 552,138 kilowatt-hours (kWh) per year. In 2017, California consumed approximately 288,614 gigawatt-hours (GWh) or 288,614,000,000 kWh.[15] Of this total, San Mateo County consumed 4,367 GWh or 4,367,541,850 kWh.[16] Therefore, electricity demand associated with the proposed project would only be approximately 0.01 percent of San Mateo County's total electricity demand.

The estimated potential increased natural gas demand associated with the proposed project is 9,279 therms per year, as shown in Table 3.A. In 2017, California consumed approximately 12,571 million therms or 12,571,000,000 therms, while San Mateo County consumed approximately 211 million therms or approximately 211,256,396 therms.[17] Therefore, natural gas demand associated with the proposed project would be less than 0.01 percent of San Mateo County's total natural gas demand.

In addition, the proposed project would result in energy usage associated with gasoline to fuel project-related trips. As shown above in Table 3.A, vehicle trips associated with the proposed project would consume approximately 65,050 gallons of gasoline per year. In 2015, vehicles in California consumed approximately 15.1 billion gallons of gasoline.[18] Therefore, gasoline demand generated by vehicle trips associated with the proposed project would be a minimal fraction of gasoline and diesel fuel consumption in California.

Consistent with ConnectMenlo requirements, the proposed project would comply with specific green building requirements for LEED certification, provide outlets for EV charging, provide on-site renewable energy generation, enroll in the USEPA's Energy Star Building Portfolio Manager, use new modern appliances and equipment, and comply with current CALGreen standards, which would help to reduce energy and natural gas consumption. The proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate

[15] California Energy Commission. 2017. Energy Consumption Data Management Service. Electricity Consumption by County. Available online at: http://www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed June 2019).

[16] Ibid.

[17] California Energy Commission. 2017. Energy Consumption Data Management Service. Gas Consumption by County. Available online at: http://www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed June 2019).

[18] California Energy Commission. 2017. California Gasoline Data, Facts, and Statistics. Available online at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/ (accessed April 2019).

renewable energy or energy efficiency measures into building design, equipment use, and transportation. Therefore, construction and operation period impacts related to consumption of energy resources would be less than significant.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? ***(Less-Than-Significant Impact)***

As previously stated, the proposed project would be required to comply with the CALGreen Code, which includes provisions related to insulation and design aimed at minimizing energy consumption. In addition, the proposed project would implement Transportation Demand Management (TDM) measures and would help the area change from an auto-oriented corridor to a multi-modal oriented community, with related energy conservation resulting from the more efficient use of transportation, circulation, and infrastructure systems by locating a residential use within a jobs-rich area. Therefore, the proposed project would be consistent with the State's goal of reducing VMT and vehicular GHG emissions as outlined in Senate Bill 743. The proposed project would also be consistent with the ConnectMenlo energy conservation policies, as noted above, and the City's Climate Change Action Plan.

In addition, as indicated above, energy usage on the project site during construction would be temporary in nature and energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impact to regional energy supplies would be minor, the proposed project would not conflict with energy conservation plans. Thus, as shown above, the project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would be consistent with applicable plans related to renewable energy and energy efficiency, and this impact would be less than significant.

3.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. 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?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The information presented in this section is based on data and findings provided in the Geotechnical Investigation[19] prepared for the project site, unless otherwise noted.

a. Would the project 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? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides? ***(Less-Than-Significant Impact)***

Fault Rupture. Surface fault rupture occurs when the ground surface is broken due to fault movement during an earthquake. Fault rupture is generally expected to occur along active fault traces. Areas susceptible to fault rupture are delineated by the California Geological Survey Alquist-Priolo Earthquake Fault Zones and require specific geological investigations prior to development to

[19] Romig Engineers, 2018. *Geotechnical Investigation, Apartment Building, 111 Independence Drive, Menlo Park, California.* December 21.

reduce the threat to public health and safety and to minimize the loss of life and property posed by an earthquake-induced ground failure.

The ConnectMenlo Final EIR determined that no Alquist-Priolo Earthquake Fault Zones have been mapped within the Bayfront Area. There are no mapped faults going through or adjacent to the project site, and the project site is not located within an Earthquake Fault Zone. The closest active fault to the project site is the San Andreas Fault, which is located approximately 6.3 miles southwest. Therefore, the proposed project would have a less-than-significant impact related to fault rupture.

Ground Shaking. Seismic ground shaking generally refers to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The magnitude of a seismic event is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. The intensity of an earthquake is a subjective measure of the perceptible effects of a seismic event at a given point.

In the future, the proposed project would likely experience severe ground shaking during moderate and large magnitude earthquakes produced along the San Andreas Fault or other active Bay Area fault zones. Using information from recent earthquakes, improved mapping of active faults, ground motion modeling, and a new model for estimating earthquake probabilities, there is a 72 percent chance that at least one earthquake of Magnitude 6.7 or greater will occur in the Bay Area before 2043. The Hayward Fault, located approximately 13 miles northeast of the project site, has the highest likelihood of an earthquake greater than or equal to Magnitude 6.7 in the Bay Area, estimated at 33 percent.

The risk of ground shaking impacts is reduced through adherence to the design and materials set forth in building codes. The City of Menlo Park has adopted the 2016 California Building Code (Title 24, California Code of Regulations), which provides for stringent construction requirements on projects in areas of high seismic risk. The Geotechnical Investigation prepared for the project site recommends seismic design parameters to be used in accordance with the 2016 California Building Code to account for earthquake ground motions. The Geotechnical Investigation provided a preliminary recommendation that the proposed building be supported on deep foundations that would likely extend to at least 65 feet in depth. Therefore, the project design would be required to comply with 2016 California Building Code Section 1803.5.5, Deep Foundations, which specifies that "where deep foundations will be used, a geotechnical investigation shall be conducted…" As noted in the ConnectMenlo Final EIR, the design and construction for the proposed project is required to conform with, or exceed, current best standards for earthquake resistant construction in accordance with the most current California Building Code and with the generally accepted standards of geotechnical practice for seismic design in Northern California.

Seismic hazards cannot be completely eliminated, even with site-specific geotechnical investigation/design and advanced building practices. However, the seismic design standards of the California Building Code are intended to prevent catastrophic building failure in the most severe

earthquakes currently anticipated. Therefore, compliance with existing building codes would ensure that the potential impacts associated with ground shaking would be less than significant.

Seismic-Related Ground Failure and Liquefaction. The potential for different types of ground failure to occur during a seismic event is discussed below. As noted above, the ConnectMenlo Final EIR determined that compliance with existing regulations, including General Plan policies that have been prepared to minimize impacts related to strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landsliding, impacts related to seismic-related ground failure and liquefaction would be less than significant. Because geotechnical and soil conditions can vary by geographic location, a site-specific analysis is presented below.

Liquefaction. Soil liquefaction is a phenomenon primarily associated with saturated soil layers located close to the ground surface. During ground shaking, these soils lose strength and acquire a "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (silt and clay) may also liquefy. Based on testing at the project site, some of the fine grained soils encountered with a low plasticity may be prone to liquefaction settlement. Total settlement that could occur at the ground surface as a result of liquefaction is estimated to range from approximately 1 to 3.5 inches.

As noted above, the Geotechnical Investigation provided a preliminary recommendation that the proposed building be supported on deep foundations extending to at least 65 feet in depth. Liquefaction is expected to be limited beneath the pile depths at this length. However, final grading, foundation, and building plans must be designed in accordance with the California Building Code, which requires preparation of and compliance with the recommendations of a site-specific geotechnical investigation. These designs would include measures that would address the potential for differential settlement related to liquefaction. Therefore, compliance with the California Building Code would ensure that the potential impacts associated with liquefaction would be less than significant.

Lateral Spreading. Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial soils are transported downslope or in the direction of a free face by earthquake and gravitational forces. The project site is not susceptible to lateral spreading due to the lack of a nearby free slope face. Therefore, the proposed project would have a less-than-significant impact related to lateral spreading.

Surface Settlement. Settlement can occur when non-saturated, cohesionless soil is densified by earthquake vibrations. The fill and native soils above the ground water at the project site are typically composed of stiff to very stiff clays, and therefore the potential for settlement of these surface soils during a major earthquake is low. In addition, recompaction of any poorly-compacted or undocumented fills encountered during earthwork construction, as recommended by the Geotechnical Investigation, would further reduce the risk of differential compaction during a major earthquake. Therefore, the proposed project would have a less-than-significant impact related to surface settlement.

Landslides. Seismically-induced landslides occur as the rapid movement of large masses of soil on unstable slopes during an earthquake. The Seismic Hazard Zones mapped by the California Geological Survey (CGS) delineate areas susceptible to seismically-induced landslides that require additional investigation to determine the extent and magnitude of potential ground failure. According to CGS, the project site is not located within a Seismic Hazard Zone for seismically-induced landslides.[20]

b. Would the project result in substantial soil erosion or the loss of topsoil? ***(Less-Than-Significant Impact)***

The Geotechnical Investigation does not identify topsoil on the project site. The project site is developed and has been mapped as an "urban land" area by the Natural Resources Conservation Service.[21] Areas designated as "urban land" have essentially no exposed soil and are covered by streets, parking lots, buildings, and other structures. The redevelopment of the project site would involve demolition and construction activities, such as grading and excavation, which could result in temporary soil erosion when the disturbed soils are exposed to wind or rainfall. However, this would be temporary and limited to the period of grading. Upon completion of construction, the project site would be covered with structures, pavement, and landscaping and would not include areas of exposed soil. In addition, the ConnectMenlo Final EIR determined that compliance with the City's Engineering Division's Grading and Drainage Control Guidelines would reduce the impacts from erosion and the loss of topsoil to the extent practicable. Therefore, the proposed project would result in less-than-significant impacts relate to soil erosion or loss of top soil.

c. Would the project 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? ***(Less-Than-Significant Impact)***

As previously discussed in Section 3.2.a, above, the soils at the project site are susceptible to liquefaction and seismically-induced settlement, but they are not susceptible to lateral spreading or landslides. As noted in the ConnectMenlo Final EIR, the proposed project's required compliance with the California Building Code would reduce the potential risks to people and structures as a result of liquefaction and seismically-induced settlement to a less-than-significant level.

Subsidence. Subsidence or collapse can result from the removal of subsurface water resulting in either catastrophic or gradual depression of the surface elevation of the project site. Since the proposed project would connect to the Menlo Park Municipal Water (MPMW) water system, groundwater extraction that could potentially result in subsidence is not expected on the project site.

Consolidation. Consolidation of soils is a process by which the soil volume decreases as water is expelled from saturated soils under static loads. As the water moves out from the pore space of the soil, the solid particles realign into a denser configuration that results in settlement. Consolidation

[20] California Geological Survey, 2006. *Seismic Hazard Zones; Palo Alto Quadrangle.* October 18.

[21] Natural Resources Conservation Service. Web Soils Survey, USDA Mapping. Website: websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (accessed April 26, 2019).

typically occurs as a result of new buildings or fill materials being placed over compressible soils. An analysis of potential consolidation indicates that the underlying soils would be expected to slowly consolidate over a 30 year period and result in about 1.7 to 2.1 inches of differential settlement.

Final grading, foundation, and building plans must be designed in accordance with the California Building Code. These designs would include foundation alternatives, such as conventional shallow spread footing foundations combined with ground improvement methods (e.g., Geopiers or drilled displacement columns) or deeper foundation options (e.g., auger-cast piles) to transfer structural building loads to deeper, dense supporting strata below the soft, compressible clay layers onsite. Therefore, compliance with the existing building codes would ensure that the potential impacts associated with consolidation would be less than significant.

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? ***(Less-Than-Significant Impact)***

Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume.

The ConnectMenlo Final EIR determined that expansive soils are most prevalent in the neighborhoods that lie closest to the Bay. Testing at the project site determined that the near-surface soils encountered at the project site are highly expansive and subject to expansion and contraction during wetting/drying cycles.

As stated in the ConnectMenlo Final EIR, final grading, foundation, and building plans must be designed in accordance with the California Building Code. As noted in Section 3.7.a, the City has adopted the 2016 California Building Code, and the proposed project would be required to comply with the current code in effect. Project designs would include measures to excavate the existing soils that are susceptible to expansion and either replace the materials with engineered fill or further evaluate the possible reuse of the materials as engineered fill. Compliance with the existing building codes would ensure that the potential impacts associated with expansive soils would be less than significant.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? ***(No Impact)***

The project site would be served by a wastewater conveyance system maintained by the West Bay Sanitary District (WBSD). Wastewater from the WBSD's collection system is conveyed to the Silicon Valley Clean Water (SVCW) Waste Water Treatment Plant (WWTP) in Redwood Shores. Development of the proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, the proposed project would have no impact related to septic tanks or alternative waste water disposal systems.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ***(Less-Than-Significant with Mitigation Incorporated)***

The ConnectMenlo Final EIR determined that no known fossils or unique paleontological resources or unique geologic features are present within the study area; however, geological formations underlying Menlo Park have the potential for containing paleontological resources (i.e., fossils).[22] Demolition, site preparation, and construction activities associated with the proposed project could reach significant depths below the ground surface where no such excavation has previously occurred and unrecorded fossils of potential scientific significance and other unique geologic features could exist. The ConnectMenlo Final EIR identified Mitigation Measure CULT-3,[23] which is presented below, to ensure this impact would be reduced to a less-than-significant level. This mitigation measure would be applicable to the proposed project and would be required to ensure that potential impacts of the proposed project to paleontological resources would be less than significant.

> **ConnectMenlo Final EIR Mitigation Measure CULT-3:** In the event that fossils or fossil bearing deposits are discovered during ground disturbing activities, 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]), evaluate the potential resource, and assess the significance of the find 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 avoidance 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 Menlo Park for review and approval prior to implementation, and all construction activity shall adhere to the recommendations in the excavation plan.

[22] Menlo Park, City of, 2016, op. cit.

[23] In December 2018, after certification of the ConnectMenlo Final EIR, the CEQA Guidelines were revised. As a part of this revision, the consideration of impacts to paleontological resources was moved from Cultural Resources to Geology and Soils. For ease of reference, this document identifies Mitigation Measures consistent with their labelling in the ConnectMenlo Final EIR.

3.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

a. and b. ***(Potentially Significant Impact)***

The ConnectMenlo Final EIR identified two significant and unavoidable impacts related to GHG emissions as a result of implementation of ConnectMenlo (Impact GHG-1 and GHG-2). The ConnectMenlo Final EIR identified Mitigation Measure GHG-1, which requires the City to update its Climate Action Plan (CAP) prior to January 1, 2020. However, because there are no post-2020 federal and State measures that would assist the City in achieving the efficient target at the ConnectMenlo buildout year of 2040, these impacts remained significant and unavoidable.

Construction activities associated with the proposed project would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site operation of the proposed project (i.e., residential-based trips, including commuting) would generate GHG emissions from area and mobile sources as well as indirect emissions from sources associated with energy consumption. As noted in Section 3.17, Transportation, a transportation evaluation of the proposed project will be prepared, which could indicate more significant impacts related to transportation, and therefore GHGs, than were previously analyzed in the ConnectMenlo Final EIR. Mobile-source GHG emissions would also include project-generated vehicle trips associated with activities such as landscaping and maintenance on the project site, and other sources. Therefore, the proposed project could potentially conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The criteria identified above for topics 3.8.a and 3.8.b will be evaluated in the EIR. Mitigation measures will be recommended if necessary.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

*a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **(Less-Than-Significant Impact)***

The proposed project includes the demolition of the existing structure and parking lot on the project site and the construction of new residential apartments, a parking garage, and associated site improvements. The ConnectMenlo Final EIR determined that these types of land uses typically do not involve transport, use, or disposal of significant quantities of hazardous materials. Generally, small quantities of hazardous materials, such as paints, cleaning chemicals, and fertilizers would be used for routine maintenance and landscaping. Therefore a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials would not occur and potential impacts related to operational use of hazardous materials would be less than significant.

During the construction period, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported to and used at the project site. However, compliance with existing regulations that govern the transportation of hazardous materials and the use and disposal of such materials would ensure that the proposed project would not result in spills or leaks that could

create a significant hazard to the public or the environment during and after construction by ensuring that these materials are properly handled, and if spills or leaks occur, they are properly and promptly cleaned up and the materials disposed of at an appropriate waste-handling facility. Therefore, potential impacts of the proposed project associated with routine transport, use, or disposal of hazardous materials would be less than significant.

b. Would the project 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? ***(Less-Than-Significant Impact)***

The public and/or the environment could be affected by the release of hazardous materials from the project site into the environment by: 1) exposing workers and/or the public to potentially contaminated soil and groundwater during construction and/or operation of the project; or 2) exposing workers and/or the public to hazardous building materials (e.g., Polychlorinated Biphenyls [PCBs], lead paint, asbestos) during demolition of the existing commercial structure.

The ConnectMenlo Final EIR determined that future development associated with ConnectMenlo could occur on properties that possibly are contaminated. Future development would be required to comply with existing regulations, including General Plan policies that have been prepared to minimize impacts related to accidents and spills of hazardous materials. In particular, Policy S-1.18, which requires developers to conduct an investigation of soils, groundwater and buildings affected by hazardous-material potentially released from prior land uses in areas historically used for commercial or industrial uses, and to identify and implement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses.

A Phase I Environmental Site Assessment (Phase I ESA) was prepared for the project site in February 2019.[24] The Phase I ESA reviewed past uses of the project site and surrounding vicinity to evaluate whether past uses or releases of hazardous materials may have impacted the project site. The Phase I ESA indicated that historic land uses of the site included agricultural use and warehousing uses. The Phase I ESA identifies a potential environmental concern related to concentrations of trichloroethene (TCE) in groundwater samples occurring above environmental screening levels (ESLs) within 5 feet of the eastern boundary of the site at 115 Independence Drive. Soil vapor samples at 115 Independence Drive indicate TCE levels below ESLs, and the groundwater samples in 1989 and 1997 indicate that TCE levels within groundwater have been attenuating. Therefore, because the tested soil vapor at the 115 Independence site was below ESLs for TCE, the Phase I ESA considered it unlikely that soils or soil vapor resources at the project site were impacted, and did not consider this to be a recognized environmental concern. Therefore, the proposed project would have a less-than-significant impact related to the release of hazardous materials into the environment.

[24] Environmental Investigation Services, Inc., 2019. *Phase I Environmental Site Assessment, 111 Independence Drive, Menlo Park, California.* February 4.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? ***(No Impact)***

The proposed project would not involve handling or emissions of acutely hazardous materials, substances, or wastes. There are no schools currently located within 0.25-mile of the project site. The closest existing school, Taft Elementary School, is located approximately 1 mile west of the project site. The Tide Academy, a high school within the Sequoia Union High School District, will begin operation in Fall 2019 at 150 Jefferson Drive, approximately 0.25-mile south of the project site. However, as noted in Sections 3.9.a and 3.9.b, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste, and therefore no impact related to hazardous emissions within proximity to a school would occur.

d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? ***(Less-Than-Significant Impact)***

The provisions of Government Code Section 65962.5 require the California Department of Toxic Substances Control (DTSC), the State Water Resources Control Board, the California Department of Health Services, and the California Department of Resources Recycling and Recovery (formerly the California Integrated Waste Management Board) to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, leaking underground tank sites, and/or hazardous materials releases to the Secretary of the California Environmental Protection Agency (Cal/EPA). Based on a review of regulatory databases performed as part of the Phase I ESA prepared for the project site, including listed hazardous materials release sites compiled pursuant to Government Code Section 65962.5, the project site is not listed as a hazardous materials release site due to activities and land uses in the past, and this impact would be less than significant.

e. Would the project be 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area? ***(No Impact)***

The ConnectMenlo Final EIR determined that the study area would not be subject to any airport safety hazards, and no impact would occur. The project site is located approximately 4 miles north of the Palo Alto Airport and approximately 4.5 miles of the San Carlos Airport. The project site is not located within an airport land use plan, or within 2 miles of a public airport.[25,26] Therefore, no impact would occur.

[25] Santa Clara County Airport Land Use Commission, 2008. *Comprehensive Land Use Plan, Santa Clara County, Palo Alto Airport.* November 19.

[26] City/County Association of Governments of San Mateo County, 2015. *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport.* October 2015.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that implementation of ConnectMenlo does not include potential land use changes that would impair or physically interfere with the ability to implement the City's Emergency Operation Plan.

The proposed project would be consistent with the policies outlined in ConnectMenlo and would not obstruct emergency evacuation routes. The proposed project would not substantially alter the adjacent roadways and, therefore, would not be expected to impair the function of nearby evacuation routes. Therefore, the proposed project would have a less-than-significant impact on implementation of an adopted emergency response plan or emergency evacuation plan.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? ***(Less-Than-Significant Impact)***

As noted in the ConnectMenlo Final EIR, the City is located in a highly urbanized area, is not surrounded by woodlands or vegetation, and does not contain areas of moderate, high, or very high Fire Hazard Severity Zones for the Local Responsibility area, nor does it contain any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility area. Future development within the City, including the proposed project, would be required to comply with the existing regulations as described in Section 4.7.1.1 of the ConnectMenlo Final EIR. In particular, all development in the study area would be constructed pursuant to the California Building Code, California Fire Code, and the Menlo Park Fire Protection District Code. Therefore, because the project site is in an urban area, is not within or adjacent to a wildland fire hazard area, and would be required to comply with existing regulations, the proposed project would not expose people or structures to a significant loss, injury, or death involving wildland fires.

3.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. 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 offsite;	☐	☐	☒	☐
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?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

*a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? **(Less-Than-Significant Impact)***

As noted in the ConnectMenlo Final EIR, water quality in stormwater runoff is regulated locally by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), which includes the C.3 provisions set by the San Francisco Bay Regional Water Quality Control Board (Water Board). Adherence to these regulations requires new development or redevelopment projects to incorporate treatment measures, an agreement to maintain them, and other appropriate source control and site design features that reduce pollutants in runoff to the maximum extent practicable. Many of the requirements consider Low Impact Development (LID) practices such as the use of on-site infiltration through landscaping and vegetated swales that reduce pollutant loading. Incorporation of these measures can even improve on existing conditions.

In addition, all projects must comply with the requirements of the City's Municipal Code Chapter 7.42, Stormwater Management Program. The City of Menlo Park Public Works Department also requires development or redevelopment projects that replace or introduce more than 10,000 square feet of impervious surfaces to prepare a Hydrology Report that requires site design measures to maximize pervious areas, source control measures to keep pollutants out of stormwater, use of

construction Best Management Practices (BMPs), and post construction treatment measures. Additionally, as part of the Zoning Ordinance update, ConnectMenlo includes design standards for development in the Bayfront Area. These design standards require future development to provide on-site infiltration of stormwater runoff and implement sustainable stormwater features in open space areas.

Construction and demolition activities of the proposed project would involve disturbance, grading, and excavation of soil, which could result in temporary erosion and movement of sediments into the storm drain system, particularly during precipitation events. The potential for chemical releases is present at most construction sites due to the use of paints, solvents, fuels, lubricants, and other hazardous materials associated with heavy construction equipment. Once released, these hazardous materials could be transported to nearby surface waterways in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters. The release of sediments and other pollutants during construction and demolition could adversely affect water quality in receiving waters. In order to prevent pollution runoff during the construction period, BMPs from the SMCWPPP would be implemented. These BMPs include, but are not limited to, temporary erosion controls, performing clearing and earth moving activities only during dry weather, and storing, handling, and disposing of construction materials/wastes properly to prevent contact with stormwater.

As noted above, the proposed project would be required to comply with the City's Stormwater Management Program, and would be required to prepare a Hydrology Report. The proposed project would incorporate site design measures to reduce stormwater runoff during the operation period, including directing runoff onto vegetated areas, maximizing permeability by clustering development and preserving open space, and using micro-detention. In addition, the proposed project would also implement source controls to reduce pollution runoff during the operation period, including marking on-site inlets with the words "No Dumping! Flows to Bay," plumbing interior parking garage floor drains to the sanitary sewer, and providing landscaping that is drought and/or disease resistant and minimizes runoff.

Therefore, compliance with existing stormwater control regulations and implementation of site design measures, source control measures, and BMPs would reduce potential construction and operation phase impacts on water quality to a less-than-significant level.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? ***(Less-Than-Significant Impact)***

As noted in the ConnectMenlo Final EIR, the San Mateo Subbasin of the Santa Clara Valley Groundwater Basin underlies the City. Development throughout the City associated with implementation of ConnectMenlo could result in an overall decrease in groundwater recharge through the increase in impervious surfaces or dewatering during the construction phase.

The proposed project would result in an increase of impervious surfaces on the project site from 31,496 square feet of existing impervious surface coverage to 34,171 square feet of impervious surface coverage. However, the proposed project would include stormwater control features, as

described above, that would enhance infiltration of stormwater to the subsurface and would therefore increase the amount of groundwater recharge compared to existing conditions.

The proposed project would connect to the MPMW water system and would not use groundwater at the site. Although no use of groundwater is proposed as part of the project, dewatering would likely be required during construction due to the depth of excavations performed and the shallow water table within the Bayfront Area. This dewatering would be temporary and would focus on the uppermost shallow groundwater zone (a zone that contains a relatively small amount of groundwater that is generally not utilized for water supply). Therefore, potential impacts related to depletion of groundwater supplies would be less than significant.

c. *Would the project 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 offsite; 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?* ***(Less-Than-Significant Impact)***

The proposed project would not result in the alteration of the course of a stream or river, but would slightly alter the existing drainage pattern on the site with the introduction of a new building footprint and surface pavements. However, the completed project would result in similar impervious surface coverage as existing conditions and the project would reflect pre-project drainage conditions by directing runoff through a new 18-inch storm drain within Independence Drive towards the existing 18-inch storm drain south of the project site and also within Independence Drive that currently serves the project site.

Erosion. As described above, the proposed project would reflect pre-project drainage conditions by directing runoff towards the corresponding City drainage facilities that currently serve the project site. As described in the ConnectMenlo Final EIR, all stormwater runoff from the project site would be treated in accordance with the City's Storm Water Management Program, ensuring that storm water is treated for sediments prior to discharge from the site, particularly during construction activities. Consequently, the potential of the proposed project to result in substantial erosion or siltation on- or off-site associated with altering the drainage pattern of the project site would be less than significant.

On- or Off-Site Flooding. As noted above, the completed project would reflect pre-project drainage conditions and would result in no net increase in the rate or amount of stormwater runoff, and therefore would not result in on- or off-site flooding. This impact would be less than significant.

Stormwater Runoff. As described above and in the ConnectMenlo Final EIR, all stormwater runoff from the project site would be treated in accordance with the City's Storm Water Management Program, which also requires no net increase in the rate or amount of stormwater runoff. Therefore, the proposed project would not create or contribute runoff water exceeding the capacity of the storm drain system or provide an additional source of polluted runoff and this impact would be less than significant.

Flood Flows. As noted in Section 3.10.d, the project site is located within a flood zone. However, as discussed above, the proposed project would not substantially alter the drainage pattern on the site and the new building would generally occupy the same footprint as the existing structure on the site. Therefore, the proposed project would not impede flood flows or redirect flood flows in a manner which would result in on- or off-site flooding and this impact would be less than significant.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that compliance with the City's existing stormwater regulations, described above, implementation of LID design guidelines, and engineering review of drainage calculations and development plans by the City's Public Works Department would ensure that there are no significant increases in peak flow rates or stormwater runoff volume.

The project site is located within a special flood zone, as mapped by FEMA, with a base flood elevation of 11 feet.[27] As noted in Section 1.0, Project Description, the grade of the project site would be raised to meet FEMA requirements. Therefore, because the proposed project would be elevated out of the flood zone, comply with existing stormwater regulations, and implement site design measures, source control measures, and SMCWPPP's construction BMPs, the proposed project would not risk release of pollutants due to project inundation, and this impact would be less than significant.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? ***(Less-Than-Significant Impact)***

As noted above, the proposed project would be required to comply with the City's existing stormwater regulations, and would include implementation of site design measures, source control measures, and SMCWPPP's construction BMPs. In addition, the proposed project would connect to the MPMW water system and would not use groundwater at the site, and would raise the grade of the site out of the flood zone. Therefore, the proposed project would not conflict or obstruct the implementation of a water quality control plan or sustainable groundwater management plan, and this impact would be less than significant.

[27] Federal Emergency Management Agency, 2019. *National Flood Insurance Program, Flood Rate Insurance Map, San Mateo County, California.* Map No. 06081C0306F. April 5.

3.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☒	☐
b. 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?	☐	☐	☒	☐

*a. Would the project physically divide an established community? **(Less-Than-Significant Impact)***

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or 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. The ConnectMenlo FEIR concluded that implementation of ConnectMenlo would not include any new major roadways or other physical features through existing residential neighborhoods or other communities that would create new barriers in the City, but rather would implement measures to increase connectivity. Therefore, because the proposed project would be consistent with ConnectMenlo, as described below, and would not substantially alter any existing roadways or include any new barriers, this impact would be less than significant.

*b. Would the project 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? **(Less-Than-Significant Impact)***

The project site is located within the R-MU-B zoning district. The intent of the R-MU-B district is to: 1) provide high density housing to nearby employment; 2) encourage mixed use development with a quality living environment and neighborhood-serving retail and services on the ground floor that are oriented to the public, and promote a live/work/play environment with pedestrian activity. The R-MU-B district allows for bonus level development along Independence Drive to be a maximum of 85 feet in height. Additionally, because the project site is located within a special flood zone, as noted in Section 3.10.d, an additional 10-foot increase in maximum building height is allowed, for a total maximum building height of 95 feet. As noted in Section 1.0, Project Description, the proposed project would provide community amenities in order to qualify for development at the bonus level, and would be a maximum of 95 feet in height. In addition, the project sponsor is requesting an increase in the allowable density, gross floor area, and average height from 62.5 feet to 63.46 feet through the City's Below Market Rate Housing Program. The proposed project would be consistent with the mix and intensity of development contemplated by ConnectMenlo. As noted throughout this document, the proposed project would be consistent with the applicable goals, policies, and programs included in ConnectMenlo, and therefore would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect.

3.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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?	☐	☐	☐	☒
b. 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?	☐	☐	☐	☒

a. Would the project 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? ***(No Impact)***

The ConnectMenlo Final EIR determined that future development associated with ConnectMenlo would not have an impact on mineral resources as there are no mineral resource recovery operations within the City. Therefore, the proposed project would have no impact related to the availability of a known mineral resource.

b. Would the project 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? ***(No Impact)***

Refer to Section 3.12.a. The proposed project would have no impact related to locally-important mineral resource recovery sites.

3.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. 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 applicable standards of other agencies?	☒	☐	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c. 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, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

*a. Would the project 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 applicable standards of other agencies? **(Potentially Significant Impact)***

The ConnectMenlo Final EIR determined that all impacts related to noise, during both the construction and operation periods, could be reduced to less-than-significant levels through the implementation of mitigation measures.

Specifically, demolition, site preparation, and construction would require the use of heavy construction equipment including pile drivers, bulldozers, scrapers, loaders, excavators, cranes, and trucks. Demolition and site preparation phases are typically the loudest phases of construction due to the types of equipment used. There are sensitive receptors within 200 feet of the project site, which could be exposed to construction period noise. The ConnectMenlo Final EIR identified Mitigation Measure NOISE-1c, which is presented below, to ensure that construction-period noise impacts would be reduced to a less-than-significant level.

> **ConnectMenlo Final EIR Mitigation Measure NOISE-1c:** Project applicants for all development projects in the city shall minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA review, conditions of approval and/or enforcement of the City's Noise Ordinance. Prior to issuance of demolition, grading, and/or building permits for development projects, a note shall be provided on development plans indicating that during on-going grading, demolition, and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction-related noise:
>
> - Construction activity is limited to the daytime hours between 8:00 a.m. to 6:00 p.m. on Monday through Friday, as prescribed in the City's municipal code.

- All internal combustion engines on construction equipment and trucks are fitted with properly maintained mufflers, air intake silencers, and/or engine shrouds that are no less effective than as originally equipped by the manufacturer.
- Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling is located as far as feasible from nearby noise-sensitive receptors.
- Limit unnecessary engine idling to the extent feasible.
- Limit the use of public address systems.
- Construction traffic shall be limited to the haul routes established by the City of Menlo Park.

Mitigation Measure NOISE-1a requires the preparation of an acoustical study for development of new noise-sensitive uses, which include residential uses. The ConnectMenlo Final EIR determined that transportation-related noise, including an increase in traffic level, would be less than significant with compliance with General Plan Policies N-1.6 and N-1.9 and Programs N-1.B and N-1.C. However, as noted in Section 3.17, a transportation evaluation for the proposed project will be prepared, which could result in new or more severe impacts related to transportation, and therefore transportation-related noise, than was previously analyzed in the ConnectMenlo Final EIR. The proposed project could result in an increase in ambient noise levels generated by mobile sources within and around the site, and could expose proposed and existing sensitive land uses in the surrounding neighborhood to unacceptable noise levels. Therefore, impacts related to operation-period noise would be potentially significant, and this topic will be included in the EIR. Mitigation measures will be recommended, as necessary.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels? ***(Less-Than-Significant with Mitigation Incorporated)***

The proposed project would generate vibration during the construction period. The ConnectMenlo Final EIR identified Mitigation Measure NOISE-2a, which is presented below, to ensure this impact would be reduced to a less-than-significant level. This mitigation measure would be applicable to the proposed project and would be required to ensure that potential impacts of the proposed project related to the generation of vibration would be less than significant.

> **ConnectMenlo Final EIR Mitigation Measure NOISE-2a:** To prevent architectural damage citywide as a result of construction-generated vibration:
>
> - Prior to issuance of a building permit for any development project requiring pile driving or blasting, the project applicant/developer shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. The maximum levels shall not exceed 0.2 inch/second, which is the level that can cause architectural damage for typical residential construction. If maximum levels would exceed

these thresholds, alternative methods such static rollers, non-explosive blasting, and drilling piles as opposed to pile driving shall be used.

To prevent vibration-induced annoyance as a result of construction-generated vibration:

- Individual projects that involve vibration-intensive construction activities, such as blasting, pile drivers, jack hammers, and vibratory rollers, within 200 feet of sensitive receptors shall be evaluated for potential vibration impacts. A vibration study shall be conducted for individual projects where vibration-intensive impacts may occur. The study shall be prepared by an acoustical or vibration engineer holding a degree in engineering, physics, or allied discipline and who is able to demonstrate a minimum of two years of experience in preparing technical assessments in acoustics and/or groundborne vibrations. The study is subject to review and approval of the Community Development Department.

Vibration impacts to nearby receptors shall not exceed the vibration annoyance levels (in RMS inches/second) as follows:

- Workshop = 0.126
- Office = 0.063
- Residential Daytime (7:00 AM – 10:00 PM) = 0.032
- Residential Nighttime (10:00 PM – 7:00 AM) = 0.016

If construction-related vibration is determined to be perceptible at vibration-sensitive uses, additional requirements, such as use of less-vibration-intensive equipment or construction techniques, shall be implemented during construction (e.g., nonexplosive blasting methods, drilled piles as opposed to pile driving, preclusion for using vibratory rollers, use of small- or medium-sized bulldozers, etc.). Vibration reduction measures shall be incorporated into the site development plan as a component of the project and applicable building plans, subject to the review and approval of the Community Development Department.

c. 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, would the project expose people residing or working in the project area to excessive noise levels? ***(Less-Than-Significant Impact)***

Refer to Section 3.9.e. The project site is not located within the vicinity of a private airstrip or an airport land use plan, or within 2 miles of a public use airport. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels, and this impact would be less than significant.

3.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☒	☐	☐	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☒	☐	☐	☐

a. and b. ***(Potentially Significant Impact)***

The proposed project would result in the removal of existing office uses and construction of new residential uses on the project site. Pursuant to a settlement agreement between the cities of East Palo Alto and Menlo Park, any project located in the City's R-MU zone that proposes to develop at the bonus level, like the proposed project, shall prepare an EIR with an analysis of transportation and housing impacts, at a minimum.[28] Therefore, this topic will be included in the EIR, and mitigation measures will be recommended, if necessary.

[28] Menlo Park, City of, 2017. *Staff Report Number 17-305-CC*. December 5.

3.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☒	☐
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☒	☐

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: i. Fire protection? ii. Police protection? iii. Schools? Iv. Parks? V. Other public facilities? ***(Less-Than-Significant Impact)***

The following section addresses the proposed project's potential effects on: fire service, police service, schools, parks, and other public facilities. Impacts to public services would occur if the propose project increases demand for services such that new or expanded facilities would be required, and these new facilities would themselves cause environmental impacts.

Fire Protection. The ConnectMenlo Final EIR states that future development throughout the City pursuant to ConnectMenlo would be required to comply with existing regulations, including General Plan policies and Zoning regulations that have been prepared to minimize impacts related to fire protection services and the need for new facilities throughout the City. In particular, General Plan Policy S-1.30 requires coordination with the Menlo Park Fire Protection District (MPFPD), which provides fire protection services throughout the City, in the planning process and requires all development applications to be reviewed and approved by the MPFPD prior to approval. The MPFPD indicated that full buildout of ConnectMenlo would require additional staffing to maintain a 1 firefighter per 1,000 residents service ratio. The ConnectMenlo Final EIR determined that adherence to State and City requirements combined with compliance with the MPFPD permitting process and payment of impact fees, which would be used to remodel or rebuild existing fire stations and hire new firefighters, would ensure that implementation of ConnectMenlo would result in a less-than-significant impact related to the need for remodeled or expanded MPFPD facilities.

Primary service to the project site would be provided by Station 77, which is located at 1467 Chilco Street. This station is located approximately 1.3 miles southwest of the project site. Station 77

houses one engine company and is continually staffed by three firefighting personnel.[29] As noted in the ConnectMenlo Final EIR, Station 77 would need to be expanded and additional firefighters would be needed to serve the increased growth within the Bayfront Area. The expansion of Station 77 was already planned and budgeted for prior to ConnectMenlo. Consistent with the findings of the ConnectMenlo Final EIR, the project sponsor would be required to pay impact fees related to fire service, which would provide for rebuilt and remodeled fire facilities and the hiring of additional firefighters. Therefore, ongoing compliance with State and local laws, including the payment of developer fees to support the ability of the MPFPD to provide adequate services to its service area, including the expansion of Station 77, would minimize impacts related to fire protection services. In addition, the proposed project would be consistent with the type and intensity of development assumed for the project site in ConnectMenlo, and therefore would not result in a decrease in the planned service ratio of 1 firefighter per 1,000 residents. Station 5 would also serve the project site and is located approximately 2 miles west of the project site. Station 5 also houses one engine company and is continually staffed by three firefighting personnel.

As noted above, development associated with ConnectMenlo, which includes the proposed project, would be required to comply with State and City requirements as well as the MPFPD permitting process and payment of impact fees. Therefore, the proposed project would not result in the need for remodeled of expanded MPFPD facilities, and this impact would be less than significant.

Police Protection. The ConnectMenlo Final EIR states that future development pursuant to ConnectMenlo would be required to comply with existing regulations, including General Plan policies and Zoning regulations that have been prepared to minimize impacts related to police protection services. The Menlo Park Police Department (MPPD) indicated that full buildout of ConnectMenlo would require an additional 17 police officers to maintain a staffing ratio of 1.29 officers per 1,000 residents. However, the MPPD confirmed that no expansion or addition of facilities would be required to accommodate the additional sworn officers or equipment. Compliance with General Plan Program LU-1.E would result in the creation of assessment districts and impact fees, which would be require project sponsors to pay development fees that would be used for additional police staffing. These development fees would ensure that implementation of ConnectMenlo would result in a less-than-significant impact related to the need for remodeled or expanded MPFPD facilities. Consistent with the findings of the ConnectMenlo Final EIR, the project sponsor would be required to pay impact fees related to police service, which would provide for the hiring of additional police officers. The proposed project would be consistent with the type and intensity of development assumed for the project site in ConnectMenlo, and therefore would not result in a decrease in the planned service ratio of 1.29 sworn officers per 1,000 residents or the construction or renovation of any existing police facilities.

In addition, as part of the Zoning update, ConnectMenlo includes TDM standards for development in the Bayfront Area. These TDM standards require future development to reduce associated vehicle trips to at least 20 percent below standard generation rates. Each individual project sponsor will be required to prepare a TDM and provide an impact analysis to the satisfaction of the City's

[29] Menlo Park, City of, 2019. Stations (map). Website: www.menlofire.org/maps/stations (accessed April 29, 2019).

Transportation Manager. The reduction in trips would help to alleviate roadway congestion that could interfere with MPPD access and response times.

The MPPD has indicated that it can address maintaining adequate response times through staffing, rather than facility expansion, and therefore it was determined that implementation of ConnectMenlo would result in a less-than-significant impact related to the need for remodeled or expanded MPPD facilities. Therefore, because the proposed project is consistent with the type and intensity of development for the project site, the proposed project would not result in the need for remodeled or expanded MPPD facilities, and this impact would be less than significant.

Schools. The ConnectMenlo Final EIR determined that any development associated with ConnectMenlo would occur incrementally over the 24-year building horizon and would be subject to payment of development impact fees, which under Senate Bill 50 (SB 50) are deemed to be full and complete mitigation. In addition, future development would be required to comply with existing regulations, including General Plan policies and Zoning regulations that have been prepared to minimize impacts related to schools. Therefore, because the proposed project would comply with existing regulations prepared to minimize impacts related to schools and would be subject to the mandatory payment of developer impact fees pursuant to SB 50, the proposed project would have a less-than-significant impact related to the need for remodeled or expanded school facilities.

Parks. Refer to Section 3.16.a. The proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo and would include private and public open space, and therefore the proposed project would not result in substantial or accelerated physical deterioration of recreational facilities, and this impact would be less than significant.

Other Public Facilities. The ConnectMenlo Final EIR determined that future development under the proposed project, as part of the City's project approval process, would be required to comply with existing regulations, including General Plan policies that have been prepared to minimize impacts related to public facilities. The City, throughout the 2040 buildout horizon, would implement the General Plan programs that require the adoption of development impact fees to address infrastructure and service needs in the community. Therefore, because the proposed project would be required to pay development impact fees, impacts related to the need for remodeled or expanded public facilities would be less than significant.

3.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project 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?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

*a. Would the project 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? **(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that the increase in residents associated with future development under ConnectMenlo would lead to an increase in the demand for recreational opportunities and facilities within the City. However, the demand would be distributed throughout the City and would occur incrementally over the 24-year buildout horizon. The City has an adopted goal of maintaining a ratio of 5 acres of developed parkland per 1,000 residents. At full buildout, with an estimated population of approximately 14,150 new residents, the ratio of parkland per 1,000 residents would be approximately 5.2.

In addition to the existing parkland within the City, the proposed project would include a total of 16,746 square feet of open space, which would include common courtyards, a roof terrace, a pool, and a publicly-accessible plaza. Therefore, because the proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo and would include private and public open space, the proposed project would not result in substantial or accelerated physical deterioration of recreational facilities, and this impact would be less than significant.

*b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? **(No Impact)***

The proposed project would include redevelopment of the project site with residential uses. The proposed project does not include or require the construction or expansion of existing public recreational facilities. Therefore, development of the proposed project and associated recreational opportunities for use by project residents would not result in additional environmental effects beyond those described in this document.

3.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	☒	☐	☐	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
d. Result in inadequate emergency access?	☒	☐	☐	☐

a. through d. ***(Potentially Significant Impact)***

The ConnectMenlo Final EIR identified significant and unavoidable impacts related to increased delays of peak hour motor vehicle traffic at some study intersections and to routes of regional significance. Per Mitigation Measure TRANS-1b, new development would be required to contribute fair share contributions to the City's updated Transportation Impact Fee (TIF) program (once adopted) to guarantee funding for identified roadway and infrastructure improvements. Any project proposed prior to the adoption of an updated TIF is required to conduct a project-specific Transportation Impact Analysis (TIA) to determine the impacts and necessary transportation mitigations that are to be funded by that project. Also, the settlement agreement, as noted in Section 1.0, requires a transportation analysis be completed. A transportation evaluation will be prepared for the proposed project and will be included in the EIR. The analysis will consider impacts related to vehicular, bicycle, pedestrian, and transit facilities and access. Mitigation measures will be recommended if necessary.

3.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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 of Historical Resources, or in a local register of historical resources as defined in Public Resources Code 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 Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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 of Historical Resources, or in a local register of historical resources as defined in Public Resources Code 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 Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. ***(Less-Than-Significant With Mitigation Incorporated)***

As noted in the ConnectMenlo Final EIR, no tribal cultural resources have been identified in the Bayfront Area. However, as noted in Section 3.5, Cultural Resources, impacts from future development in the study area could impact unknown archeological resources including Native American artifacts and human remains. Impacts would be reduced to less-than-significant levels with implementation of Mitigation Measures CULT-2a and CULT-4 from the ConnectMenlo Final EIR.

AB 52 provides for consultation between lead agencies and Native American tribal organizations during the CEQA process. Prior to the release of an Environmental Impact Report or Negative Declaration/Mitigated Negative Declaration for public review, a lead agency must provide the opportunity to consult with local tribes. A request form describing the proposed project was sent to

the NAHC in West Sacramento requesting a list of tribes eligible to consult with the City, pursuant to Public Resources Code section 21080.3.1. On May 24, 2019, the NAHC responded in a letter with a list of tribal contacts. The City sent a letter providing the opportunity for consultation pursuant to AB 52 for the project to these individuals. No requests for consultation have been received to date. The consultation process and its conclusion will be further discussed in the EIR.

3.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. 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?	☐	☐	☒	☐
d. 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?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? ***(Less-Than-Significant Impact)***

Water. As noted in the ConnectMenlo Final EIR, the MPMW receives 100 percent of its potable water from the San Francisco Public Utilities Commission (SFPUC). The City does not own or operate a water treatment plant (WTP). The water purchased from the SFPUC may be treated at one or more WTPs operated by SFPUC. SFPUC periodically makes improvements to its WTPs in order to improve system reliability and accommodate projected growth in its regional service areas. As noted above, the proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo. Therefore, the proposed project would not prompt a need to expand treatment facilities or regional water system conveyance and storage facilities, and this impact would be less than significant.

The proposed project would connect to existing water delivery systems within the vicinity of the project site. It is anticipated that these pipelines would have sufficient capacity to support delivery of water to the proposed project. However, as noted in Table 1.A, the project sponsor would be required to coordinate with the City and the MPFPD to assess water flow requirements, and ensure the existing water delivery infrastructure is sufficient to serve the proposed project.

Wastewater. As noted in the ConnectMenlo Final EIR, the SVCW WWTP treats raw wastewater from the City and discharges to the deep water channel of the Bay. The SVCW WWTP has an average dry weather design flow of 29 million gallons per day (MGD) and a peak wet weather flow of 71 MGD. In

general, conveyance systems and treatment plants are designed and constructed to accommodate future capacity expansion including additional base flows due to approved growth plus estimated wet weather flows. The ConnectMenlo Final EIR determined that the increase in wastewater flows from implementation of ConnectMenlo would add to the capacity demands on the WWTP and its conveyance system, however, the effect is not substantial and would be integrated into the ongoing planning and budgeting processes to improve the conveyance system, treatment processes and capacity. As noted above, the proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo. Therefore, the proposed project would not prompt a need to expand the SVCW WWTP, and this impact would be less than significant.

The proposed project would connect to the existing sanitary sewer systems within the vicinity of the site. It is anticipated that these pipelines would have sufficient capacity to support the proposed project's wastewater flows. However, as noted in Table 1.A, the project applicant would be required to coordinate with the West Bay Sanitary to assess wastewater flow requirements, and ensure the existing wastewater infrastructure is sufficient to serve the proposed project.

Stormwater Drainage. Refer to Section 3.10. The proposed project would include new connections and upgrades to the existing stormwater infrastructure within the vicinity of the site. Development of the proposed project would result in an increase of impervious surfaces on the site from 31,496 square feet of existing impervious surface coverage to 34,171 square feet of impervious surface coverage. However, the proposed project would include stormwater control features, as described previously, that would reduce the total stormwater runoff from the project site. Runoff would be treated in accordance with the SMCWPPP before flowing to the City's storm drain system.

The proposed project would include the following elements to reduce the demand for and impacts to stormwater infrastructure: a landscaped area providing stormwater treatment on the western edge of ground floor; drought-tolerant landscaping; flow-through planters; and energy-efficient appliances and efficient irrigation systems. Therefore, the proposed project would not require in the relocation or construction of new stormwater drainage facilities that are not already evaluated in this document.

Electricity, Natural Gas, and Telecommunications. As noted in the ConnectMenlo Final EIR, new development under ConnectMenlo would continue to be served by Pacific Gas & Electric (PG&E) or Peninsula Clean Energy (PCE) when it commences transmission of energy over PG&E facilities. Buildout of ConnectMenlo would not significantly increase energy demands within the service territory and would not require new energy supply facilities. As noted above, the proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo. Therefore, the proposed project would not prompt a need to expand electricity or natural gas facilities, and this impact would be less than significant.

Similar to electricity and natural gas, the project site is already served with telecommunications infrastructure. Telecommunication service would continue to be provided to the project site with implementation of the proposed project. In addition, the proposed project would include undergrounding of existing utilities, and would be required to coordinate with the applicable telecommunications provider. Therefore, the proposed project would not require the relocation or

construction of new telecommunications infrastructure beyond that which is already analyzed, and this impact would be less than significant.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that there would be an increase in water demand as a result of buildout of ConnectMenlo – average daily demand would be 343 million gallons per year (MGY), which represents 21 percent of the planning level water demand forecasted in the Urban Water Management Plan (UWMP). The ConnectMenlo Final EIR concluded that water supply is adequate to meet increased demands in normal years through the buildout year of 2040.

During single- and multiple-dry years by 2040, MPMW's total annual water demand, including development associated with ConnectMenlo, is estimated to exceed total annual supply by approximately 333 MGY and 506 MGY, respectively. However, with MPMW's Water Shortage Contingency Plan in place, the shortages in multiple dry years would be managed through demand reductions of up to 50 percent.

In addition, as part of the Zoning update, ConnectMenlo includes green and sustainable building standards in the Bayfront Area. These standards require all new buildings within the Bayfront Area to be maintained without the use of well water and include dual plumbing systems for the use of recycled water. Under the Zoning update, no potable water shall be used for decorative features, unless the water is recycled, and single pass cooling systems are prohibited. Also, future development with a gross floor area of 100,000 square feet or more must submit a proposed water budget for review by the City's Public Works Director prior to certification of occupancy. The ConnectMenlo Final EIR determined that implementation of MPMW's Water Shortage Contingency Plan and green and sustainable building standards would ensure this impact would be less than significant.

As noted above, the proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo. Therefore, there would be sufficient water supplies available to serve the proposed project and reasonably foreseeable future development during normal, single- and multiple-dry years, and this impact would be less than significant.

c. Would the project 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? ***(Less-Than-Significant Impact)***

As noted above, the SVCW WWTP has an average dry weather design flow of 29 MGD and a peak wet weather flow of 71 MGD. The SVCW WWTP has an average currently dry weather flow of 16 MGD. The ConnectMenlo Final EIR determined that full buildout of ConnectMenlo would result in an estimated net increased wastewater generation rate of 309 MGY, or 0.85 MGD, which would not be significant relative to currently available excess dry weather design capacity flow of 13 MGD.

The proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo. Therefore, there would be sufficient wastewater treatment capacity available to serve the proposed project's projected demand in addition to the provider's existing commitments, and this impact would be less than significant.

d. Would the project 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? ***(Less-Than-Significant Impact)***

As noted in the ConnectMenlo Final EIR, the majority (approximately 74.4 percent or 21,658 tons) of solid waste from the City is transported to the Corinda Los Trancos Landfill (Ox Mountain Landfill). The three other landfills that received the second, third, and fourth most waste accounted for 20.5 percent (or 5,966 tons) combined. The ConnectMenlo Final EIR determined that the estimated additional solid waste generated by development associated with the full buildout of ConnectMenlo would be approximately 58.3 tons per day, which represents less than 1.5 percent of the daily capacity of the Ox Mountain Landfill, and less than 2 percent of the permitted daily capacity of the landfill with the smallest daily capacity that could receive waste as a result of implementation.

The ConnectMenlo Final EIR determined that the Ox Mountain Landfill is likely to reach its permitted maximum capacity prior to 2040. However, the other three landfills that serve the City are not estimated to close until 2048, 2077, and 2107. In addition, there are 15 other landfills that received waste from Menlo Park in 2014. If one or more of the four landfills were unavailable in the future, it is likely the City's solid waste volume would be increased at one or more of the other landfills that already serve the City.

As a part of the Zoning Update, ConnectMenlo includes green and sustainable building standards in the Bayfront Area that require all applicants to submit a zero-waste management plan to the City. The zero-waste management plan must clearly outline the applicant's plan to reduce, recycle, and compost waste from demolition, construction and occupancy phases of the building. Zero waste is defined as 90 percent overall diversion of non-hazardous waste from landfill and incineration.

The proposed project would be consistent with the type and intensity of development and population projections assumed for the project site in ConnectMenlo and would be required to comply with existing regulations related to solid waste. Therefore, there would be solid waste capacity available to serve the proposed project, and this impact would be less than significant.

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? ***(Less-Than-Significant Impact)***

Refer to Section 3.19.f. The proposed project would comply with all federal, State, and local solid waste statutes and/or regulations related to solid waste and this impact would be less than significant.

3.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. 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?	☐	☐	☐	☒
c. 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?	☐	☐	☐	☒
d. 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?	☐	☐	☐	☒

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? ***(Less-Than-Significant Impact)***

The ConnectMenlo Final EIR determined that the Bayfront Area, which includes the project site, does not contain areas of moderate, high, or very high Fire Hazard Severity for the Local Responsibility area, nor does it contain any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility Area (SRA). In addition, as noted in Section 3.9.f, the proposed project would not impair the implementation of, or physically interfere with, and adopted emergency response plan. Therefore, this impact would be less than significant.

b. Would the project, 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? ***(No Impact)***

Refer to Section 3.20.a. Additionally, as noted in Section 1.0, Project Description, the project is generally level, and is bound by existing development on all sides. Therefore, the proposed project would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c. Would the project 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? ***(No Impact)***

Refer to Section 3.20.a. The proposed project is not located within an SRA for fire service and is not within a very high fire hazard severity zone. Therefore, the proposed project would not require the

installation or maintenance of associated infrastructure, and this impact would be less than significant.

d. Would the project 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? ***(No Impact)***

Refer to Section 3.20.a and 3.20.b. The project site is generally level and is not located within an SRA for fire service or a very high fire hazard severity zone. Therefore, the proposed project would not expose people or structures to significant risks as a result of post-fire slope instability or drainage and runoff changes.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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.)	☒	☐	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? ***(Less-Than-Significant Impact)***

The project site consists of an infill site in an urban area. The site does not support habitat for special-status plant or animal species. With mitigation, development of the proposed project would not: 1) degrade the quality of the environment; 2) substantially reduce the habitat of a fish or wildlife species; 3) cause a fish or wildlife species population to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, this impact would be less than significant.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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)? ***(Potentially Significant Impact)***

As discussed in this Initial Study, potentially significant impacts related to air quality, greenhouse gas emissions, noise, and transportation may result from the proposed project. These impacts, as well as any cumulatively considerable impacts that may result from the proposed project related to these issues, will be evaluated in an EIR. In addition, the topic of population and housing will also be discussed.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? ***(No Impact)***

The proposed project would not result in any environmental effects that would cause substantial direct or indirect adverse effects on human beings.

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4.0 LIST OF PREPARERS

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APPENDIX A

CALEEMOD OUTPUT SHEETS

111 Independence Drive Project

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	111.00	Space	0.10	51,220.00	0
City Park	0.38	Acre	0.30	16,476.00	0
Apartments Mid Rise	106.00	Dwelling Unit	0.51	144,599.00	303
Strip Mall	0.50	1000sqft	0.01	500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E, 2015)

Land Use - The proposed project would include an 144,599-gross-square-foot (gsf), eight-story multi-family apartment building with 106 dwelling units and a 500 -square-foot commercial space, as well as associated open space and parking.

Construction Phase - 21-month construction period

Demolition -

Grading - 1,575 cubic yards of soil would be off-hauled

Mobile Land Use Mitigation -

Area Mitigation -

Vehicle Trips - Defaults

111 Independence Drive Project - Bay Area AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	100.00	290.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	1.00	30.00
tblGrading	AcresOfGrading	15.00	0.50
tblGrading	MaterialExported	0.00	1,575.00
tblLandUse	LandUseSquareFeet	44,400.00	51,220.00
tblLandUse	LandUseSquareFeet	16,552.80	16,476.00
tblLandUse	LandUseSquareFeet	106,000.00	144,599.00
tblLandUse	LotAcreage	1.00	0.10
tblLandUse	LotAcreage	0.38	0.30
tblLandUse	LotAcreage	2.79	0.51
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1059	1.0036	0.8580	1.9500e-003	0.0673	0.0473	0.1145	0.0212	0.0440	0.0653	0.0000	175.3498	175.3498	0.0299	0.0000	176.0964
2021	1.1559	1.1116	1.0970	2.6100e-003	0.0958	0.0494	0.1452	0.0258	0.0456	0.0714	0.0000	235.6055	235.6055	0.0388	0.0000	236.5742
Maximum	**1.1559**	**1.1116**	**1.0970**	**2.6100e-003**	**0.0958**	**0.0494**	**0.1452**	**0.0258**	**0.0456**	**0.0714**	**0.0000**	**235.6055**	**235.6055**	**0.0388**	**0.0000**	**236.5742**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1059	1.0036	0.8580	1.9500e-003	0.0673	0.0473	0.1145	0.0212	0.0440	0.0653	0.0000	175.3497	175.3497	0.0299	0.0000	176.0963
2021	1.1559	1.1116	1.0970	2.6100e-003	0.0958	0.0494	0.1452	0.0258	0.0456	0.0714	0.0000	235.6054	235.6054	0.0388	0.0000	236.5741
Maximum	**1.1559**	**1.1116**	**1.0970**	**2.6100e-003**	**0.0958**	**0.0494**	**0.1452**	**0.0258**	**0.0456**	**0.0714**	**0.0000**	**235.6054**	**235.6054**	**0.0388**	**0.0000**	**236.5741**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-6-2020	7-5-2020	0.2831	0.2831
2	7-6-2020	10-5-2020	0.3915	0.3915
3	10-6-2020	1-5-2021	0.4286	0.4286
4	1-6-2021	4-5-2021	0.3802	0.3802
5	4-6-2021	7-5-2021	0.3816	0.3816
6	7-6-2021	9-30-2021	0.3399	0.3399
		Highest	0.4286	0.4286

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9417	0.0147	1.1257	7.1000e-004		0.0525	0.0525		0.0525	0.0525	4.8325	3.2726	8.1051	9.0100e-003	3.2000e-004	8.4249
Energy	5.0000e-003	0.0428	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	131.8534	131.8534	8.2100e-003	2.4100e-003	132.7770
Mobile	0.1755	0.8618	1.9615	6.9900e-003	0.6039	6.3400e-003	0.6102	0.1621	5.9400e-003	0.1680	0.0000	641.8072	641.8072	0.0237	0.0000	642.4008
Waste						0.0000	0.0000		0.0000	0.0000	10.0115	0.0000	10.0115	0.5917	0.0000	24.8031
Water						0.0000	0.0000		0.0000	0.0000	2.2028	8.1243	10.3271	0.2270	5.4900e-003	17.6374
Total	**1.1222**	**0.9193**	**3.1055**	**7.9700e-003**	**0.6039**	**0.0623**	**0.6662**	**0.1621**	**0.0619**	**0.2240**	**17.0468**	**785.0575**	**802.1043**	**0.8596**	**8.2200e-003**	**826.0431**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6976	0.0128	0.7905	6.0000e-005		4.6500e-003	4.6500e-003		4.6500e-003	4.6500e-003	0.0000	5.5222	5.5222	1.3300e-003	8.0000e-005	5.5785
Energy	5.0000e-003	0.0428	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	131.8534	131.8534	8.2100e-003	2.4100e-003	132.7770
Mobile	0.1681	0.8083	1.7937	6.2300e-003	0.5326	5.6800e-003	0.5383	0.1430	5.3200e-003	0.1483	0.0000	571.7712	571.7712	0.0218	0.0000	572.3159
Waste						0.0000	0.0000		0.0000	0.0000	10.0115	0.0000	10.0115	0.5917	0.0000	24.8031
Water						0.0000	0.0000		0.0000	0.0000	2.2028	8.1243	10.3271	0.2270	5.4900e-003	17.6374
Total	**0.8707**	**0.8638**	**2.6025**	**6.5600e-003**	**0.5326**	**0.0138**	**0.5464**	**0.1430**	**0.0134**	**0.1564**	**12.2143**	**717.2711**	**729.4854**	**0.8500**	**7.9800e-003**	**753.1119**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**22.41**	**6.03**	**16.20**	**17.69**	**11.80**	**77.87**	**17.98**	**11.80**	**78.31**	**30.18**	**28.35**	**8.63**	**9.05**	**1.12**	**2.92**	**8.83**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/6/2020	5/15/2020	5	30	
2	Site Preparation	Site Preparation	5/18/2020	6/26/2020	5	30	
3	Grading	Grading	6/29/2020	8/7/2020	5	30	
4	Building Construction	Building Construction	8/10/2020	9/17/2021	5	290	
5	Paving	Paving	9/20/2021	10/29/2021	5	30	
6	Architectural Coating	Architectural Coating	11/1/2021	12/10/2021	5	30	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.1

Residential Indoor: 292,813; Residential Outdoor: 97,604; Non-Residential Indoor: 750; Non-Residential Outdoor: 250; Striped Parking Area: 3,073 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	197.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	105.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1181	0.1143	1.8000e-004		7.0100e-003	7.0100e-003		6.6900e-003	6.6900e-003	0.0000	15.6113	15.6113	2.9500e-003	0.0000	15.6851
Total	**0.0130**	**0.1181**	**0.1143**	**1.8000e-004**		**7.0100e-003**	**7.0100e-003**		**6.6900e-003**	**6.6900e-003**	**0.0000**	**15.6113**	**15.6113**	**2.9500e-003**	**0.0000**	**15.6851**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391
Total	**5.0000e-004**	**3.6000e-004**	**3.6800e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0384**	**1.0384**	**3.0000e-005**	**0.0000**	**1.0391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1181	0.1143	1.8000e-004		7.0100e-003	7.0100e-003		6.6900e-003	6.6900e-003	0.0000	15.6113	15.6113	2.9500e-003	0.0000	15.6851
Total	**0.0130**	**0.1181**	**0.1143**	**1.8000e-004**		**7.0100e-003**	**7.0100e-003**		**6.6900e-003**	**6.6900e-003**	**0.0000**	**15.6113**	**15.6113**	**2.9500e-003**	**0.0000**	**15.6851**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391
Total	**5.0000e-004**	**3.6000e-004**	**3.6800e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0384**	**1.0384**	**3.0000e-005**	**0.0000**	**1.0391**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.1265	0.0614	1.5000e-004		5.0300e-003	5.0300e-003		4.6300e-003	4.6300e-003	0.0000	12.8388	12.8388	4.1500e-003	0.0000	12.9426
Total	**0.0103**	**0.1265**	**0.0614**	**1.5000e-004**	**2.7000e-004**	**5.0300e-003**	**5.3000e-003**	**3.0000e-005**	**4.6300e-003**	**4.6600e-003**	**0.0000**	**12.8388**	**12.8388**	**4.1500e-003**	**0.0000**	**12.9426**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	1.8400e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5192	0.5192	1.0000e-005	0.0000	0.5195
Total	**2.5000e-004**	**1.8000e-004**	**1.8400e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5192**	**0.5192**	**1.0000e-005**	**0.0000**	**0.5195**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.1265	0.0614	1.5000e-004		5.0300e-003	5.0300e-003		4.6300e-003	4.6300e-003	0.0000	12.8387	12.8387	4.1500e-003	0.0000	12.9426
Total	**0.0103**	**0.1265**	**0.0614**	**1.5000e-004**	**2.7000e-004**	**5.0300e-003**	**5.3000e-003**	**3.0000e-005**	**4.6300e-003**	**4.6600e-003**	**0.0000**	**12.8387**	**12.8387**	**4.1500e-003**	**0.0000**	**12.9426**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	1.8400e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5192	0.5192	1.0000e-005	0.0000	0.5195
Total	**2.5000e-004**	**1.8000e-004**	**1.8400e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5192**	**0.5192**	**1.0000e-005**	**0.0000**	**0.5195**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	6.2200e-003	0.0000	6.2200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0130	0.1181	0.1143	1.8000e-004		7.0100e-003	7.0100e-003		6.6900e-003	6.6900e-003	0.0000	15.6113	15.6113	2.9500e-003	0.0000	15.6851
Total	**0.0130**	**0.1181**	**0.1143**	**1.8000e-004**	**0.0114**	**7.0100e-003**	**0.0184**	**6.2200e-003**	**6.6900e-003**	**0.0129**	**0.0000**	**15.6113**	**15.6113**	**2.9500e-003**	**0.0000**	**15.6851**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.2000e-004	0.0288	5.7900e-003	8.0000e-005	1.6600e-003	9.0000e-005	1.7600e-003	4.6000e-004	9.0000e-005	5.5000e-004	0.0000	7.5488	7.5488	3.9000e-004	0.0000	7.5585
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391
Total	**1.3200e-003**	**0.0292**	**9.4700e-003**	**9.0000e-005**	**2.8500e-003**	**1.0000e-004**	**2.9500e-003**	**7.8000e-004**	**1.0000e-004**	**8.7000e-004**	**0.0000**	**8.5872**	**8.5872**	**4.2000e-004**	**0.0000**	**8.5975**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	6.2200e-003	0.0000	6.2200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0130	0.1181	0.1143	1.8000e-004		7.0100e-003	7.0100e-003		6.6900e-003	6.6900e-003	0.0000	15.6113	15.6113	2.9500e-003	0.0000	15.6851
Total	**0.0130**	**0.1181**	**0.1143**	**1.8000e-004**	**0.0114**	**7.0100e-003**	**0.0184**	**6.2200e-003**	**6.6900e-003**	**0.0129**	**0.0000**	**15.6113**	**15.6113**	**2.9500e-003**	**0.0000**	**15.6851**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.2000e-004	0.0288	5.7900e-003	8.0000e-005	1.6600e-003	9.0000e-005	1.7600e-003	4.6000e-004	9.0000e-005	5.5000e-004	0.0000	7.5488	7.5488	3.9000e-004	0.0000	7.5585
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	3.6800e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0384	1.0384	3.0000e-005	0.0000	1.0391
Total	**1.3200e-003**	**0.0292**	**9.4700e-003**	**9.0000e-005**	**2.8500e-003**	**1.0000e-004**	**2.9500e-003**	**7.8000e-004**	**1.0000e-004**	**8.7000e-004**	**0.0000**	**8.5872**	**8.5872**	**4.2000e-004**	**0.0000**	**8.5975**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0448	0.4603	0.3842	5.9000e-004		0.0272	0.0272		0.0250	0.0250	0.0000	52.0315	52.0315	0.0168	0.0000	52.4522
Total	**0.0448**	**0.4603**	**0.3842**	**5.9000e-004**		**0.0272**	**0.0272**		**0.0250**	**0.0250**	**0.0000**	**52.0315**	**52.0315**	**0.0168**	**0.0000**	**52.4522**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6300e-003	0.1380	0.0347	3.3000e-004	7.8400e-003	6.7000e-004	8.5200e-003	2.2700e-003	6.4000e-004	2.9100e-003	0.0000	31.3136	31.3136	1.6200e-003	0.0000	31.3540
Worker	0.0181	0.0130	0.1341	4.2000e-004	0.0431	2.9000e-004	0.0434	0.0115	2.7000e-004	0.0118	0.0000	37.7985	37.7985	9.1000e-004	0.0000	37.8214
Total	**0.0227**	**0.1509**	**0.1688**	**7.5000e-004**	**0.0510**	**9.6000e-004**	**0.0520**	**0.0138**	**9.1000e-004**	**0.0147**	**0.0000**	**69.1121**	**69.1121**	**2.5300e-003**	**0.0000**	**69.1754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0448	0.4603	0.3842	5.9000e-004		0.0272	0.0272		0.0250	0.0250	0.0000	52.0314	52.0314	0.0168	0.0000	52.4521
Total	**0.0448**	**0.4603**	**0.3842**	**5.9000e-004**		**0.0272**	**0.0272**		**0.0250**	**0.0250**	**0.0000**	**52.0314**	**52.0314**	**0.0168**	**0.0000**	**52.4521**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6300e-003	0.1380	0.0347	3.3000e-004	7.8400e-003	6.7000e-004	8.5200e-003	2.2700e-003	6.4000e-004	2.9100e-003	0.0000	31.3136	31.3136	1.6200e-003	0.0000	31.3540
Worker	0.0181	0.0130	0.1341	4.2000e-004	0.0431	2.9000e-004	0.0434	0.0115	2.7000e-004	0.0118	0.0000	37.7985	37.7985	9.1000e-004	0.0000	37.8214
Total	**0.0227**	**0.1509**	**0.1688**	**7.5000e-004**	**0.0510**	**9.6000e-004**	**0.0520**	**0.0138**	**9.1000e-004**	**0.0147**	**0.0000**	**69.1121**	**69.1121**	**2.5300e-003**	**0.0000**	**69.1754**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0721	0.7426	0.6755	1.0600e-003		0.0416	0.0416		0.0383	0.0383	0.0000	93.0763	93.0763	0.0301	0.0000	93.8289
Total	**0.0721**	**0.7426**	**0.6755**	**1.0600e-003**		**0.0416**	**0.0416**		**0.0383**	**0.0383**	**0.0000**	**93.0763**	**93.0763**	**0.0301**	**0.0000**	**93.8289**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7900e-003	0.2234	0.0558	5.8000e-004	0.0140	4.9000e-004	0.0145	4.0600e-003	4.6000e-004	4.5200e-003	0.0000	55.4737	55.4737	2.7300e-003	0.0000	55.5419
Worker	0.0300	0.0207	0.2190	7.2000e-004	0.0772	5.0000e-004	0.0777	0.0205	4.6000e-004	0.0210	0.0000	65.2292	65.2292	1.4600e-003	0.0000	65.2658
Total	**0.0368**	**0.2441**	**0.2748**	**1.3000e-003**	**0.0912**	**9.9000e-004**	**0.0922**	**0.0246**	**9.2000e-004**	**0.0255**	**0.0000**	**120.7029**	**120.7029**	**4.1900e-003**	**0.0000**	**120.8076**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0721	0.7426	0.6755	1.0600e-003		0.0416	0.0416		0.0383	0.0383	0.0000	93.0762	93.0762	0.0301	0.0000	93.8288
Total	**0.0721**	**0.7426**	**0.6755**	**1.0600e-003**		**0.0416**	**0.0416**		**0.0383**	**0.0383**	**0.0000**	**93.0762**	**93.0762**	**0.0301**	**0.0000**	**93.8288**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7900e-003	0.2234	0.0558	5.8000e-004	0.0140	4.9000e-004	0.0145	4.0600e-003	4.6000e-004	4.5200e-003	0.0000	55.4737	55.4737	2.7300e-003	0.0000	55.5419
Worker	0.0300	0.0207	0.2190	7.2000e-004	0.0772	5.0000e-004	0.0777	0.0205	4.6000e-004	0.0210	0.0000	65.2292	65.2292	1.4600e-003	0.0000	65.2658
Total	**0.0368**	**0.2441**	**0.2748**	**1.3000e-003**	**0.0912**	**9.9000e-004**	**0.0922**	**0.0246**	**9.2000e-004**	**0.0255**	**0.0000**	**120.7029**	**120.7029**	**4.1900e-003**	**0.0000**	**120.8076**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.1008	0.1064	1.7000e-004		5.3000e-003	5.3000e-003		4.9300e-003	4.9300e-003	0.0000	14.0887	14.0887	4.1000e-003	0.0000	14.1913
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0108**	**0.1008**	**0.1064**	**1.7000e-004**		**5.3000e-003**	**5.3000e-003**		**4.9300e-003**	**4.9300e-003**	**0.0000**	**14.0887**	**14.0887**	**4.1000e-003**	**0.0000**	**14.1913**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	5.7000e-004	6.0600e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8036	1.8036	4.0000e-005	0.0000	1.8046
Total	**8.3000e-004**	**5.7000e-004**	**6.0600e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.8036**	**1.8036**	**4.0000e-005**	**0.0000**	**1.8046**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0108	0.1008	0.1064	1.7000e-004		5.3000e-003	5.3000e-003		4.9300e-003	4.9300e-003	0.0000	14.0887	14.0887	4.1000e-003	0.0000	14.1913
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0108**	**0.1008**	**0.1064**	**1.7000e-004**		**5.3000e-003**	**5.3000e-003**		**4.9300e-003**	**4.9300e-003**	**0.0000**	**14.0887**	**14.0887**	**4.1000e-003**	**0.0000**	**14.1913**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	5.7000e-004	6.0600e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8036	1.8036	4.0000e-005	0.0000	1.8046
Total	**8.3000e-004**	**5.7000e-004**	**6.0600e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.8036**	**1.8036**	**4.0000e-005**	**0.0000**	**1.8046**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0312					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2800e-003	0.0229	0.0273	4.0000e-005		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	3.8299	3.8299	2.6000e-004	0.0000	3.8365
Total	**1.0345**	**0.0229**	**0.0273**	**4.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**3.8299**	**3.8299**	**2.6000e-004**	**0.0000**	**3.8365**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.7000e-004	6.7000e-004	7.0700e-003	2.0000e-005	2.4900e-003	2.0000e-005	2.5100e-003	6.6000e-004	1.0000e-005	6.8000e-004	0.0000	2.1042	2.1042	5.0000e-005	0.0000	2.1054
Total	**9.7000e-004**	**6.7000e-004**	**7.0700e-003**	**2.0000e-005**	**2.4900e-003**	**2.0000e-005**	**2.5100e-003**	**6.6000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**2.1042**	**2.1042**	**5.0000e-005**	**0.0000**	**2.1054**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0312					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2800e-003	0.0229	0.0273	4.0000e-005		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	3.8299	3.8299	2.6000e-004	0.0000	3.8365
Total	**1.0345**	**0.0229**	**0.0273**	**4.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**3.8299**	**3.8299**	**2.6000e-004**	**0.0000**	**3.8365**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.7000e-004	6.7000e-004	7.0700e-003	2.0000e-005	2.4900e-003	2.0000e-005	2.5100e-003	6.6000e-004	1.0000e-005	6.8000e-004	0.0000	2.1042	2.1042	5.0000e-005	0.0000	2.1054
Total	**9.7000e-004**	**6.7000e-004**	**7.0700e-003**	**2.0000e-005**	**2.4900e-003**	**2.0000e-005**	**2.5100e-003**	**6.6000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**2.1042**	**2.1042**	**5.0000e-005**	**0.0000**	**2.1054**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1681	0.8083	1.7937	6.2300e-003	0.5326	5.6800e-003	0.5383	0.1430	5.3200e-003	0.1483	0.0000	571.7712	571.7712	0.0218	0.0000	572.3159
Unmitigated	0.1755	0.8618	1.9615	6.9900e-003	0.6039	6.3400e-003	0.6102	0.1621	5.9400e-003	0.1680	0.0000	641.8072	641.8072	0.0237	0.0000	642.4008

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	704.90	677.34	621.16	1,591,319	1,403,544
City Park	0.00	0.00	0.00		
Strip Mall	22.16	21.02	10.22	31,248	27,561
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	727.06	698.36	631.38	1,622,568	1,431,105

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
City Park	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
Strip Mall	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768
Unenclosed Parking with Elevator	0.576985	0.039376	0.193723	0.112069	0.016317	0.005358	0.017943	0.025814	0.002614	0.002274	0.005874	0.000887	0.000768

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	82.3465	82.3465	7.2600e-003	1.5000e-003	82.9758
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	82.3465	82.3465	7.2600e-003	1.5000e-003	82.9758
NaturalGas Mitigated	5.0000e-003	0.0428	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.5070	49.5070	9.5000e-004	9.1000e-004	49.8012
NaturalGas Unmitigated	5.0000e-003	0.0428	0.0182	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.5070	49.5070	9.5000e-004	9.1000e-004	49.8012

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	925426	4.9900e-003	0.0426	0.0182	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.3842	49.3842	9.5000e-004	9.1000e-004	49.6777
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	2300	1.0000e-005	1.1000e-004	9.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1227	0.1227	0.0000	0.0000	0.1235
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**5.0000e-003**	**0.0428**	**0.0182**	**2.7000e-004**		**3.4600e-003**	**3.4600e-003**		**3.4600e-003**	**3.4600e-003**	**0.0000**	**49.5070**	**49.5070**	**9.5000e-004**	**9.1000e-004**	**49.8012**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	925426	4.9900e-003	0.0426	0.0182	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.3842	49.3842	9.5000e-004	9.1000e-004	49.6777
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	2300	1.0000e-005	1.1000e-004	9.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1227	0.1227	0.0000	0.0000	0.1235
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**5.0000e-003**	**0.0428**	**0.0182**	**2.7000e-004**		**3.4600e-003**	**3.4600e-003**		**3.4600e-003**	**3.4600e-003**	**0.0000**	**49.5070**	**49.5070**	**9.5000e-004**	**9.1000e-004**	**49.8012**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	447531	66.7453	5.8900e-003	1.2200e-003	67.2554
City Park	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5240	0.7815	7.0000e-005	1.0000e-005	0.7875
Unenclosed Parking with Elevator	99366.8	14.8197	1.3100e-003	2.7000e-004	14.9330
Total		**82.3465**	**7.2700e-003**	**1.5000e-003**	**82.9758**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	447531	66.7453	5.8900e-003	1.2200e-003	67.2554
City Park	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5240	0.7815	7.0000e-005	1.0000e-005	0.7875
Unenclosed Parking with Elevator	99366.8	14.8197	1.3100e-003	2.7000e-004	14.9330
Total		**82.3465**	**7.2700e-003**	**1.5000e-003**	**82.9758**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6976	0.0128	0.7905	6.0000e-005		4.6500e-003	4.6500e-003		4.6500e-003	4.6500e-003	0.0000	5.5222	5.5222	1.3300e-003	8.0000e-005	5.5785
Unmitigated	0.9417	0.0147	1.1257	7.1000e-004		0.0525	0.0525		0.0525	0.0525	4.8325	3.2726	8.1051	9.0100e-003	3.2000e-004	8.4249

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1031					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.2446	5.6300e-003	0.3368	6.7000e-004		0.0482	0.0482		0.0482	0.0482	4.8325	1.9849	6.8175	7.7700e-003	3.2000e-004	7.1061
Landscaping	0.0239	9.1000e-003	0.7889	4.0000e-005		4.3600e-003	4.3600e-003		4.3600e-003	4.3600e-003	0.0000	1.2877	1.2877	1.2500e-003	0.0000	1.3188
Total	**0.9417**	**0.0147**	**1.1257**	**7.1000e-004**		**0.0525**	**0.0525**		**0.0525**	**0.0525**	**4.8325**	**3.2726**	**8.1051**	**9.0200e-003**	**3.2000e-004**	**8.4249**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1031					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.3000e-004	3.6600e-003	1.5600e-003	2.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.2346	4.2346	8.0000e-005	8.0000e-005	4.2597
Landscaping	0.0239	9.1000e-003	0.7889	4.0000e-005		4.3600e-003	4.3600e-003		4.3600e-003	4.3600e-003	0.0000	1.2877	1.2877	1.2500e-003	0.0000	1.3188
Total	**0.6976**	**0.0128**	**0.7905**	**6.0000e-005**		**4.6600e-003**	**4.6600e-003**		**4.6600e-003**	**4.6600e-003**	**0.0000**	**5.5222**	**5.5222**	**1.3300e-003**	**8.0000e-005**	**5.5785**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.3271	0.2270	5.4900e-003	17.6374
Unmitigated	10.3271	0.2270	5.4900e-003	17.6374

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	6.90633 / 4.35399	10.0372	0.2257	5.4600e-003	17.3068
City Park	0 / 0.452763	0.2363	2.0000e-005	0.0000	0.2382
Strip Mall	0.0370363 / 0.0226996	0.0535	1.2100e-003	3.0000e-005	0.0925
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**10.3271**	**0.2270**	**5.4900e-003**	**17.6374**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	6.90633 / 4.35399	10.0372	0.2257	5.4600e-003	17.3068
City Park	0 / 0.452763	0.2363	2.0000e-005	0.0000	0.2382
Strip Mall	0.0370363 / 0.0226996	0.0535	1.2100e-003	3.0000e-005	0.0925
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**10.3271**	**0.2270**	**5.4900e-003**	**17.6374**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.0115	0.5917	0.0000	24.8031
Unmitigated	10.0115	0.5917	0.0000	24.8031

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	48.76	9.8978	0.5850	0.0000	24.5215
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Strip Mall	0.53	0.1076	6.3600e-003	0.0000	0.2665
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**10.0115**	**0.5917**	**0.0000**	**24.8031**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	48.76	9.8978	0.5850	0.0000	24.5215
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Strip Mall	0.53	0.1076	6.3600e-003	0.0000	0.2665
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**10.0115**	**0.5917**	**0.0000**	**24.8031**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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APPENDIX C

INITIAL STUDY ADDENDUM

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INITIAL STUDY ADDENDUM

Since publication of the Initial Study, which was circulated with the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) on June 14, 2019, staff have identified the following minor clarifications and revisions to the description of the project and analysis provided in the Initial Study. In no case do these revisions result in a change to the impact conclusions presented in the Initial Study.

- Footnote 1 on page 1-2 of the Initial Study describes the street grid and directional descriptions used throughout the Initial Study. However, these directional descriptions have been revised in the EIR as identified in Chapter 3.0, Project Description, Footnote 1 on page 3-1 of the EIR, to reflect the more commonly used directional descriptions used by the City. Roadways progressing parallel to US 101 are designated eastbound-westbound (rather than northbound-southbound as identified in the Initial Study) and roadways parallel to Marsh Road are designated northbound-southbound (rather than eastbound-westbound). All compass directions referenced in the EIR use this revised orientation and north arrows on all figures note this directional convention as "project" north.

- The proposed square footages, residential unit mix, and other elements of the project have been refined since publication of the NOP and preparation of the Initial Study, and the EIR reflects these refinements. Project plans may be subject to continued refinement prior to consideration of project approval. The analysis in the Initial Study and EIR evaluates the maximum development potential for the proposed project.

- Energy estimates have been updated based on minor revisions to the project description and additional project-specific information. Based on the updated analysis, the estimated potential increased electricity demand associated with the proposed project is 515,758 kilowatt-hours (kWh) per year. In addition, the proposed project would result in approximately 1,523,278 vehicle miles traveled (VMT) per year, resulting in the consumption of approximately 69,240 gallons of gasoline per year. Impacts related to consumption of energy resources as discussed in Section 3.6, Energy would remain less than significant.

- The project has been revised to be consistent with the City's recently adopted reach codes, which require the proposed building to be all electric. No natural gas connections would be installed. As such, the analysis of energy impacts provided in Section 3.6, Energy of the Initial Study overestimates the estimated annual energy consumption assumed for the proposed project as identified in Table 3.A on page 3-16. As shown, natural gas use represents a small fraction of overall energy use and the project's impacts related to use of energy resources would be less than significant with or without the use of natural gas.

- The initiation of project construction and the project opening year have been revised to reflect the current project status throughout the EIR.

- Appendix B, which includes a copy of the ConnectMenlo Mitigation Monitoring and Reporting Program has been added to the Initial Study. The proposed project would be required to comply with all applicable mitigation measures identified in the ConnectMenlo MMRP, which is a requirement of any proposed development project in the city.

APPENDIX D

HOUSING NEEDS ASSESSMENT

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KEYSER MARSTON ASSOCIATES

HOUSING NEEDS ASSESSMENT
111 INDEPENDENCE DRIVE PROJECT

Prepared for:
City of Menlo Park

Prepared by:
Keyser Marston Associates, Inc.

October 2020

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1.0 EXECUTIVE SUMMARY

This Housing Needs Assessment (HNA) provides an analysis of housing supply and housing demand impacts of the proposed 111 Independence Drive Project (Project) in the City of Menlo Park (City) and evaluates the potential that the proposed Project could contribute to displacement of existing residents within the City of East Palo Alto and the Belle Haven neighborhood of Menlo Park, two proximate communities identified as having risk factors for displacement. The HNA is part of a range of analyses provided to assist in the decision-making and entitlement process for the proposed Project and accompanies the Environmental Impact Report (EIR). An HNA is, however, not a requirement of the California Environmental Quality Act (CEQA). Preparation of this HNA is required under the terms of a 2017 settlement agreement between the cities of Menlo Park and East Palo Alto[1].

The proposed Project would include 105 new multifamily rental units and an approximately 712 square foot ground floor retail/café space. The proposed Project would replace an existing office building encompassing approximately 15,000 square feet of building area. A summary of the proposed Project is provided in Table 1-1, below.

Table 1-1. Project Summary

	Residential Units	Building Area (1)
Existing Office Building *[To Be Demolished]*		15,000 SF
New Residential Building		
Residential	105 Units	94,001 SF
Ground Floor Retail		712 SF
		94,713 SF
Net Change with Project	105 Units	79,713 SF

(1) Parking structure is not included in building area totals.
Source: Initial Study for 111 Independence Drive.

1.1 Housing Availability

The term "housing availability" is used to refer to the combined net housing supply and housing demand impacts of the proposed Project taking into consideration:

[1] In 2016, the City updated its General Plan, specifically the land use and circulation elements, commonly referred to as ConnectMenlo. The City completed and certified a program level EIR for ConnectMenlo, which determined that there would be a less than significant impact on population and housing, except cumulative impacts projected to be reduced to less than significant following an update of ABAG regional forecasts. However, pursuant to the terms of the 2017 City of East Palo Alto v. City of Menlo Park Settlement Agreement, which settled the lawsuit regarding the ConnectMenlo EIR, preparation of this HNA is required.

a) Construction of new housing units, which adds to housing availability through additions to the housing supply;

b) Removal of existing jobs, which adds to housing availability by reducing demand for housing by employees; and

c) Addition of new jobs, which reduces housing availability by increasing demand for housing by employees.

Prior HNAs prepared for non-residential projects in Menlo Park have not used the term "housing availability" because these projects impact only the demand or need for housing. For purposes of a residential project, a new term is introduced to describe combined effects on supply and demand for housing.

1.2 Net Impact on Housing Availability

The proposed Project is estimated to increase the number of available housing units by 113 units as shown in Table 1-2 and Chart 1. This estimate reflects the combined effect of:

1. The 105 new residential units added to the housing supply by the proposed Project.

2. A 28-unit increase in housing availability from removal of existing on-site jobs, which reduces worker housing demand. Removal of the existing office building removes an estimated 59 on-site jobs. Five new on-site jobs are estimated to be added in the retail / café space and in property management and maintenance for the residential units. This results in a net reduction of 54 jobs. Removal of 54 jobs translates to a net reduction in employee[2] housing demand of 28 units based on 1.88 workers per housing unit[3]. See Section 4 for supporting analysis.

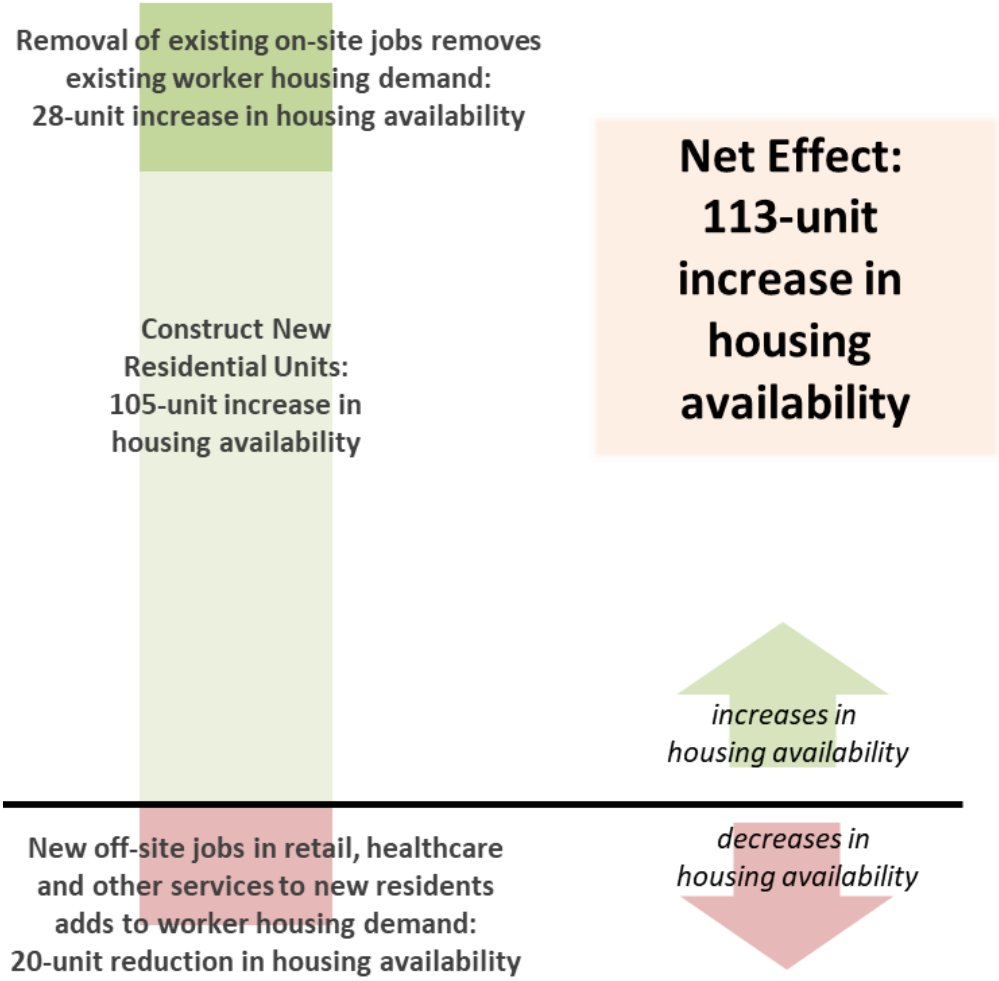
3. A 20-unit decrease in housing availability due to added housing demand by workers in off-site services to new residents such as restaurants, retail, education, medical care and others. This estimate reflects consideration of "multiplier effects" of household spending by residents of the new units consistent with the 2017 settlement agreement. Analysis supporting this estimate is provided in Section 5.

[2] The terms "worker" and "employee" are used interchangeably.

[3] This factor reflects the average number of workers per working household and is derived from U.S. Census data. See additional discussion under Step 2 on page 19.

Table 1-2. Estimated Net Impact of Project on Housing Availability		
1.	Increase in available housing from construction of new units	105 Units
2.	Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	28 Units
3.	Decrease in available housing due to increase in housing demand by off-site workers in services to new residents	(20 Units)
Net Increase in Available Housing		**113 Units**

Chart 1 - Net Impact on Housing Availability from Proposed Project



1.3 Net Impact on Housing Availability by Income Category

The net impact on housing availability is estimated for each of the following six affordability categories, each expressed in relation to local Area Median Income (AMI):

- Extremely Low Income – households up to 30% of AMI;
- Very Low Income – households over 30% up to 50% of AMI;
- Low Income – households over 50% up to 80% of AMI;
- Moderate Income – households over 80% up to 120% of AMI;
- Above Moderate Income – households over 120% up to 150% of AMI; and
- Over 150% of AMI – households above 150% of AMI.

According to the California Department of Housing and Community Development (HCD), the AMI for a family of four in San Mateo County, is $136,800 as of 2019[4]. Section 2 provides income limits applicable to each of the identified income categories. The affordability categories from 0% through 120% AMI reflect those addressed by statewide housing programs such as the Regional Housing Needs Allocation (RHNA) process. In addition, the Above Moderate Income tier is included in the analysis for consistency with HNAs prepared for prior projects in Menlo Park and to provide decision makers with information regarding a broad spectrum of housing affordability levels. Above Moderate Income households also face affordable housing challenges in Menlo Park as well as in the broader Bay Area. In fact, due to the high cost of housing, housing affordability challenges also extend to households earning over 150% of AMI[5], particularly in the for-sale housing market. The Over 150% of AMI category captures households with incomes that exceed 150% AMI and includes all households not included within one of the other income categories.

Scenarios Addressed

The analysis of housing availability impacts addresses two scenarios:

- Scenario 1 assumes compliance with the City's Below Market Rate (BMR) affordable housing requirement by providing all units affordable to Low Income households.

- Scenario 2 assumes BMR units are distributed between the Very Low, Low and Moderate Income categories, which reflects the Project applicant's proposal. The

[4] The 2019 income limits were the most recent available at the time the analysis was prepared.

[5] An income of approximately 227% of AMI, is estimated to be needed to afford the median priced home in Menlo Park. The median priced home in Menlo Park is $2.2 million based on home sales from August 1, 2018 to July 31, 2019 from real estate data service provider CoreLogic. To afford a $2.2 million home, an income of 227% of AMI is estimated to be needed. Estimates assume a down payment of 30% based on the median down payment for home purchases with a mortgage in Menlo Park estimated from CoreLogic data, 35% of income spent on housing, and a mortgage interest rate of 3.5% based on a 30-year fixed mortgage rates as of August 2019 from Freddie Mac Primary Mortgage Market Survey.

applicant's proposal utilizes a provision of the City's BMR housing program guidelines that allows flexibility in the affordability mix of BMR units provided the mix is roughly equivalent to providing all BMR units at Low Income.

Net Impact on Housing Availability by Income Level

The estimated net impacts on housing availability by income category are presented in Tables 1-3 and 1-4, for Scenario 1 and 2, respectively.

- In Scenario 1, with Low Income BMR units, findings represent the net result of: (1) addition of 14 Low Income BMR units and 91 market rate units to the housing supply, (2) 28 units of increased housing availability across a range of income levels from removal of existing on-site jobs and related worker housing demand, and (3) a 20-unit decrease in housing availability due to new housing demand by workers in services to new residents. The net result is a 113-unit increase in available housing comprised of 12 Low, three Moderate Income, 96 Above Moderate, and eight Over 150% AMI units, partially offset by a six-unit decrease in housing availability for Extremely Low and Very Low Income. The calculations are shown in Table 1-3.

Table 1-3. Scenario 1, Net Impacts on Housing Availability by Income Category

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
1. Increase in available housing from construction of new units	-	-	14	-	91	-	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	-	1	5	6	6	10	28
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	(2)	(5)	(7)	(3)	(1)	(2)	(20)
Net Increase in Housing Availability (1)	**(2)**	**(4)**	**12**	**3**	**96**	**8**	**113**

(1) Negative figures represent an increase in housing demand that is not offset by added housing supply.

- In Scenario 2, with Very Low, Low and Moderate Income BMR units, the 113-unit net increase in available housing is comprised of three Low, eight Moderate, 96 Above Moderate Income, and eight Over 150% AMI units, partially offset by a two-unit decrease in housing availability for Extremely Low Income. Calculations for Scenario 2 are shown in Table 1-4 and are the same as Scenario 1 except that the applicant proposed BMR unit mix is used.

Table 1-4. Scenario 2, Net Impacts on Housing Availability by Income Category							
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
1. Increase in available housing from construction of new units	-	4	5	5	91	0	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	-	1	5	6	6	10	28
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	(2)	(5)	(7)	(3)	(1)	(2)	(20)
Net Increase in Housing Availability (1)	**(2)**	**-**	**3**	**8**	**96**	**8**	**113**

(1) Negative figures represent an increase in housing demand that is not offset by added housing supply.

Findings represent the total estimated housing availability impacts throughout the region and include impacts both within Menlo Park as well as in other jurisdictions where workers who hold on-site or off-site jobs live. See Section 1.4 for an estimate of impacts within Menlo Park.

Following is a brief description of the approach used for each component of the analysis.

(1) *Residential units* – the affordability level of new residential units is estimated based on the Below Market Rate (BMR) affordable housing required under the City's BMR Program guidelines and, as described above, includes two scenarios regarding the affordability mix of the BMR units. For the market rate units, affordability level is estimated based on estimated market rate rents for the new units and the household income necessary to afford the market rate rents. See Section 3 for additional description.

(2) *Increase in available housing from removal of on-site jobs* – The net decrease in worker housing demand from removal of on-site jobs starts with an estimate of the net decrease in employment. Employment levels in the existing building were provided by the Project applicant. Jobs added by the proposed Project in the retail space and in on-site property management were estimated by KMA and are reflected in determining the net reduction in employment. Ratios derived from the U.S. Census are used to translate the net decrease in employment to a net decrease in worker housing demand. The net decrease in worker housing demand by income category is identified by comparing estimated household incomes of workers to household income limits for the six affordability categories addressed in the analysis. Household income estimates use publicly available data on worker compensations and reflect the type of tenant that occupies the existing building, a venture capital and technology incubation business. See Section 4 for additional description.

(3) *Decrease in available housing due to added off-site jobs in services to new residents* – The analysis estimates the income of households renting the new residential units, their demand for goods and services such as groceries, restaurants, and healthcare, the off-site jobs created by the additional demand, and the housing needs by income level of workers who will hold these new jobs. See Section 5 for additional description.

1.4 Menlo Park Share of Net Impact on Housing Availability

This section provides an estimate of the share of the proposed Project's impacts on housing availability that occur in the City of Menlo Park. Findings of the prior section represent total estimated impacts regardless of the jurisdiction in which impacts occur. The portion of total housing availability impacts that occur in Menlo Park are estimated using the following approach:

(1) All 105 residential units added by the proposed Project are in the City of Menlo Park; therefore, all 105 units are identified as additional housing supply in Menlo Park.

(2) None of the workers in the existing office building live in Menlo Park based on data provided by the Project applicant; therefore, removal of existing office jobs is not estimated to reduce housing demand within the City of Menlo Park at all.

(3) One of the 20 total units of added regional housing demand generated from new off-site jobs is estimated to be within Menlo Park, assuming the existing 6.2% share of Menlo Park workers who live in the City (commute share) is maintained. With an alternative assumption of an increased 20% commute share per the City's 2000 Nexus Study, which reflects a goal of housing a greater percentage of workers locally, four of the 20-units of regional housing demand for off-site workers is estimated to be within Menlo Park.

The above approach results in a net increase of 104 units of housing availability in Menlo Park, assuming the current 6.2% commute share is maintained (104 units = 105 new units minus one unit of new off-site employee housing demand in Menlo park). With an alternative assumption of an increased commute share goal of 20%, the net increase in housing availability in Menlo Park is estimated at 101 units (101 units = 105 new units minus four units of new off-site employee housing demand in Menlo park).

Table 1-5 identifies the breakout of the net impact on housing availability in Menlo Park by income category for the two scenarios regarding provision of BMR units and two commute share alternatives.

Table 1-5. Estimated Menlo Park Share of Net Impacts on Housing Availability							
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Scenario 1 – Low Income BMR Units							
Current Commute Share (6.2%)	0	0	13	0	91	0	104
Increased Commute Share (20%)	(1)	(1)	13	(1)	91	0	101
Scenario 2 – Very Low, Low and Moderate Income BMR Units							
Current Commute Share (6.2%)	-	4	4	5	91	-	104
Increased Commute Share (20%)	(1)	3	4	4	91	-	101

Scenario 1 - Low Income BMR Units

In Scenario 1, with Low Income BMR units and assuming the current commute share, the estimated 104-unit net increase in housing availability in Menlo Park consists of 13 Low and 91 Above Moderate Income units. One of the 14 new Low Income units added to the housing supply by the proposed Project is offset by the estimated one unit of added worker housing demand in Menlo Park. This one unit of added worker housing demand is estimated to be for a Low Income unit as this is the income category representing the largest share of off-site worker housing demand per Table 1-3.

With an alternative goal-based 20% commute share assumption, housing availability in the Low and Above Moderate categories is the same as estimated with the current commute share but is partially offset by a one-unit net decrease in housing availability for Extremely Low, Very Low and Moderate Income. The net decrease in housing availability in the Extremely Low, Very Low and Moderate Income categories is driven by the greater share of off-site workers estimated to live in Menlo Park with a 20% commute share assumption, which adds to housing demand in these income categories.

Scenario 2 – Very Low, Low and Moderate Income BMR Units (Applicant Proposal)

In Scenario 2, with Very Low, Low and Moderate Income BMR units, the estimated 104-unit net increase in housing availability in Menlo Park consists of four Very Low, four Low, five Moderate and 91 Above Moderate Income units, assuming the current commute share.

With an alternative goal-based 20% commute share, the 101-unit net increase in housing availability in Menlo Park consists of three Very Low, four Low, four Moderate and 91 Above Moderate Income units, partially offset by a one-unit decrease in housing availability in the Extremely Low Income category.

See Section 6.2 for the supporting analysis.

1.5 Displacement Analysis

Displacement occurs when housing or neighborhood conditions force existing residents to move or households feel like their move is involuntary. Displacement can be caused by a range of physical, economic and social factors including but not limited to foreclosure, condominium conversion, building deterioration or condemnation, increased taxes, natural disasters, eminent domain, and increases in housing costs[6, 7, 8]. The HNA is focused on economic drivers of displacement, specifically the potential for the proposed Project to affect the local housing market and contribute to increasing housing costs.

While displacement is not an impact for the purposes of the California Environmental Quality Act (CEQA), displacement has become an increasing regional concern in the Bay Area. A map produced by the Urban Displacement Project, a research and action initiative of UC Berkeley that aims to understand and describe the nature of gentrification and displacement, identifies numerous communities as undergoing displacement or at risk of displacement that extend from San Francisco down the Peninsula to many neighborhoods in San Jose and the East Bay.

The displacement analysis addresses the potential for the proposed Project to contribute to displacement of existing residents in two nearby communities, the City of East Palo Alto (East Palo Alto) and Menlo Park's Belle Haven Neighborhood (Belle Haven). These communities have risk factors for displacement based on their relatively lower-income existing population that includes a high percentage of households who spend 35% or more of their income on housing. They are identified by the Urban Displacement Project[9] as experiencing on-going gentrification and/or displacement or being at risk of displacement. Another recent study of baseline housing conditions in the Belle Haven neighborhood, City of East Palo Alto, and North Fair Oaks neighborhood, prepared by the UC Berkeley Center of Community Innovation and its Y-PLAN initiative, identified similar conclusions[10].

Because the proposed Project adds to the supply of market rate and affordable housing and reduces the level of demand for housing by eliminating existing employment uses, the proposed Project is not anticipated to contribute to displacement in East Palo Alto or Belle Haven. Increasing the availability of market rate and affordable housing will tend to moderate or counteract displacement pressures to some degree by relieving market pressures on existing housing stock.

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[6] Zuk, M. et. al. 2017. Gentrification, Displacement, and the Role of Public Investment. Journal of Planning Literature. Journal of Planning Literature 1-14.

[7] Center of Community Innovation (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

[8] Bradshaw, K. (2019). Uneven Ground: How unequal land use harms communities in southern San Mateo County. Palo Alto Online. https://paloaltoonline.atavist.com/uneven-ground.

[9] Zuk, M., & Chapple, K. (2019). Urban Displacement Project. http://www.urbandisplacement.org/

[10] Center of Community Innovation (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

2.0 INTRODUCTION

This Housing Needs Assessment (HNA) provides an analysis of the proposed Project's impact on housing supply and housing demand and evaluates its potential to contribute to displacement of existing residents of the City of East Palo Alto (East Palo Alto) and the Belle Haven neighborhood of Menlo Park (Belle Haven), two proximate communities identified as having risk factors for displacement. The report has been prepared by Keyser Marston Associates (KMA) for the City of Menlo Park under a subcontract agreement with LSA Associates, prime consultant responsible for preparation of the Environmental Impact Report (EIR).

In 2016, the City updated its General Plan, specifically the land use and circulation elements, and its Zoning Ordinance (commonly referred to as ConnectMenlo). The City completed and certified a program level EIR for ConnectMenlo, which determined that there would be a less than significant impact on population and housing, except cumulative impacts projected to be reduced to less than significant following an update of ABAG regional forecasts. However, pursuant to the terms of the 2017 City of East Palo Alto v. City of Menlo Park Settlement Agreement, which settled the lawsuit regarding the ConnectMenlo EIR, preparation of this HNA is required. This HNA has been prepared consistent with the terms of that settlement agreement.

The following housing-related topics are addressed in this HNA:

1) Net impact on housing availability from the proposed Project, by income level, based on the combined effects of:
   a. Added residential units;
   b. Reduced worker housing need with removal of the existing office building; and
   c. Added housing needs for workers in off-site retail and other services to residents of the new residential units.

2) Share of housing availability impacts estimated to occur within the City of Menlo Park; and

3) Potential for the proposed Project to contribute to rising housing costs and displacement of existing residents in East Palo Alto and Belle Haven.

These housing-related impacts are not required to be analyzed under the California Environmental Quality Act (CEQA) since economic or social changes are not considered significant effects on the environment. Nevertheless, this information is required by the settlement agreement and may be of interest to decision-makers and/or the public in evaluating the merits of the proposed Project.

2.1 Project Description

SP Menlo LLC (Project Sponsor) is proposing construction of a new 105-unit multi-family apartment building with approximately 712 square feet of ground floor retail. The Project site is located on an approximately 0.92-acre site at 111 Independence Drive in Menlo Park. The proposed Project replaces an approximately 15,000 square foot existing office building on the Project site. Table 2-1 provides a summary of the proposed Project.

Table 2-1. Project Summary

	Residential Units	Building Area (1)
Existing Office Building *[To Be Demolished]*		15,000 SF
New Residential Building		
Residential	105 Units	94,001 SF
Ground Floor Retail		712 SF
		94,713 SF
Net Change with Project	105 Units	79,713 SF

(1) Parking structure is not included in building area totals.
Source: 111 Independence Drive Project Initial Study and applicant

2.2 Income Definitions

The income levels or tiers used in the analysis are expressed in relation to local Area Median Income (AMI). For example, Extremely Low Income is defined as households earning up to 30% of AMI. The AMI for each county or group of counties is issued annually by the U.S. Department of Housing and Urban Development (HUD), and released by the California Department of Housing and Community Development. Most housing programs and policies in California and its jurisdictions utilize these income definitions. The City of Menlo Park is covered by and utilizes the AMI information provided for San Mateo County.

Per HCD and statewide programs, the analysis includes households earning less than 120% AMI. In addition, an Above Moderate Income tier covering 120% to 150% AMI is presented in this analysis because this income tier also faces affordable housing challenges in Menlo Park and the greater Bay Area. In fact, due to the high cost of housing in Menlo Park, housing affordability challenges even extend to households earning more than 150% of AMI[11], especially

[11] An income of approximately 227% of AMI is estimated to be needed to afford the median priced in Menlo Park. The median priced home in Menlo Park is $2.2 million based on home sales from August 1, 2018 to July 31, 2019 from real estate data service provider CoreLogic. To afford a $2.2 million home, an income of 227% of AMI is estimated to be needed. Estimates assume a down payment of 30% based on the median down payment for home purchases with a mortgage in Menlo Park estimated from CoreLogic sales data for Menlo Park, 35% of income spent on

in the for-sale housing market. As with HNAs prepared for prior projects in Menlo Park, the Above Moderate Income tier was included to provide decision makers more information on the housing needs of a broad spectrum of housing affordability levels.

In summary, the income tiers used in the analysis are:

- Extremely Low Income – households up to 30% of AMI;
- Very Low Income – households over 30% up to 50% of AMI;
- Low Income – households over 50% up to 80% of AMI;
- Moderate Income – households over 80% up to 120% of AMI;
- Above Moderate Income – households over 120% up to 150% of AMI; and
- Over 150% of AMI – households above 150% of AMI.

The 2019 income limits by household size are presented below in Table 2-2. The 2019 income limits were the most current available at the time the analysis was prepared.

Table 2-2. 2019 Household Income Limits

		Income Limit by Household Size					
Income Category	**Percent of AMI**	1-person	2-person	3-person	4-person	5-person	6-person
Extremely Low	30% of AMI	$33,850	$38,700	$43,550	$48,350	$52,250	$56,100
Very Low Income	50% of AMI	$56,450	$64,500	$72,550	$80,600	$87,050	$93,500
Low Income	80% of AMI	$90,450	$103,350	$116,250	$129,150	$139,500	$149,850
Moderate Income	120% of AMI	$114,900	$131,300	$147,750	$164,150	$177,300	$190,400
Above Moderate	150% of AMI	$143,650	$164,200	$184,650	$205,200	$221,650	$238,050
Median Income	100% of AMI	$95,750	$109,450	$123,100	$136,800	$147,750	$158,700

AMI = Area Median Income, San Mateo County 2019
Source: California Department of Housing and Community Development

2.3 Report Organization

This report is organized into seven sections and one appendix:

- Section 1.0 provides an Executive Summary;
- Section 2.0 provides an Introduction;
- Section 3.0 identifies the income categories applicable to the new residential units;
- Section 4.0 provides an analysis of reduced worker housing need from removal of on-site jobs;
- Section 5.0 estimates housing demand by income for off-site workers in services to new residents such as restaurants, retail and health care;

housing, and a mortgage interest rate of 3.5% based on a 30-year fixed mortgage rates as of August 2019 from Freddie Mac Primary Mortgage Market Survey.

- Section 6.0 combines the findings of Sections 3, 4 and 5 to estimate the net impact on housing availability and the share of net impacts occurring within the City of Menlo Park;
- Section 7.0 provides a discussion of the potential for the proposed Project to contribute to displacement of existing residents in East Palo Alto and Belle Haven; and
- Appendix A provides supporting tables on worker occupation and incomes.

2.4 Data Sources and Qualifications

The analysis in this report has been prepared using the best and most recent data available at the time of preparation. Local data was used wherever possible. Other sources, such as the U.S. Census Bureau, U.S. Bureau of Labor Statistics, and the California Employment Development Department were used extensively. While KMA believes all sources utilized are sufficiently accurate for the purposes of the analysis, KMA cannot guarantee their accuracy. Keyser Marston Associates, Inc. assumes no liability for information from these or other sources.

3.0 HOUSING UNITS ADDED BY THE PROJECT BY INCOME CATEGORY

This section estimates how the 105 new rental housing units added by the proposed Project will be distributed by income or affordability category.

3.1 Below Market Rate Housing Units Required

The proposed Project would include 14 Below Market Rate (BMR) affordable units. The City's Below Market Rate Housing Program codified in Chapter 16.96 of the City's Zoning Code requires residential development projects with twenty or more units to provide 15% BMR affordable units. For each BMR unit provided, a density bonus of one market rate unit is allowed. The 14 required BMR units is determined based on applying the 15% requirement to the 92-unit "base project" before consideration of additional units permitted under density bonus provisions of the City's BMR Program (15% X 92 = 13.8 BMR units required, which rounds to 14 BMR units). Therefore, within the 92-unit base project, there are 78 market rate units and 14 BMR units. The density bonus provisions of the BMR ordinance allow one additional market rate unit for each required BMR unit, resulting in up to 14 bonus market rate units allowed, of which the applicant has proposed 13 bonus market rate units. Therefore, in total, there are 91 market rate units (=78 base project + 13 bonus market rate) and 14 BMR units for a total of 105 units in the proposed Project. Table 3-1 provides a summary.

Table 3-1. Market Rate and BMR Units

	Market Rate Units	BMR Units	Total Units
Zoning Ordinance	78	14 (15% of base project)	92
BMR Density Bonus	13 proposed (of 14 allowed - one for each BMR unit)	0	13
Total	91	14	105

BMR rental units are required by the City's BMR ordinance and guidelines to be affordable to Low Income households. Alternative affordability levels are permitted under the City's BMR guidelines if determined to be roughly equivalent to providing all BMR units at Low Income. For purposes of this report, two scenarios are provided:

- **Scenario 1** – assumes BMR units are affordable to Low Income households; and

- **Scenario 2** – assumes a mix of Very Low, Low and Moderate Income BMR units, which reflects the Project applicant's proposal. The City's BMR housing program allows flexibility in the affordability mix if it is roughly equivalent to providing all of the units at Low Income. The Project applicant is utilizing this flexibility to propose a BMR unit mix that consists of four Very Low, five Low, and five Moderate Income BMR units.

3.2 Affordability Level of Market Rate Units

The proposed Project will include 91 market rate rental units. KMA estimates that market rate units will be affordable to Above Moderate Income Households based on the estimated market rate rents for the units. Calculations are shown in Table 3-2. Market rate units will not be deed restricted; therefore, the affordability level could change over time as rental market conditions and the income criteria used to determine affordability level change. In addition, occupancy of market rate units is not restricted to households within the Above Moderate Income category.

Table 3-2. Estimated Affordability Level Applicable to Market Rate Units

	Studio	1-BR	2-BR
Estimated Market Rate Monthly Rent (1)	$2,900	$3,300	$4,250
Utilities (2)	$102	$112	$148
Total Monthly Housing Cost (Rent + Utilities)	$3,002	$3,412	$4,398
Annual Housing Cost	$36,024	$40,944	$52,776
Percent of Income for Housing (3)	30%	30%	30%
Annual Household Income Required	$120,080	$136,480	$175,920
2019 Median Income (4)	$95,750	$109,450	$123,100
Household Income Required as % of AMI	125%	125%	143%
Affordability Level of Market Units	Above Moderate	Above Moderate	Above Moderate

(1) KMA estimate based on market rents for three newer apartment properties in Menlo Park.

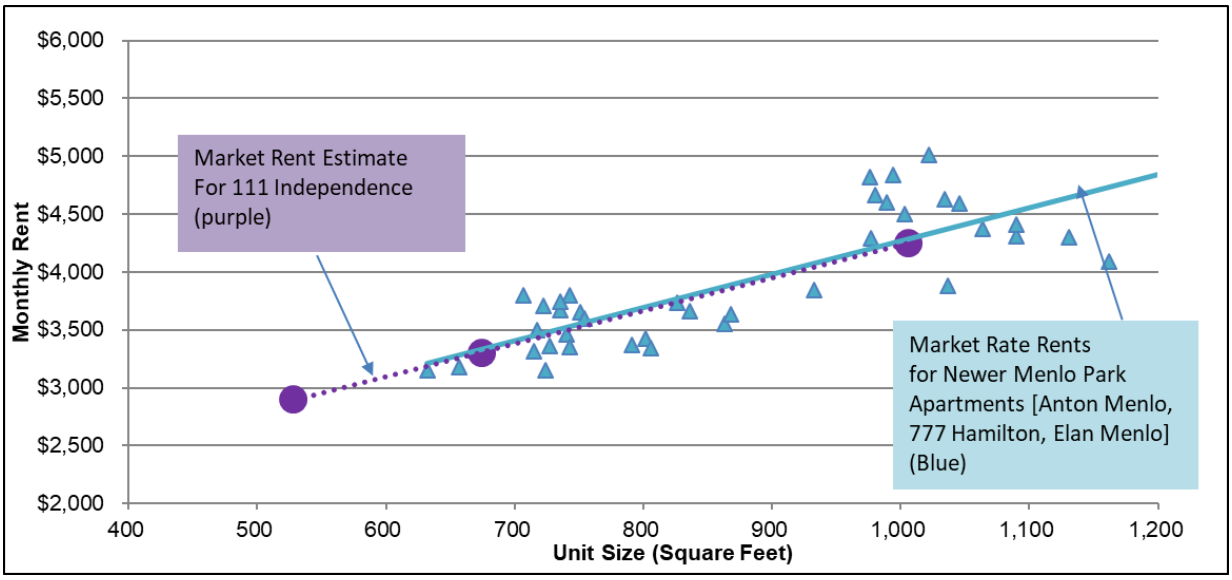
(2) Tenant paid utilities estimated based on 2019 County Housing Authority utility allowance schedule.

(3) Per California Health and Safety Code Section 50053.

(4) HCD Income Limits for applicable household size for 2019.

Market rents were estimated by KMA based on three newer rental properties in Menlo Park located on the north side of U.S. 101, the Anton Menlo at 3639 Haven (built 2017), the Elan Menlo at 3645 Haven (built 2017) and 777 Hamilton (built 2016). Average rental rates for the comparison properties by bedroom size are shown in Table 3-3 and Chart 1. Each data point in Chart 1 represents the average effective market rate rent for units of a specific square footage size. Separate trend lines are fit to actual rents for the comparison properties (blue) and estimated rents for the proposed Project (purple). Based on the market data and the proposed unit sizes for the proposed Project, studios are estimated to rent for approximately $2,900 per month, one-bedrooms for $3,300 per month, and two bedrooms for $4,250 per month.

Chart 1 –Market Rate Rents for Newer Apartments and Estimated Rents for proposed Project



Source: CoStar and KMA

Table 3-3. Rents for Comparable Apartments and Estimate for Proposed Project

	Studios			1-Bedrooms			2-Bedrooms		
	Avg Size	Avg Rent	Avg Rent PSF	Avg Size	Avg Rent	Avg Rent PSF	Avg Size	Avg Rent	Avg Rent PSF
Estimate for Project	528	$2,900	$5.50	675	$3,300	$4.89	1,006	$4,250	$4.22
Comparable Apartments									
Menlo Park N. of U.S. 101									
Anton Menlo	632	$3,149	$4.98	757	$3,516	$4.65	1,096	$4,339	$3.96
777 Hamilton				741	$3,633	$4.90	1,055	$4,324	$4.10
Elan Menlo Park				747	$3,450	$4.62	1,017	$4,741	$4.66

Source: Effective rents per CoStar, Estimate for proposed Project per KMA.

3.3 New Residential Units by Income Level

Table 3-4 provides a summary of the income level applicable to the new residential units, combining the findings of Section 3.1 and 3.2. Scenario 1 includes 14 Low Income BMR units and 91 Above Moderate Income market rate units. Scenario 2 includes four Very Low, five Low and five Moderate Income BMR units and 91 Above Moderate Income market rate units.

Table 3-4. Estimated Affordability Level of New Residential Units								
	Scenario 1 Low Income BMR			Scenario 2 Mix of Very Low, Low and Moderate Income BMR				
	Low	Above Moderate	Total	Very Low	Low	Moderate	Above Moderate	Total
	BMR units	*Market Rate*		*BMR units*	*BMR units*	*BMR units*	*Market Rate*	
Studios	2	13	15	0	1	1	13	15
1-Bedrooms	11	68	79	4	3	4	68	79
2-Bedrooms	1	10	11	0	1	0	10	11
Total	14	91	105	4	5	5	91	105

(1) BMR units are allocated by bedroom size consistent with the applicant's BMR proposal.

Based on the unit mix of the proposed Project of 14% studios, 75% one-bedrooms and 11% two-bedrooms, the proposed Project is estimated to correspond to an average household size of approximately two persons[12]. This is less than the average household size for the City of 2.84 persons per household and 2.92 persons per household for the County as a whole per the 2013-2017 American Community Survey (ACS).

[12] Estimated based on the standard used by HCD of one person plus the number of bedrooms.

4.0 REDUCTION IN HOUSING NEED FROM REMOVAL OF ON-SITE JOBS

This section provides an analysis of the net reduction in worker housing need by income level from removal of existing on-site jobs on the Project site. The analysis begins by quantifying the net reduction in the number of on-site jobs and then proceeds through a series of steps to estimate how this net reduction in jobs translates into a net reduction in worker housing need by income level.

4.1 Methodology

The analysis estimates the net reduction in on-site jobs from removal of the existing office building and construction of the new residential units. The estimated number of on-site jobs removed is then translated into an estimated net reduction in housing demand based on relationships between jobs and housing demand derived from the U.S. Census. Finally, the income level associated with the housing demand is estimated using a combination of data sources including California Employment Development Department wage data, U.S. Bureau of Labor Statistics occupation data and U.S. Census data on households.

Following is a description of each step in the analysis.

Analysis Step 1 – Estimate of Added Employment

The proposed Project results in a net reduction of 54 on-site jobs as summarized in Table 4-1.

Demolition of the existing office space removes approximately 59 on-site jobs including 57 jobs with the existing office tenant and an estimated two jobs in building services like janitorial and maintenance. The number of jobs associated with the existing office tenant was provided by the project Applicant. The number of building services staff is estimated using staffing ratios derived from data reported by the International Facility Management Association (IFMA). Building services workers are evaluated separately because services are often provided by separate contractors and so are not reflected in employment figures for building tenants.

The proposed Project is estimated to add five on-site jobs within the new residential building. Estimated jobs include on-site property management and maintenance as well as jobs in the ground floor retail/café space. Three jobs in residential property management and maintenance are estimated based on a ratio of 35 apartment units per employee derived from the National Apartment Association 2018 Survey of Operating Income and Expenses. The retail/café is estimated to add two additional workers for a total of five new on-site workers.

Table 4-1. Estimated Net Reduction in On-Site Employment				
	Building Area or Units	Basis for On-Site Employment Estimate	Estimated Net Change in On-Site Employment [1]	
Reduction in Jobs with Removal of Office Building				
Office Tenant		applicant data	(57)	Employees
Building Services		1 per 10,000 SF[1]	(2)	Employees
Subtotal Existing	15,000 SF		(59)	Employees
Added Jobs in New Residential Building				
Residential	105 Units	1 per 35 units [2]	3	Employees
Retail / Café	712 SF	1 per 350 SF [3]	2	Employees
			5	Employees
Net Reduction in On-Site Employment			**(54)**	**Employees**

[1] Building services staff, which includes maintenance, janitorial, and security not expected to be directly employed by the tenant, was estimated by KMA based on a ratio of 1 employee per 10,000 square feet derived from International Facility Management Association (IFMA), Operations and Maintenance Benchmarks Research Report #33.

[2] Based on National Apartment Association 2018 Survey of Operating Income and Expenses in Rental Apartment Communities, average number of units per employee for projects that are 100 to 199 units in size.

[3] KMA estimate.

The analysis assumes removal of employment space results in a decrease in employment. Although existing office tenants at 111 Independence may relocate to other office space nearby, in doing so they would occupy space that would otherwise be leased to a different tenant. Therefore, even if existing tenants relocate nearby, demolition of existing office space still has the effect of reducing employment in the City of Menlo Park.

Step 2 – Adjustment from Employees to Employee Households

Step 2 converts the number of employees to the number of employee households. This step recognizes that there is, on average, more than one worker per household, and thus the number of housing units in demand must be reduced. The workers per worker household ratio eliminates from the equation all non-working households, such as households comprised of retired persons or students. The calculation is shown in Table 4-2.

KMA derived the worker per worker household figure from ACS data for 2013 to 2017. The ACS data provide estimates of the total number of workers in San Mateo County, and the total number of households with at least one working household member. The ratio of the two figures for San Mateo County is 1.88 workers per worker household. The San Mateo County figure is used in the analysis because workers will be more similar to the County as a whole than the smaller City of Menlo Park profile, which has an average of 1.69 workers per worker household. The workers per worker household ratio is used to translate the net decrease in on-site employment to a net decrease in employee households as shown in Table 4-2. The net

decrease in employment of 54 jobs is divided by the 1.88 workers per worker household ratio to estimate the net decrease of 28 employee households. The result indicates a net decrease in the demand for 28 housing units from removal of the 54 jobs.

Table 4-2. Estimated Net Change in On-Site Employee Households

	Existing (to be removed)		New		
	Office Tenant	Office Building Services	Residential Property Management	Retail / Café Space	Net Change
Employment	(57)	(2)	3	2	(54)
Employee Households (at 1.88 workers per household) (1)	(30)	(1)	2	1	(28)

(1) Derived from 2013-2017 U.S. Census American Community Survey data for San Mateo County

Step 3 – Occupational Distribution

Occupational distribution for employees is based on data from a national survey by the Bureau of Labor Statistics (BLS). Occupation refers to job description, such as management, sales clerk, cashier, etc. The survey provides the occupational distribution for various employment "industries." National statistics are used because local data are not generally available, and for many industries, national data are a good reflection of the occupational distribution that can be expected locally.

KMA selected two industry categories that reflect occupants of the existing office space including Jotter Ventures, an investor and incubator of "early-stage companies and technologies" and Apptimize, a company focused on improving user experience on mobile applications. The representative industry categories selected are NAICS codes 511200, which corresponds to software publishers, and NAICS Code 523000 for Securities and Other Financial Investments and Related Activities, a category that encompasses venture capital firms. Building and grounds cleaning and maintenance and protective service occupations were removed from the occupation profile of the office tenants because these workers are separately accounted for.

For building services workers, residential on-site property management and maintenance, and retail / café workers, KMA selected representative occupations from the BLS data as shown in Appendix A Tables 5, 6 and 7.

Table 4-3 provides a summary of worker occupations by major category. Appendix A, Tables 3 to 7 provide a further breakdown of worker occupations by Standard Occupational Classification (SOC) System codes.

Table 4-3. On-Site Employee Households - Occupation Categories								
	Existing Office to be Demolished				New Residential			
Occupation Category	Office Tenant	Building Services	Total Existing	% of Total	Property Mgmt	Retail / Café	Total New	% of Total
Management Occupations	(3.6)	0.0	(3.6)	11%	0.5	0.0	0.5	20%
Business and Financial	(6.1)	0.0	(6.1)	19%	0.0	0.0	0.0	0%
Computer and Mathematical	(11.2)	0.0	(11.2)	36%	0.0	0.0	0.0	0%
Architecture and Engineering	(0.2)	0.0	(0.2)	1%	0.0	0.0	0.0	0%
Life, Physical, and Social Science	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Community and Social Services	0.0	0.0	0.0	0%	0.0	0.0	0.0	0%
Legal	(0.2)	0.0	(0.2)	1%	0.0	0.0	0.0	0%
Education, Training, and Library	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Arts, Design, Entertainment,	(0.8)	0.0	(0.8)	2%	0.0	0.0	0.0	0%
Healthcare Practitioners	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Healthcare Support	0.0	0.0	0.0	0%	0.0	0.0	0.0	0%
Protective Service	0.0	0.0	0.0	0%	0.0	0.0	0.0	0%
Food Preparation and Serving	0.0	0.0	0.0	0%	0.0	1.1	1.1	40%
Building and Grounds	0.0	(0.8)	(0.8)	3%	0.5	0.0	0.5	20%
Personal Care and Service	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Sales and Related	(4.1)	0.0	(4.1)	13%	0.0	0.0	0.0	0%
Office and Administrative Support	(4.0)	0.0	(4.0)	13%	0.0	0.0	0.0	0%
Farming, Fishing, and Forestry	0.0	0.0	0.0	0%	0.0	0.0	0.0	0%
Construction and Extraction	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Installation, Maint., and Repair	0.0	(0.3)	(0.3)	1%	0.5	0.0	0.5	20%
Production	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Transportation & Material Moving	(0.0)	0.0	(0.0)	0%	0.0	0.0	0.0	0%
Totals	(30.39)	(1.07)	(31.46)	100%	1.60	1.07	2.67	100%

Notes: See Appendix A Tables 4, 5, 6, and 7 for more detailed breakdown of occupation categories.

Occupational distribution for Existing Office Tenants based on NAICS codes 511200: Software Publishers and NAICS Code 523000 - Securities and Other Financial Investments and Related Activities which are representative of the industry categories applicable to current and recent tenants in the existing office space. Occupational distribution for building services, residential property management and retail / cafe employees estimated by KMA as shown in Appendix A Tables 5, 6 and 7.

Step 4 – Estimate of Employee Wage and Salary Distribution

The employee wage and salary distribution is based on the occupational distribution from Step 3 in combination with recent San Mateo County wage and salary information for each occupation from the California Employment Development Department (EDD) for the first quarter of 2019. In addition to the average compensation levels, the analysis also utilizes EDD data regarding the percentile distribution of wages within individual occupation categories in estimating the distribution of worker compensation levels. The data on employee wages and salaries utilized in the analysis is presented in Appendix A Tables 4, 5, 6, and 7.

Step 5 – Household Size Distribution

In this step, the household size distribution of workers is estimated using U.S. Census 2013-2017 ACS data for San Mateo County. Data for the County is used since workers are more representative of the larger area in which workers live (the County) than the City of Menlo Park. In addition to the distribution in household sizes, the data also accounts for a range in the

number of workers in households of various sizes. Table 4-4 indicates the percentage distribution utilized in the analysis.

Table 4-4. Percent of Households by Size and No. of Workers

No. of Persons in Household	No. of Workers in Household	Percent of Total Households
1	1	15.8%
2	1	13.4%
	2	16.4%
3	1	7.2%
	2	10.0%
	3+	3.8%
4	1	4.6%
	2	7.7%
	3+	5.3%
5	1	2.0%
	2	3.3%
	3+	2.3%
6	1	2.1%
	2	3.6%
	3+	2.5%
Total		100.0%

Source: 2013-2017 American Community Survey data for San Mateo County.

Step 6 – Estimate of Households that meet HCD Size and Income Criteria

This step in the analysis calculates the number of employee households that fall into each income category for each size household. This calculation is based on the employee wage and salary distribution (Step 4), the worker household distribution (Step 5) and the 2019 HCD income limits for San Mateo County, as described above.

Household incomes are estimated based upon ratios between individual employee income and household income derived from U.S. Census data shown in Table 4-5. The ratios adjust employee incomes upward even for households with only one worker in consideration of non-wage/salary income sources such as child support, disability, social security, investment income and others.

Table 4-5. Ratio of Household Income to Individual Worker Income			
Individual Worker Income	One Worker Households	Two Worker Households	Three or More Workers
$25,000 to $50,000	1.26	2.61	3.07
$50,000 to $75,000	1.12	2.05	2.29
$75,000 to $100,000	1.07	1.85	1.93
$100,000 to $150,000	1.05	1.68	1.70
$150,000 to $200,000	1.04	1.53	1.53
$200,000 to $250,000	1.03	1.45	1.45
$250,000 to $300,000	1.03	1.33	1.38
$300,000 to $500,000	1.03	1.24	1.24
$500,000 and above	1.02	1.21	1.21

Source: KMA analysis of 2013 to 2017 American Community Survey PUMS data for San Francisco Bay Area.

Estimated household incomes are compared to HCD income criteria to determine the percentage that qualify within each income category. The comparison is made for each potential household size/number of workers combination. The result is multiplied by the percentage distribution of household sizes and number of workers per household from Step 5 to calculate the distribution of worker households by income.

Table 4-6 presents the estimated number of households in each income tier by worker occupation category. It represents the output of the analysis, after completing Step 4 (employee compensation levels), Step 5 (household size distribution of worker households), and Step 6 which uses this information to calculate the number of households that fall into each income category.

TABLE 4.6
EMPLOYEE HOUSEHOLDS BY OCCUPATION AND INCOME (STEPS 4, 5, AND 6)
111 INDEPENDENCE DRIVE PROJECT
HOUSING NEEDS ASSESSMENT
MENLO PARK, CA

	Existing Office Space							Building Services						
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Step 4, 5, & 6 - Employee Households within Major Occupation Categories[1]														
Management	-	(0.01)	(0.14)	(0.27)	(0.54)	(2.62)	(3.58)	-	-	-	-	-	-	-
Business and Financial Operations	(0.00)	(0.22)	(1.25)	(1.31)	(1.40)	(1.92)	(6.10)	-	-	-	-	-	-	-
Computer and Mathematical	-	(0.13)	(1.25)	(2.03)	(2.73)	(5.09)	(11.23)	-	-	-	-	-	-	-
Architecture and Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Life, Physical and Social Science	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community and Social Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Education Training and Library	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arts, Design, Entertainment, Sports, & Media	(0.00)	(0.06)	(0.22)	(0.20)	(0.18)	(0.10)	(0.76)	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Protective Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Preparation and Serving Related	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Building Grounds and Maintenance	-	-	-	-	-	-	-	(0.13)	(0.29)	(0.32)	(0.07)	-	-	(0.80)
Personal Care and Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales and Related	(0.05)	(0.55)	(1.26)	(0.87)	(0.74)	(0.66)	(4.14)	-	-	-	-	-	-	-
Office and Admin	(0.08)	(0.86)	(1.64)	(1.01)	(0.39)	(0.04)	(4.01)	-	-	-	-	-	-	-
Farm, Fishing, and Forestry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Installation Maintenance and Repair	-	-	-	-	-	-	-	(0.01)	(0.07)	(0.12)	(0.05)	(0.03)	(0.00)	(0.27)
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transportation and Material Moving	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households: Major Occupations	(0.13)	(1.83)	(5.77)	(5.69)	(5.98)	(10.43)	(29.82)	(0.13)	(0.35)	(0.44)	(0.11)	(0.03)	(0.00)	(1.07)
Households: all other occupations[2]	(0.00)	(0.04)	(0.11)	(0.11)	(0.11)	(0.20)	(0.57)	-	-	-	-	(0.00)	-	(0.00)
Total Households	**(0.13)**	**(1.86)**	**(5.88)**	**(5.80)**	**(6.09)**	**(10.63)**	**(30.39)**	**(0.13)**	**(0.35)**	**(0.44)**	**(0.11)**	**(0.03)**	**(0.00)**	**(1.07)**
Total Households - Rounded	-	(2.00)	(6.00)	(6.00)	(6.00)	(10.00)	(30.00)	-	-	(1.00)	-	-	-	(1.00)

Notes:

[1] See Appendix A Tables 3 to 7 for additional information on Major Occupation Categories.

[2] Represents occupation categories which have a minor amount of employment and for which detailed compensation analysis was not completed. These worker households are assumed to have a similar income distribution to other employees in the same industry. See Appendix A Tables 4 to 7 for information on major and detailed occupation categories identified for detailed compensation analysis.

TABLE 4.6
EMPLOYEE HOUSEHOLDS BY OCCUPATION AND INCOME (STEPS 4, 5, AND 6)
111 INDEPENDENCE DRIVE PROJECT
HOUSING NEEDS ASSESSMENT
MENLO PARK, CA

	Residential Property Management							Retail / Café						
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Step 4, 5, & 6 - Employee Households within Major Occupation Categories[1]														
Management	0.00	0.06	0.16	0.13	0.10	0.08	0.53	-	-	-	-	-	-	-
Business and Financial Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Computer and Mathematical	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Architecture and Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Life, Physical and Social Science	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Community and Social Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Education Training and Library	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arts, Design, Entertainment, Sports, & Media	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Healthcare Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Protective Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Preparation and Serving Related	-	-	-	-	-	-	-	0.17	0.36	0.42	0.12	-	-	1.07
Building Grounds and Maintenance	0.05	0.20	0.25	0.03	-	-	0.53	-	-	-	-	-	-	-
Personal Care and Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales and Related	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Office and Admin	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Farm, Fishing, and Forestry	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Installation Maintenance and Repair	0.01	0.13	0.24	0.09	0.06	0.00	0.53	-	-	-	-	-	-	-
Production	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transportation and Material Moving	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households: Major Occupations	0.06	0.40	0.65	0.25	0.16	0.08	1.60	0.17	0.36	0.42	0.12	-	-	1.07
Households: all other occupations[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Households	**0.06**	**0.40**	**0.65**	**0.25**	**0.16**	**0.08**	**1.60**	**0.17**	**0.36**	**0.42**	**0.12**	**-**	**-**	**1.07**
Total Households - Rounded	-	1.00	1.00	-	-	-	2.00	-	-	1.00	-	-	-	1.00

Notes:

(1) See Appendix A Tables 3 to 7 for additional information on Major Occupation Categories.

(2) Represents occupation categories which have a minor amount of employment and for which detailed compensation analysis was not completed. These worker households are assumed to have a similar income distribution to other employees in the same industry. See Appendix A Tables 4 to 7 for information on major and detailed occupation categories identified for detailed compensation analysis.

4.2 Summary by Income Level

Table 4-7 presents a summary of the net reduction in housing demand within commuting distance of Menlo Park by affordability level as a result of the net reduction in on-site jobs.

Table 4-7. Estimated Net Change in On-Site Employee Households by Income

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Remove Office Building							
Office Tenant	0	(2)	(6)	(6)	(6)	(10)	(30)
Building Services	0	0	(1)	0	0	0	(1)
Total Existing	0	(2)	(7)	(6)	(6)	(10)	(31)
New Residential Building							
Residential Property Management	0	1	1	0	0	0	2
Retail / Café	0	0	1	0	0	0	1
Total New	0	1	2	0	0	0	3
Net Change: On-site Worker Households	**0**	**(1)**	**(5)**	**(6)**	**(6)**	**(10)**	**(28)**

The net reduction in on-site employment is estimated to result in a net reduction in housing demand for 28 housing units. This 28-unit net reduction in housing demand consists of an estimated one Very Low Income unit, five Low Income units, six Moderate Income units, six Above Moderate Income units, and 10 Over 150% AMI units.

5.0 HOUSING DEMANDS OF OFF-SITE WORKERS IN SERVICES TO NEW RESIDENTS

The following section provides an analysis of the linkages between development of the new residential units on the Project site, jobs generated in off-site services such as retail and restaurants, and the housing needs of the workers who hold these off-site jobs. Off-site jobs addressed in this section are incorporated into the analysis consistent with the terms of the 2017 settlement agreement which requires, to the extent possible, consideration of multiplier effects.

The analysis of housing demands for off-site workers starts with the estimated rental rate for the new units and moves through a series of linkages from the estimated income of the household that rents the unit, the portion of income available for expenditures on goods and services, jobs associated with the purchases and delivery of those services, the income of the workers doing those jobs and, ultimately, the affordability level of the housing needed by the workers.

The number of jobs by industry that are generated from the household spending of residents living in the proposed Project is estimated using the IMPLAN model, a model widely used for the past 35 years to quantify the impacts of changes in a local economy. The number of jobs by industry is then used to estimate worker housing need by income level using the same approach as in Section 4.

5.1 Estimated Household Incomes of New Residents

The estimated household incomes of residents in the new residential units are drawn from the analysis provided in Section 3.2. For BMR units, household income is estimated based on the mid-point of the income range that would qualify for a BMR unit. Household income figures are then multiplied by the number of units to estimate the aggregate household income for all residents of the proposed Project as shown in Table 5-1. Aggregate household income is used to estimate household spending, the input to the IMPLAN model that is used to quantify the number of off-site jobs associated with household spending of new residents.

Table 5-1. Aggregate Household Income of New Residents

	Estimated Household Income (1)				Number of Units (2)				Aggregate Income
	Very Low	Low	Moderate	Market Rate	Very Low	Low	Moderate	Market Rate	
Studios	$45,150	$73,450	$102,675	$120,080	0	1	1	13	$1,737,000
1-Bedrooms	$51,600	$83,925	$117,325	$136,480	4	3	4	68	$10,208,000
2-Bedrooms	$58,050	$94,400	$132,000	$175,920	0	1	0	10	$1,854,000
Total					4	5	5	91	$13,799,000
Average Per Household									$131,419

(1) For market rate units, see Table 3-2. For BMR units, estimates are based on the mid-point of the applicable qualifying income range.

(2) Scenario 2 is utilized for purposes of the estimate of housing demand impacts. Section 5 findings are nearly identical under Scenario 1 and round to the same result.

Income Available for Expenditures

The input into the IMPLAN model used in this analysis is the net income available for expenditures. To arrive at income available for expenditures, gross income must be adjusted for Federal and State income taxes, contributions to Social Security and Medicare, savings, and payments on household debt. Per KMA correspondence with the producers of the IMPLAN model (IMPLAN Group LLC), other taxes including sales tax and property tax are handled internally within the model as part of the analysis of expenditures. Payroll deduction for medical benefits and pre-tax medical expenditures are also handled internally within the model. Table 5-2 shows the calculation of the percentage of household income available for expenditures.

Table 5-2. Percent of Income Available for Expenditures (1)	
Gross Income	100%
Less:	
Federal Income Taxes (2)	13.3%
State Income Taxes (3)	5.0%
FICA Tax Rate (4)	7.65%
Savings & other deductions (5)	8%
Subtotal deductions	34%
Percent of Income Available for Expenditures (6)	***66%***

(1) Calculated as gross income after deduction of taxes and savings. Income available for expenditures is the input to the IMPLAN model which is used to estimate the resulting employment impacts. Housing costs are not deducted as part of this adjustment step because they are addressed separately as expenditures within the IMPLAN model.

(2) Reflects average tax rates (as opposed to marginal) based on U.S. Internal Revenue Services, Tax Statistics, Tables 1.2 and 2.1 for 2016.Tax rates reflect averages for applicable income range and assumes the standard deduction.

(3) Average tax rate estimated by KMA based on marginal rates per the California Franchise Tax Board and ratios of taxable income to gross income estimated based on U.S. Internal Revenue Service data.

(4) For Social Security and Medicare.

(5) Household savings including retirement accounts like 401k / IRA and other deductions such as interest costs on credit cards or auto loans, necessary to determine the amount of income available for expenditures. The 8% rate used in the analysis is based on a 20-year average computed from U.S. Bureau of Economic Analysis data, specifically the National Income and Product Accounts, Table 2.1 "Personal Income and Its Disposition."

(6) Deductions from gross income to arrive at the income available for expenditures are consistent with the way the IMPLAN model and National Income and Product Accounts (NIPA) defines income available for personal consumption expenditures. Income taxes, contributions to Social Security and Medicare, and savings are deducted; however, property taxes and sales taxes are not. Housing costs are not deducted as part of the adjustment because they are addressed separately as expenditures within the IMPLAN model.

Income available for expenditures is estimated at approximately 66% of gross income. Federal tax rates are estimated at 13.3% of gross income based upon Internal Revenue Service data. State taxes are estimated to average 5% of gross income based on tax rates per the California Franchise Tax Board. The employee share of FICA payroll taxes for Social Security and Medicare is 7.65% of gross income. A ceiling of $137,700 per employee applies to the 6.2% Social Security portion of this tax rate.

Savings and repayment of household debt represent another necessary adjustment to gross income. Savings includes various IRA and 401 K type programs as well as non-retirement household savings and investments. Debt repayment includes auto loans, credit cards, and all other non-mortgage debt. Savings and repayment of debt are estimated to represent a combined 8% of gross income based on the 20-year average derived from United States Bureau of Economic Analysis data.

The percentage of income available for expenditure for input into the IMPLAN model is prior to deducting housing costs. The reason is for consistency with the IMPLAN model which defines housing costs as expenditures. The IMPLAN model addresses the fact that expenditures on housing do not generate employment to the degree other expenditures such as retail or restaurants do, but there is some maintenance and property management employment generated.

After deducting income taxes, Social Security, Medicare, savings, and repayment of debt, the estimated income available for expenditures is 66% of gross household income.

Another adjustment made to spending is to account for standard operational vacancy in rental units of 5%, a level of vacancy considered average for rental units in a healthy market.

Table 5-3 presents the estimate of household income available for expenditures in the local economy after adjustments to income available for expenditures and vacancy:

Table 5-3. Income Available for Expenditures

Aggregate Annual Household Income, New Residents	$13,799,000
Percent Available for Expenditure (Table 5-2)	66%
Adjustment for 5% vacancy	95%
Aggregate Household Income Available	$8,652,000

The estimated household income available for expenditure associated with the 105 new residential units is the input into the IMPLAN model.

5.2 The IMPLAN Model

Consumer spending by residents of new housing units will create jobs, particularly in sectors such as restaurants, health care, and retail, which are closely connected to the expenditures of residents. The widely used economic analysis tool, IMPLAN (IMpact Analysis for PLANning), was used to quantify these new jobs by industry sector.

5.2.1 IMPLAN Model Description

The IMPLAN model is an economic analysis software package now commercially available through the IMPLAN Group, LLC. IMPLAN was originally developed by the U.S. Forest Service, the Federal Emergency Management Agency, and the U.S. Department of the Interior Bureau of Land Management and has been in use since 1979 and refined over time. It has become a widely used tool for analyzing economic impacts for a broad range of applications from major construction projects to natural resource programs.

IMPLAN is based on an input-output accounting of commodity flows within an economy from producers to intermediate and final consumers. The model establishes a matrix of supply chain relationships between industries and also between households and the producers of household goods and services. Assumptions about the portion of inputs or supplies for a given industry likely to be met by local suppliers, and the portion supplied from outside the region or study area are derived internally within the model using data on the industrial structure of the region.

The output or result of the model is generated by tracking changes in purchases for final use (final demand) as they filter through the supply chain. Industries that produce goods and services for final demand or consumption must purchase inputs from other producers, which in turn, purchase goods and services. The model tracks these relationships through the economy to the point where leakages from the region stop the cycle. This allows the user to identify how a change in demand for one industry will affect a list of over 500 other industry sectors. The projected response of an economy to a change in final demand can be viewed in terms of economic output, employment, or income.

Data sets are available for each county and state, so the model can be tailored to the specific economic conditions of the region being analyzed. This analysis utilizes the data set for San Mateo County. As will be discussed, much of the employment impact is in local-serving sectors, such as retail, eating and drinking establishments, and medical services. It is likely that many off-site employment impacts will occur in Menlo Park and other nearby jurisdictions; however, employment impacts will also extend throughout the county and beyond based on where residents of the proposed Project will shop, dine, seek medical care and other services. Consistent with the approach taken in most residential affordable housing nexus analyses, the analysis includes job impacts throughout the county.

5.2.2 Application of the IMPLAN Model to Estimate Job Growth

The IMPLAN model was applied to link income to household expenditures to job growth. The estimated annual household spending of the residents of the 105 new housing units is the input to the IMPLAN model. The IMPLAN model then distributes spending among various types of goods and services (industry sectors) based on data from the Consumer Expenditure Survey and the Bureau of Economic Analysis Benchmark input-output study, to estimate the number of off-site jobs.

Job creation, driven by increased demand for products and services, was projected for each of the industries that will serve the new households. A total of 37.5 off-site jobs are estimated to be generated by spending of the residents as summarized in Table 5-4. Estimates in Table 5-4 exclude on-site jobs in the café and in property management and maintenance of the residential units which are already considered as part of the Section 4 analysis.

Table 5-4. Jobs Generated from Household Spending of 105 Residential Units

Annual Household Expenditures	$8,652,000
Estimated Number of Off-site Jobs	37.5

As households added to the City by the proposed Project are new and these new households result in net new demand for products and services, the jobs associated with delivery of these products and services are also estimated to be net new jobs. While there may be an ability for existing retail, health care facilities, restaurants, schools and other services to absorb a share of new demand to some extent, existing establishments will still require additional employees in many cases. For example, individual health care providers are only able to see so many patients in a day. Waiters and cooks in restaurants can only serve so many customers. Grocery stores may need to add staff at check-out lanes in response to added demand, and so on. Employment in sectors that serve residents tends to expand with population. As indicated in Section 5.2.3, the ratio between employment in resident-serving sectors of the economy and the number of housing units is relatively consistent at the city and county geographic scales, indicating resident-serving jobs tend to be proportionate to the number of housing units and population.

Table 5-5 provides a detailed breakdown of the employment by industry sorted by projected employment. The Consumer Expenditure Survey published by the Bureau of Labor Statistics tracks expenditure patterns by income level. IMPLAN utilizes this data to reflect the pattern by income bracket. Estimated employment is shown for each IMPLAN industry sector representing 1% or more of total employment. The jobs that are generated are heavily retail jobs, jobs in restaurants and other eating establishments, and in services that are provided locally such as health care.

Table 5-5. Jobs Generated by Industry from Household Spending [IMPLAN Output]		
Industry Category	**Number of Jobs**	**Percent**
Full-service restaurants	2.6	7%
Limited-service restaurants	2.0	5%
Subtotal Restaurant	4.7	12%
Retail - Food and beverage stores	1.3	4%
Retail - General merchandise stores	0.9	2%
Personal care services	1.2	3%
Retail - Health and personal care stores	0.4	1%
Retail - Miscellaneous store retailers	0.5	1%
Retail - Building material and garden	0.5	1%
Other personal services	1.0	3%
Retail - Clothing and accessories	0.7	2%
Retail - Motor vehicle and parts dealers	0.5	1%
Retail - Nonstore retailers	0.6	2%
Subtotal Retail and Service	7.7	21%
Hospitals	1.4	4%
Nursing care facilities	0.8	2%
Home health care services	0.8	2%
Offices of physicians	1.0	3%
Offices of dentists	0.7	2%
Offices of other health practitioners	0.7	2%
Subtotal Healthcare	5.4	14%
Other educational services	0.6	2%
Elementary and secondary schools	0.5	1%
Subtotal Education	1.1	3%
Individual and family services	1.6	4%
Other financial investment activities	1.1	3%
Wholesale trade	1.0	3%
Religious organizations	1.0	3%
Automotive repair and maintenance	0.9	2%
Child day care services	0.6	2%
Services to private households	0.5	1%
Outpatient care centers	0.5	1%
Funds, trusts, and other financial vehicles	0.5	1%
All Other	11.0	29%
Total Number of Jobs Generated	**37.5**	**100%**

(1) Estimated employment generated by household expenditures of Project residents for Industries representing more than 1% of total employment. Employment estimates are based on the IMPLAN Group's economic model, IMPLAN, for San Mateo County (uses 2017 IMPLAN data set, the most recent available as of September 2019). Includes both full- and part-time jobs.

5.2.3 Cross-Check Based on Existing Number of Resident-Serving Jobs

As context for the estimated number of off-site jobs and a secondary cross-check for reasonableness, Table 5-6 provides comparisons to the existing ratio of resident-serving jobs in sectors such as health care, retail, food service and education and the number of residential units within Menlo Park and San Mateo County. In Menlo Park, there are 7,944 existing jobs in

resident-serving sectors and 12,260 residential units based on data from the U.S. Census. These figures translate to a ratio of approximately 65 resident-serving jobs for every 105 residential units[13]. The ratio for San Mateo County is similar at 60 resident-serving jobs for every 105 residential units. Based on existing relationships between resident-serving jobs and residential units for both the City and the County, estimates for the proposed Project appear reasonable.

Estimates for the proposed Project reflect a lower ratio of resident serving jobs to housing units than overall averages based on the characteristics of the proposed Project which consists of 89% studio and one-bedroom units. Households occupying studios and one-bedrooms will be smaller than the average household size for the City of 2.84 persons per household and 2.92 persons per household for the County per the 2013-2017 ACS. Smaller household sizes will correspond to lower demand for services compared to overall averages, particularly for services like health care and education that are driven by population. In addition, the proposed Project includes BMR units. Residents of BMR units will have lower household incomes and will drive a lower level of demand for services, particularly in sectors like restaurants that are driven more by discretionary spending. Finally, the City and County averages include employment within the identified sectors associated with serving the business and visitor population as well as residents, resulting in higher ratios than would be the case for jobs associated with residents alone. Therefore, the ratio between the estimated number of resident-serving jobs and the number of residential units for the proposed Project is appropriately less than citywide or countywide averages.

[13] Calculated as 7,944 jobs divided by 12,260 residential units and multiplied by 105 units. This 105-unit figure is selected for ready comparison to the proposed Project.

Table 5-6. Comparison to Existing City and County Relationships Between Number of Residential Units and Number of Jobs in Key Resident Serving Sectors.					
	Existing Jobs [1]		Jobs Per 105 Residential Units		
	Menlo Park	San Mateo County	Menlo Park Existing [4]	San Mateo County Existing [4]	Estimate for Project
Key Resident-Serving Industries					
Health Care	2,153	39,857	17.7	15.2	8.6
Retail Trade	1,602	34,260	13.2	13.1	6.5
Food Service	1,780	38,271	14.6	14.6	4.7
Education	1,160	22,149	9.5	8.5	1.3
Other Services [2]	993	15,587	8.2	5.9	5.6
Arts, Entertainment, Recreation	256	6,534	2.1	2.5	1.3
Subtotal Resident-Serving	7,944	156,658	**65.4**	**59.8**	**28.0**
Other Sectors	33,943	242,366	279.3	92.5	9.5
Total All Sectors	41,887	399,024	344.7	152.3	37.5
Number of Residential Units [3]	12,760	275,109			

(1) U.S. Census Longitudinal Employer-Household Dynamics, 2017 data for workplace geography.

(2) Includes a broad range of services from auto repair, to dry cleaning, to religious organizations.

(3) Number of Housing Units per 2013-2017 American Community Survey.

(4) Calculated by dividing the total number of jobs by the number of residential units and multiplying by 105 units.
Note: The number of jobs by industry have been aggregated by major industry category to allow ready comparison to data on existing jobs by industry in the City of Menlo Park and in San Mateo County.

5.3 Analysis of Housing Need by Income

This section presents a summary of the analysis linking the number of off-site jobs associated with the new residential units to the estimated number of housing units required in each of five income categories. The analysis is based on the same methodology as Section 4 and consists of the following analysis steps.

Step 1 – Adjustment from Employees to Employee Households

This step (Table 5-7) converts the number of employees identified in Table 5-5 to the number of employee households, recognizing that there is, on average, more than one worker per household, and thus the number of housing units in demand for new workers is reduced. The workers-per-worker-household ratio eliminates from the equation all non-working households, such as retired persons and students. The San Mateo County average of 1.88 workers per worker household derived from the U. S. Census Bureau 2013-2017 American Community Survey is used for this step in the analysis, consistent with Section 4. The estimated 37.5 off-site jobs is divided by 1.88 to estimate the number of worker households of 20.

Table 5-7. Estimated Net Change in On-Site Employee Households	
Off-Site Jobs in Services to New Residents	37.5
Number Employee Households - Off-site workers (at 1.88 workers per household) (1)	20.0

(1) Derived from 2013-2017 U.S. Census American Community Survey data for San Mateo County

Step 2 – Occupational Distribution of Employees

The occupational breakdown of employees is the first step to arrive at income level. The output from the IMPLAN model provides the number of employees by industry sector, shown in Table 5-5. The IMPLAN output is then paired with data from the Department of Labor, Bureau of Labor Statistics May 2018 Occupational Employment Survey (OES) to estimate the occupational composition of employees for each industry sector. As shown in Table 5-8, new jobs will be distributed across a variety of occupational categories. The three largest occupational categories are sales and related (14.3%), office and administrative support (14.2%), and food preparation and serving (12.9%). Table 5-8 indicates the percentage and number of employee households by occupation for off-site workers.

Table 5-8. Worker Households by Occupation – Jobs in Off-Site Services to New Residential Units

Occupation Category	Number of Worker Households	% of Jobs
Management Occupations	0.8	4.2%
Business and Financial	1.0	4.9%
Computer and Mathematical	0.3	1.6%
Architecture and Engineering	0.1	0.4%
Sciences	0.1	0.3%
Community & Social Services	0.5	2.3%
Legal	0.1	0.5%
Education, and Library	0.7	3.4%
Arts, Design, Entertainment	0.3	1.6%
Healthcare Practitioners	1.5	7.7%
Healthcare Support	0.9	4.7%
Protective Service	0.2	1.1%
Food Prep and Serving	2.6	12.9%
Building and Grounds.	0.6	3.2%
Personal Care and Service	2.0	9.8%
Sales and Related	2.9	14.3%
Office and Admin Support	2.8	14.2%
Farming, Fishing, Forestry	0.0	0.1%
Construction and Extraction	0.2	1.1%
Installation, Maint. and Repair	0.7	3.7%
Production	0.3	1.3%
Transportation	1.3	6.7%
Totals	**20.0**	**100.0%**

See Appendix Tables 1 and 2 for additional detail.

Step 3 – Estimates of Employee Households by Income

In this step, occupations are translated to employee incomes based on recent wage and salary information for workers in San Mateo County from the California Employment Development Department (EDD). The wage and salary information summarized in Appendix A Table 2 provided the income inputs to the analysis.

For each occupational category shown in Table 5-8, the OES data provides a distribution of specific occupations within the category. For example, within the Food Preparation and Serving Category, there are Supervisors, Cooks, Bartenders, Waiters and Waitresses, Dishwashers, etc. In total, there are approximately 100 detailed occupation categories included in the analysis, as shown in the Appendix A Table 2. Each of these occupation categories has a different distribution of wages, which was obtained from EDD and is specific to workers in the County as of 2019.

Household incomes are estimated from employee incomes using ratios between individual employee income and household income derived from 2013-2017 ACS data for the San Francisco Bay Area. Ratios used in this section are the same as those used in Section 4 and presented in Table 4-5.

Estimated household incomes are compared to the income criteria shown in Table 2-2 to determine the percentage that qualify within each income category for each potential household size/number of workers combination.

Step 4 – Distribution of Household Size and Number of Workers

In this step, we account for the distribution in household sizes and number of workers using local data obtained from the U.S. Census. 2013-2017 ACS data is used to develop a set of percentage factors representing the distribution of household sizes and number of workers within working households. The percentage factors are the same as used in Section 4 and presented in Table 4-4. Application of these percentage factors accounts for the following:

- Households have a range in size and a range in the number of workers.
- Large households generally have more workers than smaller households.

The result of this step is a distribution of working households by number of workers and household size.

Step 5 – Estimate of Number of Households that Meet Size and Income Criteria

Step 5 is the final step to calculate the number of worker households meeting the size and income criteria for the five affordability tiers. The calculation combines the matrix of results from Step 3 on percentage of worker households that would meet the income criteria at each potential household size / number of workers combination, with Step 4, the percentage of worker

household having a given household size / number of workers combination. The result is the percent of households that fall into each affordability tier. The percentages are then multiplied by the number of households from Step 1 to arrive at number of households in each affordability tier.

Tables 5-9 presents the resulting estimates of the number of households within each income category by worker occupation category.

Table 5-9. Employee Households by Occupation and Income (Steps 3, 4, and 5) for Workers in Off-Site Services To New Residents

Major Occupation Category [1]	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Management	0.0	0.0	0.1	0.1	0.1	0.5	0.8
Business and Financial Operations	0.0	0.0	0.2	0.2	0.2	0.2	0.9
Computer and Mathematical	-	-	-	-	-	-	-
Architecture and Engineering	-	-	-	-	-	-	-
Life, Physical and Social Science	-	-	-	-	-	-	-
Community and Social Services	0.0	0.1	0.2	0.1	0.0	0.0	0.5
Legal	-	-	-	-	-	-	-
Education Training and Library	0.0	0.2	0.3	0.2	0.0	0.0	0.7
Arts, Design, Entertainment, Sports, & Media	-	-	-	-	-	-	-
Healthcare Practitioners and Technical	0.0	0.0	0.2	0.3	0.4	0.6	1.5
Healthcare Support	0.1	0.3	0.4	0.2	0.0	-	0.9
Protective Service	-	-	-	-	-	-	-
Food Preparation and Serving Related	0.4	0.9	1.0	0.1	0.0	-	2.5
Building Grounds and Maintenance	0.1	0.2	0.3	0.1	0.0	0.0	0.6
Personal Care and Service	0.4	0.6	0.8	0.1	0.0	0.0	1.9
Sales and Related	0.4	0.9	1.2	0.2	0.1	0.0	2.8
Office and Admin	0.1	0.8	1.1	0.6	0.1	0.0	2.8
Farm, Fishing, and Forestry	-	-	-	-	-	-	-
Construction and Extraction	-	-	-	-	-	-	-
Installation Maintenance and Repair	0.0	0.1	0.3	0.2	0.1	0.0	0.7
Production	-	-	-	-	-	-	-
Transportation and Material Moving	0.1	0.4	0.5	0.2	0.0	-	1.3
Households: Major Occupations	1.6	4.6	6.5	2.6	1.2	1.4	17.9
Households: all other occupations [2]	0.2	0.5	0.8	0.3	0.1	0.2	2.1
Total Households	**1.8**	**5.1**	**7.2**	**2.9**	**1.3**	**1.6**	**20.0**
Rounded	**2.0**	**5.0**	**7.0**	**3.0**	**1.0**	**2.0**	**20.0**

[1] See Appendix A Table 1 and 2 for additional information on Major Occupation Categories.

[2] Represents occupation categories which have a minor amount of employment and for which detailed compensation analysis was not completed. These worker households are assumed to have a similar income distribution to other employees. See Appendix A Tables 1 and 2 for information on major and detailed occupation categories identified for detailed compensation analysis.

5.4 Summary of Housing Need by Income, Off-site Workers

Table 5-10 summarizes the demand for housing by workers in off-site services to the 105 new residential units by income category.

Table 5-10. Estimated Off-Site Employee Households by Income							
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
Worker Households by Income	2	5	7	3	1	2	20

As shown in Table 5-10, the 105 residential units are estimated to create a demand for an additional 20 housing units for off-site workers in services such as retail, restaurants and education. Housing demand for new off-site workers is distributed across the income tiers with the greatest number of households in the Very Low and Low Income categories. The finding that the jobs associated with consumer spending tend to be low-paying jobs where the workers will require housing affordable at the lower income levels is not surprising. As noted above, consumer spending results in employment that is concentrated in lower paid occupations including food preparation, administrative, and retail sales.

6.0 NET IMPACT ON HOUSING AVAILABILITY

This section combines the findings of the prior three sections to estimate the net impact on housing availability from the proposed Project by income. Net impacts on housing availability represent the combined housing supply and demand effects of the proposed Project including from:

- Added housing supply (Section 3);
- Reduced housing demand from the net reduction in on-site jobs (Section 4); and
- Added housing demand from jobs in off-site services to new residential units (Section 5).

Additions to housing supply are considered increases in housing availability. Reductions in housing demand are also considered to *increase* housing availability because this makes existing units available; conversely, increases in housing demand are considered as reducing housing availability.

Section 6.1 addresses total housing availability impacts regardless of location. Section 6.2 provides an estimate specific to impacts occurring within Menlo Park.

6.1 Net Impact on Housing Availability Regionally

The proposed Project is estimated to increase the number of available housing units by 113 units as shown in Table 6-1. This estimate reflects the combined effect of:

- Adding 105 new residential units to the housing supply.
- A 28-unit increase in housing availability from removal of existing on-site jobs, which removes existing worker housing demand.
- A 20-unit decrease in housing availability due to added housing demand by off-site workers who provide services to residents of the proposed Project.

Table 6-1. Estimated Net Impact of Project on Housing Availability

1.	Increase in available housing from construction of new units (Section 3)	105 Units
2.	Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand (Section 4)	28 Units
3.	Decrease in available housing from increase in housing demand by off-site workers in services to new residents (Section 5)	(20 Units)
Net Increase in Available Housing		**113 Units**

Table 6-2 provides a breakout of the housing availability findings by income category for Scenario 1, with Low Income BMR units. As shown, the 113-unit net increase in housing

availability consists of 12 Low, three Moderate, 96 Above Moderate, and eight Over 150% AMI units. Increased housing availability in the Low to Over 150% AMI categories is offset by a decrease within the Extremely Low and Very Low Income housing categories of six units as a result of added housing demand from off-site workers within these two income categories.

Table 6-2. Scenario 1, Net Impacts on Housing Availability by Income Category

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
1. Increase in available housing from construction of new units	0	0	14	0	91	0	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	0	1	5	6	6	10	28
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	(2)	(5)	(7)	(3)	(1)	(2)	(20)
Net Increase in Housing Availability (1)	**(2)**	**(4)**	**12**	**3**	**96**	**8**	**113**

(1) Negative figures represent a net increase in housing demand that is not offset by added housing supply.

Table 6-3 provides a summary of housing availability findings by income for Scenario 2, with a mix of Very Low, Low and Moderate Income BMR units. In Scenario 2, the 113-unit net increase in available housing breaks down as three Low, eight Moderate, 96 Above Moderate, and eight Over 150% AMI Income units. Increased housing availability in the Low to Over 150% AMI categories is offset by a two-unit decrease within the Extremely Low Income housing category due to added housing demand by off-site workers within this income category.

Table 6-3. Scenario 2, Net Impacts on Housing Availability by Income Category

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Over 150% AMI	Total
1. Increase in available housing from construction of new units	0	4	5	5	91	0	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	0	1	5	6	6	10	28
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	(2)	(5)	(7)	(3)	(1)	(2)	(20)
Net Increase in Housing Availability (1)	**(2)**	**0**	**3**	**8**	**96**	**8**	**113**

(1) Negative figures represent a net increase in housing demand that is not offset by added housing supply.

6.2 Menlo Park Share of Impact on Housing Supply and Housing Demand

KMA estimated the share of impacts on housing supply and housing demand that would occur within the City of Menlo Park. Estimates represent an allocation of the total housing availability impacts presented in Table 6-2 and 6-3 based on where housing units included in the proposed Project will be constructed (in Menlo Park) and where workers will live (a share in Menlo Park and a share outside of Menlo Park). Two scenarios are presented regarding the share of workers who will seek and find housing within the City of Menlo Park:

A. Current Commute Share (6.2%) – the "Current Commute Share" scenario is based on the existing 6.2% share of Menlo Park workers who live in the City. Section 6.3 provides additional discussion of the existing commute share.

B. Increased Commute Share (20%) – the "Increased Commute Share" scenario assumes 20% of new workers are housed within the City consistent with an assumption used in the City's 2000 commercial linkage fee nexus study[14] (2000 Nexus Study). The 20% commute share assumption from the 2000 Nexus Study reflects a goal of housing a larger share of the City's workforce.

The analysis under these two scenarios is described below.

A. Current Commute Share Scenario

The analysis of housing availability impacts within Menlo Park under the Current Commute Share scenario reflects the following allocation of total regional impacts identified in Section 6.1:

(1) All residential units added by the proposed Project are in the City of Menlo Park; therefore, all 105 units are identified as additional housing supply in Menlo Park.

(2) None of the workers in the existing office building live in Menlo Park based on data provided by the applicant; therefore, removal of the existing office jobs is not estimated to have any impact on housing availability in Menlo Park.

(3) With the Current Commute Share scenario, one out of 20 total units of additional housing need for off-site workers is estimated to be within Menlo Park based on the existing 6.2% share of Menlo Park workers who live in the City. Applying the 6.2% factor to the findings by income level from Table 6-2 and 6-3 yields a fractional number of units in each income category that each round down to zero. Rather than round all figures to zero, this one unit

[14] Commercial Linkage Fee Nexus Study prepared for the City of Menlo Park by Vernazza Wolfe Associates, Inc. dated September 2000.

of total housing demand is allocated to the Low Income category given it has the greatest estimated fractional share of housing demand in Menlo Park.

In summary, with the Current Commute Share scenario, the estimated net increase in housing availability in Menlo Park is 104 units based on the 105 new housing units constructed in Menlo Park minus the estimated one unit of new housing demand in the City.

Table 6-4 presents the findings by income level for Scenario 1, with Low Income BMR units. As shown, the estimated 104-unit net increase in housing availability in Menlo Park consists of 13 Low and 91 Above Moderate Income units.

Table 6-4. Estimated Menlo Park Share of Net Housing Availability Impacts, Scenario 1 with Current Commute Share								
	Basis for allocation to Menlo Park	**Extr. Low**	**Very Low**	**Low**	**Moderate**	**Above Moderate**	**Over 150% AMI**	**Total**
1. Increase in available housing from construction of new units	*all units are in Menlo Park*	-	-	14	-	91	-	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	*none of the existing workers live in Menlo Park*	-	-	-	-	-	-	-
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	*Based on current 6.2% Menlo Park commute share*	-	-	(1)	-	-	-	(1)
Menlo Park Share of Net Increase in Housing Availability - Scenario 1		-		13	-	91	-	104

Table 6-5 presents the findings by income level for Scenario 2, with Very Low, Low and Moderate Income BMR units. As shown, the estimated 104-unit net increase in housing availability in Menlo Park consists of four Very Low, four Low, five Moderate and 91 Above Moderate Income units.

Table 6-5. Estimated Menlo Park Share of Net Housing Availability Impacts, Scenario 2 with Current Commute Share								
	Basis for allocation to Menlo Park	**Extr. Low**	**Very Low**	**Low**	**Moderate**	**Above Moderate**	**Over 150% AMI**	**Total**
1. Increase in available housing from construction of new units	*all units are in Menlo Park*	-	4	5	5	91	-	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	*none of the existing workers live in Menlo Park*	-	-	-	-	-	-	-
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	*Based on current 6.2% Menlo Park commute share*	-	-	(1)	-	-	-	(1)
Menlo Park Share of Net Increase in Housing Availability - Scenario 2		-	4	4	5	91	-	104

B. Increased Commute Share Scenario

The Increased Commute Share scenario is based on the City's 2000 Nexus Study which incorporated a commute share assumption of 20%. This 20% commute share assumption reflects a goal to house a larger share of the City's workforce locally that was approximately double the 10% commute share for Menlo Park as of the time the Nexus Study was prepared[15]. As stated in the 2000 Nexus Study:

> *Using a relatively higher number provides a goal for the City to achieve. Although inflated housing prices in the 1990's have resulted in a decrease in the percentage of Menlo Park workers who can afford to live in Menlo Park, the City's goal is to encourage local workers to live in Menlo Park in order to achieve a better jobs/housing balance.*

This Increased Commute Share scenario provides additional information regarding how analysis findings would vary were the City to seek to house 20% of its workforce locally consistent with the goal identified in the 2000 Nexus Study.

The analysis of housing availability impacts within Menlo Park under the Increased Commute Share scenario is the same as with the Current Commute Share scenario except with respect to the allocation of a share of the 20 total units of additional housing need for off-site workers to Menlo Park (number 3 under Current Commute Share). With the Increased Commute Share scenario, application of the 20% goal-based commute share results in allocation of four of the 20 units of additional housing need for off-site workers to Menlo Park, rather than one unit as with the Current Commute Share scenario. In total, with the Increased Commute Share scenario, the estimated net increase in housing availability in Menlo Park is 101 units, consisting of 105 new housing units constructed in Menlo Park minus four units of new housing demand in Menlo Park for off-site workers.

Table 6-6 presents the findings by income level for Scenario 1, with Low Income BMR units and the Increased Commute Share. As shown, the estimated 101-unit net increase in housing availability in Menlo Park with the Increased Commute Share consists of 13 Low and 91 Above Moderate Income units, offset by a one-unit net decrease in housing availability within each of the Extremely Low, Very Low and Moderate Income categories.

[15] Per the 1990 Census, Menlo Park's commute share was 10% based on a total number working in Menlo Park of 26,048 of which 2,662 lived in Menlo Park. Figures do not include those who work out of their homes rather than commute to a separate workplace. The 1990 Census was the most recent data available at the time the 2000 Nexus Study was prepared as the 2000 Census data was not yet released. The 2000 Nexus Study references a separate factor of 23%, also as of 1990, which is not comparable to the 10% commute share in 1990. This 23% factor represents the share of Menlo Park *employed residents* (residents who are employed) who work in Menlo Park versus commute out of Menlo Park to a job located in another city.

Table 6-6. Estimated Menlo Park Share of Net Housing Availability Impacts, Scenario 1 with Increased Commute Share								
	Basis for allocation to Menlo Park	**Extr. Low**	**Very Low**	**Low**	**Moderate**	**Above Moderate**	**Over 150% AMI**	**Total**
1. Increase in available housing from construction of new units	*all units are in Menlo Park*	-	-	14	-	91	-	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	*none of the existing workers live in Menlo Park*	-	-	-	-	-	-	-
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	*2000 Nexus Goal-Based Menlo Park commute share of 20%*	(1)	(1)	(1)	(1)	-	-	(4)
Menlo Park Share of Net Increase in Housing Availability - Scenario 1		(1)	(1)	13	(1)	91	-	101

Table 6-7 presents the findings by income level for Scenario 2, with Very Low, Low and Moderate Income BMR units and the Increased Commute Share. As shown, the estimated 101-unit net increase in housing availability in Menlo Park consists of three Very Low, four Low, four Moderate and 91 Above Moderate Income units offset by a one-unit net decrease in housing availability within the Extremely Low Income category.

Table 6-7. Estimated Menlo Park Share of Net Housing Availability Impacts, Scenario 2 with Increased Commute Share								
	Basis for allocation to Menlo Park	**Extr. Low**	**Very Low**	**Low**	**Moderate**	**Above Moderate**	**Over 150% AMI**	**Total**
1. Increase in available housing from construction of new units	*all units are in Menlo Park*	-	4	5	5	91	-	105
2. Increase in available housing from removal of existing on-site jobs, which reduces worker housing demand	*none of the existing workers live in Menlo Park*	-	-	-	-	-	-	-
3. Decrease in available housing from increase in housing demand by off-site workers in services to new residents	*2000 Nexus Goal-Based Menlo Park commute share of 20%*	(1)	(1)	(1)	(1)	-	-	(4)
Menlo Park Share of Net Increase in Housing Availability - Scenario 2		(1)	3	4	4	91	-	101

6.3 Additional Discussion of Commute Share

The share of off-site workers in restaurants, retail and other services to residents of the new residential units who will live in Menlo Park is estimated based on a commute share of 6.2% in the Current Commute Share scenario. This percentage is derived from the U.S. Census 2013-2017 American Community Survey and reflects the existing share of those working in Menlo Park who also live in Menlo Park, excluding those who work at home. The remaining 93.8% of the workforce commutes in from outside of the City.

Use of the existing commute share specific to the City of Menlo Park may overstate the share of off-site workers likely to live in Menlo Park as some jobs in off-site services to new residents such as retail, medical care, and restaurants may be in nearby cities rather than in Menlo Park. For those who work in nearby cities, the propensity to live in Menlo Park is expected to be less than the 6.2% commute share for Menlo Park workers[16]. Applying the 6.2% Menlo Park commute share to the total off-site worker housing demand of 20 units yields an estimated demand in Menlo Park of one unit in the Current Commute Share scenario. While it is possible that less than 6.2% of off-site workers would live in Menlo Park, due to rounding, applying a commute factor of anywhere between approximately 2.5% and 7.5% to the 20-unit total housing demand would yield the same one-unit result.

The existing percentage of workers commuting from other jurisdictions to Menlo Park is attributable to a number of factors including the supply of housing relative to the number of jobs and the high cost of housing in Menlo Park. Although many factors influence housing decisions, because the number of workers that both live and work in Menlo Park is so low and the cost of housing is high, it is possible that the 6.2% does not reflect the proportion of workers who would live in Menlo Park if they could find housing and could afford it. The share of the workforce that lives in Menlo Park has also been declining over time from 10% in 1990 to 7% as of the 2000 Census to 6.2% per the 2013-2017 ACS. Workers most everywhere tend to commute more in recent years than in the past and, in addition, Menlo Park has become less affordable over time. The possibility that availability and affordability of housing have contributed to a downward trend in Menlo Park's commute share is the primary reason for including the separate goal-based Increased Commute Share scenario.

Construction of new housing can be expected to contribute toward increasing the number of workers that live locally by providing additional housing opportunities in Menlo Park. Due to the 105-unit size of the proposed Project, which is small relative to the much larger workforce of more than 40,000, a measurable change in commute share is not expected; however, the proposed Project would contribute incrementally to housing a greater number of workers locally.

[16] For example, around 3.9% of those who work in Palo Alto live in Menlo Park based on data from the American Community Survey, lower than the 6.2% share for Menlo Park workers.

7.0 DISPLACEMENT ANALYSIS

This section provides a discussion of the potential for the proposed Project to contribute to displacement of existing residents and neighborhood change in two proximate communities known to be vulnerable to displacement, the City of East Palo Alto (East Palo Alto) and the Belle Haven neighborhood of Menlo Park (Belle Haven). Given the complex array of factors that influence housing markets and neighborhood change, precise estimates or projections of outcomes are not feasible; instead, a qualitative discussion of the potential for the proposed Project to impact displacement is provided.

Location of Proposed Project Relative to Belle Haven and East Palo Alto

The aerial image below shows the location of the proposed Project relative to the Belle Haven Neighborhood and the City of East Palo Alto. The proposed Project is located near the Marsh Road and U.S. 101 interchange. Belle Haven is a residential neighborhood located to the east of the Project site generally bounded by U.S. 101, Willow Road and a railroad right-of-way, outlined in red on the aerial image below. East Palo Alto is just to the east of Belle Haven across Willow Road.

Proposed Project, Belle Haven and East Palo Alto Location



Source: Google Maps

7.1 Displacement and Risk of Displacement in East Palo Alto and Belle Haven

Displacement occurs when housing or neighborhood conditions force existing residents to move or households feel like their move is involuntary. Displacement can be caused by a range of

physical, economic and social factors including but not limited to foreclosure, condominium conversion, building deterioration or condemnation, increased taxes, natural disasters, eminent domain, and increases in housing costs[17, 18, 19]. The HNA is focused on economic drivers of displacement, specifically the potential for the proposed Project to affect the local housing market and housing costs.

Lower income communities in the Bay Area have become increasingly vulnerable to displacement of existing residents. Employment growth, constrained housing production, and rising income inequality are among the factors that have contributed to increased displacement pressures, especially within lower income communities in locations accessible to employment centers where many households are housing-cost burdened.

East Palo Alto and Belle Haven both have existing risk factors for displacement. Both have a relatively lower-income existing population that includes a high percentage of households who spend 35% or more of their income on housing. East Palo Alto's rent control and just cause eviction ordinance provides significant protection to existing renters within multi-family buildings built prior to 1988 but does not preclude the potential for longer-term neighborhood change. The Urban Displacement Project,[20] an initiative of UC Berkeley "aimed at understanding the nature of gentrification and displacement in the Bay Area" has identified the Belle Haven census tract and census tracts within East Palo Alto as areas experiencing "ongoing gentrification and/or displacement" or "at risk of displacement." A separate analysis by the Urban Displacement Project[21] indicates that, despite risk factors for displacement, East Palo Alto had not experienced significant gentrification during the 2000 to 2013 period, potentially due to policies aimed at preventing displacement including rent control and just cause eviction protections.

A recent study by UC Berkeley's Center for Community Innovation and its Y-PLAN initiative, titled *Investment and Disinvestment as Neighbors: A Study of Baseline Housing Conditions in the Bay Area Peninsula*, provided an assessment of the baseline housing conditions in the Belle Haven neighborhood, City of East Palo Alto, and North Fair Oaks neighborhood (unincorporated San Mateo County). The study found indications of recent changes including increased population turnover, declining school age population, and an increase in homelessness. The study also identified a high incidence of rent burdened households and disproportionate pressure on the local housing market compared to the rest of San Mateo County. The study

[17] Zuk, M. et. al. 2017. Gentrification, Displacement, and the Role of Public Investment. Journal of Planning Literature. Journal of Planning Literature 1-14.

[18] Center for Community Innovation (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

[19] Bradshaw, K. (2019). Uneven Ground: How unequal land use harms communities in southern San Mateo County. Palo Alto Online. https://paloaltoonline.atavist.com/uneven-ground.

[20] Zuk, M., & Chapple, K. (2019). Urban Displacement Project. http://www.urbandisplacement.org/

[21] Crispell, M, Harris L.R., and Cespedes S. March 2016. San Mateo County's East Palo Alto. Urban Displacement Project.

found more signs of disinvestment in East Palo Alto and more indications of real estate speculation in Belle Haven[22].

7.2 Potential for Proposed Project to Contribute to Displacement

The following outlines factors considered in the evaluation of whether the proposed Project could have an influence on displacement in East Palo Alto and Belle Haven:

(1) The proposed Project adds 105 new units to the housing supply, including 14 below market rate units, which will make additional housing opportunities available in a very competitive housing market.

(2) The proposed Project is estimated to reduce worker housing demand by eight units based on an estimated net reduction of 16 jobs. The net reduction of 16 jobs represents the net effect of removing 54 on-site jobs due to removal of the existing office space occupied by venture capital and technology tenants and addition of an estimated 38 off-site jobs in sectors like retail and restaurants that will serve new residents.

(3) The proposed Project is located in an area geographically separate from both Belle Haven and East Palo Alto and will not physically alter either community.

(4) The 105 new units in the proposed Project equate to a 0.9% increase in the existing 12,760-unit Menlo Park housing stock[23] and a 0.04% increase in the 275,109-unit housing stock of San Mateo County.

(5) Two recent studies have found moderating effects of new rental housing on rents and displacement pressures at the local level. New residential developments were found to decrease rents in the area surrounding the new housing relative to market trend.[24]

In consideration of the above factors, the proposed Project is not anticipated to contribute to displacement in East Palo Alto or Belle Haven. The proposed Project adds to the supply of market rate and affordable housing and reduces demand for housing in the local area, both factors that will tend to moderate or counteract displacement pressures by relieving, to some extent, market pressures on the existing local housing stock.

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[22] Center for Community Innovation. (2020). Investment and Disinvestment as Neighbors, A Study of Baseline Housing Conditions in the Bay Area Peninsula.

[23] Housing unit counts are per the 2013-2017 American Community Survey.

[24] Asquith, Brian J., Evan Mast, and Davin Reed. 2019. "Supply Shock Versus Demand Shock: The Local Effects of New Housing in Low-Income Areas." Upjohn Institute Working Paper 19-316. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research. https://doi.org/10.17848/wp19-316

Li, Xiaodi (2019). Do New Housing Units in Your Backyard Raise Your Rents? NYU Wagner and NYU Furman Center. https://72187189-93c1-48bc-b596-fc36f4606599.filesusr.com/ugd/7fc2bf_2fc84967cfb945a69a4df7baf8a4c387.pdf

APPENDIX A – WORKER OCCUPATIONS AND COMPENSATION LEVELS

APPENDIX A TABLE 1
WORKER OCCUPATION DISTRIBUTION, 2018
SERVICES TO HOUSEHOLDS EARNING $100 - $150K, RESIDENT SERVICES
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Major Occupations (2% or more)	Worker Occupation Distribution[1] Services to Households Earning $100,000 to $150,000
Management Occupations	*4.1%*
Business and Financial Operations Occupations	*4.7%*
Community and Social Service Occupations	*2.3%*
Education, Training, and Library Occupations	*3.3%*
Healthcare Practitioners and Technical Occupations	*7.5%*
Healthcare Support Occupations	*4.6%*
Food Preparation and Serving Related Occupations	*12.6%*
Building and Grounds Cleaning and Maintenance Occupatic	*3.2%*
Personal Care and Service Occupations	*9.5%*
Sales and Related Occupations	*13.9%*
Office and Administrative Support Occupations	*13.8%*
Installation, Maintenance, and Repair Occupations	*3.6%*
Transportation and Material Moving Occupations	*6.5%*
All Other Worker Occupations - Services to Households Earning $100,000 to $150,000	*10.5%*
INDUSTRY TOTAL	100.0%

[1] Distribution of employment by industry is per the IMPLAN model and the distribution of occupational employment within those industries is based on the Bureau of Labor Statistics Occupational Employment Survey.

Source: Bureau of Labor Statistics, IMPLAN
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 2
AVERAGE ANNUAL WORKER COMPENSATION, 2019
SERVICES TO HOUSEHOLDS EARNING $100,000 TO $150,000
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	2019 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 1 of 4			
Management Occupations			
General and Operations Managers	$176,200	38.9%	1.6%
Sales Managers	$163,700	4.8%	0.2%
Administrative Services Managers	$145,700	3.8%	0.2%
Computer and Information Systems Managers	$203,300	3.4%	0.1%
Financial Managers	$199,500	9.9%	0.4%
Food Service Managers	$71,100	4.9%	0.2%
Medical and Health Services Managers	$165,000	7.1%	0.3%
Social and Community Service Managers	$71,400	3.5%	0.1%
Managers, All Other	$177,600	4.0%	0.2%
All other Management Occupations (Avg. All Categories)	$166,000	19.7%	0.8%
Weighted Mean Annual Wage	***$166,000***	**100.0%**	**4.1%**
Business and Financial Operations Occupations			
Human Resources Specialists	$94,100	5.2%	0.2%
Management Analysts	$119,400	5.5%	0.3%
Training and Development Specialists	$87,400	3.3%	0.2%
Market Research Analysts and Marketing Specialists	$97,800	7.3%	0.3%
Business Operations Specialists, All Other	$103,000	9.0%	0.4%
Accountants and Auditors	$95,300	16.7%	0.8%
Financial Analysts	$140,000	10.0%	0.5%
Personal Financial Advisors	$167,900	12.0%	0.6%
Loan Officers	$83,800	3.4%	0.2%
All Other Business and Financial Operations Occupations (Avg. All Categ	$115,600	27.6%	1.3%
Weighted Mean Annual Wage	***$115,600***	**100.0%**	**4.7%**
Community and Social Service Occupations			
Educational, Guidance, School, and Vocational Counselors	$70,200	4.1%	0.1%
Rehabilitation Counselors	$39,800	4.0%	0.1%
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	$39,800	14.1%	0.3%
Child, Family, and School Social Workers	$65,800	7.9%	0.2%
Healthcare Social Workers	$80,800	6.6%	0.2%
Mental Health and Substance Abuse Social Workers	$81,700	5.5%	0.1%
Social and Human Service Assistants	$49,200	16.9%	0.4%
Clergy	$79,700	14.7%	0.3%
Directors, Religious Activities and Education	$64,500	10.3%	0.2%
Religious Workers, All Other	$35,800	3.9%	0.1%
All Other Community and Social Service Occupations (Avg. All Categories	$60,400	12.0%	0.3%
Weighted Mean Annual Wage	***$60,400***	**100.0%**	**2.3%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 2
AVERAGE ANNUAL WORKER COMPENSATION, 2019
SERVICES TO HOUSEHOLDS EARNING $100,000 TO $150,000
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	2019 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 2 of 4			
Education, Training, and Library Occupations			
Vocational Education Teachers, Postsecondary	$85,100	3.3%	0.1%
Preschool Teachers, Except Special Education	$47,300	22.1%	0.7%
Elementary School Teachers, Except Special Education	$86,500	7.4%	0.2%
Secondary School Teachers, Except Special and Career/Technical Educa	$89,800	5.6%	0.2%
Self-Enrichment Education Teachers	$53,000	12.7%	0.4%
Teachers and Instructors, All Other, Except Substitute Teachers	$48,200	7.5%	0.2%
Substitute Teachers	$46,400	3.6%	0.1%
Teacher Assistants	$40,200	17.2%	0.6%
All Other Education, Training, and Library Occupations (Avg. All Categorie	$54,900	20.7%	0.7%
Weighted Mean Annual Wage	***$54,900***	**100.0%**	**3.3%**
Healthcare Practitioners and Technical Occupations			
Pharmacists	$143,000	3.7%	0.3%
Physicians and Surgeons, All Other	$136,400	3.9%	0.3%
Physical Therapists	$105,000	3.9%	0.3%
Registered Nurses	$145,400	27.5%	2.1%
Clinical Laboratory Technologists and Technicians	$69,000	3.2%	0.2%
Dental Hygienists	$114,400	5.7%	0.4%
Pharmacy Technicians	$56,900	5.4%	0.4%
Licensed Practical and Licensed Vocational Nurses	$72,400	7.5%	0.6%
All Other Healthcare Practitioners and Technical Occupations (Avg. All Ca	$118,300	39.3%	2.9%
Weighted Mean Annual Wage	***$118,300***	**100.0%**	**7.5%**
Healthcare Support Occupations			
Home Health Aides	$34,000	24.1%	1.1%
Nursing Assistants	$56,100	22.5%	1.0%
Massage Therapists	$49,200	6.8%	0.3%
Dental Assistants	$57,100	14.2%	0.7%
Medical Assistants	$52,300	14.8%	0.7%
Veterinary Assistants and Laboratory Animal Caretakers	$38,000	3.5%	0.2%
All Other Healthcare Support Occupations (Avg. All Categories)	$48,100	14.0%	0.6%
Weighted Mean Annual Wage	***$48,100***	**100.0%**	**4.6%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 2
AVERAGE ANNUAL WORKER COMPENSATION, 2019
SERVICES TO HOUSEHOLDS EARNING $100,000 TO $150,000
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	2019 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 3 of 4			
Food Preparation and Serving Related Occupations			
First-Line Supervisors of Food Preparation and Serving Workers	$47,600	7.3%	0.9%
Cooks, Fast Food	$27,100	4.4%	0.6%
Cooks, Restaurant	$39,500	10.9%	1.4%
Food Preparation Workers	$34,700	4.6%	0.6%
Bartenders	$40,000	3.8%	0.5%
Combined Food Preparation and Serving Workers, Including Fast Food	$31,300	29.2%	3.7%
Waiters and Waitresses	$39,500	20.7%	2.6%
Dishwashers	$33,000	3.8%	0.5%
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	$35,000	3.6%	0.4%
All Other Food Preparation and Serving Related Occupations (Avg. All Ca	$36,100	11.8%	1.5%
Weighted Mean Annual Wage	***$36,100***	**100.0%**	**12.6%**
Building and Grounds Cleaning and Maintenance Occupations			
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeepin	$66,000	4.2%	0.1%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	$36,300	39.1%	1.2%
Maids and Housekeeping Cleaners	$39,800	9.5%	0.3%
Landscaping and Groundskeeping Workers	$42,100	37.3%	1.2%
All Other Building and Grounds Cleaning and Maintenance Occupations (A	$40,500	9.9%	0.3%
Weighted Mean Annual Wage	***$40,500***	**100.0%**	**3.2%**
Personal Care and Service Occupations			
First-Line Supervisors of Personal Service Workers	$57,300	3.9%	0.4%
Nonfarm Animal Caretakers	$35,400	9.8%	0.9%
Hairdressers, Hairstylists, and Cosmetologists	$35,400	15.0%	1.4%
Manicurists and Pedicurists	$27,500	4.9%	0.5%
Childcare Workers	$36,400	8.7%	0.8%
Personal Care Aides	$28,200	36.8%	3.5%
Fitness Trainers and Aerobics Instructors	$60,800	5.7%	0.5%
All Other Personal Care and Service Occupations (Avg. All Categories)	$34,600	15.2%	1.4%
Weighted Mean Annual Wage	***$34,600***	**100.0%**	**9.5%**
Sales and Related Occupations			
First-Line Supervisors of Retail Sales Workers	$48,900	9.9%	1.4%
Cashiers	$32,000	29.1%	4.1%
Retail Salespersons	$36,400	37.5%	5.2%
Securities, Commodities, and Financial Services Sales Agents	$108,800	5.0%	0.7%
Sales Representatives, Services, All Other	$83,600	4.5%	0.6%
Sales Representatives, Wholesale and Manufacturing, Except Technical a	$85,700	4.0%	0.6%
All Other Sales and Related Occupations (Avg. All Categories)	$44,900	10.0%	1.4%
Weighted Mean Annual Wage	***$44,900***	**100.0%**	**13.9%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 2
AVERAGE ANNUAL WORKER COMPENSATION, 2019
SERVICES TO HOUSEHOLDS EARNING $100,000 TO $150,000
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	2019 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total No. of Service Workers
Page 4 of 4			
Office and Administrative Support Occupations			
First-Line Supervisors of Office and Administrative Support Workers	$74,200	6.3%	0.9%
Bookkeeping, Accounting, and Auditing Clerks	$58,300	7.6%	1.0%
Customer Service Representatives	$54,700	12.2%	1.7%
Receptionists and Information Clerks	$42,200	10.2%	1.4%
Stock Clerks and Order Fillers	$36,700	8.9%	1.2%
Medical Secretaries	$51,000	4.7%	0.7%
Secretaries and Administrative Assistants, Except Legal, Medical, and Exe	$54,600	10.6%	1.5%
Office Clerks, General	$47,000	14.5%	2.0%
All Other Office and Administrative Support Occupations (Avg. All Categor	$51,100	25.0%	3.5%
Weighted Mean Annual Wage	***$51,100***	**100.0%**	**13.8%**
Installation, Maintenance, and Repair Occupations			
First-Line Supervisors of Mechanics, Installers, and Repairers	$92,800	7.8%	0.3%
Automotive Body and Related Repairers	$59,800	9.8%	0.4%
Automotive Service Technicians and Mechanics	$62,900	28.2%	1.0%
Bus and Truck Mechanics and Diesel Engine Specialists	$69,100	5.9%	0.2%
Maintenance and Repair Workers, General	$57,100	13.5%	0.5%
All Other Installation, Maintenance, and Repair Occupations (Avg. All Cate	$65,400	34.8%	1.3%
Weighted Mean Annual Wage	***$65,400***	**100.0%**	**3.6%**
Transportation and Material Moving Occupations			
First-Line Supervisors of Transportation and Material Moving Workers, Ex	$67,900	4.7%	0.3%
Bus Drivers, School or Special Client	$52,800	5.9%	0.4%
Driver/Sales Workers	$38,600	5.5%	0.4%
Heavy and Tractor-Trailer Truck Drivers	$59,500	12.6%	0.8%
Light Truck or Delivery Services Drivers	$45,900	9.4%	0.6%
Taxi Drivers and Chauffeurs	$39,000	4.6%	0.3%
Parking Lot Attendants	$34,100	11.1%	0.7%
Cleaners of Vehicles and Equipment	$33,400	9.5%	0.6%
Laborers and Freight, Stock, and Material Movers, Hand	$39,200	16.1%	1.0%
All Other Transportation and Material Moving Occupations (Avg. All Categ	$44,500	20.5%	1.3%
Weighted Mean Annual Wage	***$44,500***	**100.0%**	**6.5%**
			89.5%

[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

[2] Occupation percentages are based on the 2018 National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are based on Occupational Employment Survey data applicable to San Mateo County as of 2018 and are adjusted by EDD to the first quarter of 2019.

[3] Including occupations representing 3% or more of the major occupation group

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department, IMPLAN
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 3
WORKER OCCUPATION DISTRIBUTION, 2018
EXISTING OFFICE SPACE
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

	Worker Occupation Distribution[1] Existing Office Space
Management Occupations	*11.8%*
Business and Financial Operations Occupations	*20.1%*
Computer and Mathematical Occupations	*36.9%*
Arts, Design, Entertainment, Sports, and Media Occupations	*2.5%*
Sales and Related Occupations	*13.6%*
Office and Administrative Support Occupations	*13.2%*
All Other Worker Occupations - Existing Office Space	*1.9%*
INDUSTRY TOTAL	100.0%

[1] Distribution of employment by industry is per the IMPLAN model and the distribution of occupational employment within those industries is based on the Bureau of Labor Statistics Occupational Employment Survey.

Source: Bureau of Labor Statistics
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 4
AVERAGE ANNUAL WORKER COMPENSATION, 2019
EXISTING OFFICE SPACE WORKERS
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	2019 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total Office Workers
Page 1 of 2			
Management Occupations			
General and Operations Managers	$176,200	21.8%	2.6%
Marketing Managers	$191,000	9.5%	1.1%
Sales Managers	$163,700	9.7%	1.1%
Administrative Services Managers	$145,700	3.1%	0.4%
Computer and Information Systems Managers	$203,300	23.8%	2.8%
Financial Managers	$199,500	15.3%	1.8%
Managers, All Other	$177,600	6.9%	0.8%
All other Management Occupations (Avg. All Categories)	$186,600	10.0%	1.2%
Weighted Mean Annual Wage	***$186,600***	**100.0%**	**11.8%**
Business and Financial Operations Occupations			
Human Resources Specialists	$94,100	4.0%	0.8%
Management Analysts	$119,400	8.8%	1.8%
Training and Development Specialists	$87,400	3.2%	0.6%
Market Research Analysts and Marketing Specialists	$97,800	16.0%	3.2%
Business Operations Specialists, All Other	$103,000	8.7%	1.8%
Accountants and Auditors	$95,300	10.6%	2.1%
Financial Analysts	$140,000	14.1%	2.8%
Personal Financial Advisors	$167,900	23.1%	4.6%
All Other Business and Financial Operations Occupations (Avg. All Categ	$124,600	11.5%	2.3%
Weighted Mean Annual Wage	***$124,600***	**100.0%**	**20.1%**
Computer and Mathematical Occupations			
Computer Systems Analysts	$123,200	5.6%	2.1%
Computer Programmers	$105,700	8.2%	3.0%
Software Developers, Applications	$153,600	43.8%	16.2%
Software Developers, Systems Software	$142,100	11.1%	4.1%
Computer User Support Specialists	$78,100	12.4%	4.6%
Computer Occupations, All Other	$117,100	6.4%	2.4%
All Other Computer and Mathematical Occupations (Avg. All Categories)	$132,400	12.5%	4.6%
Weighted Mean Annual Wage	***$132,400***	**100.0%**	**36.9%**
Arts, Design, Entertainment, Sports, and Media Occupations			
Art Directors	$141,700	5.1%	0.1%
Multimedia Artists and Animators	$95,100	25.5%	0.6%
Graphic Designers	$75,800	16.0%	0.4%
Producers and Directors	$116,300	6.5%	0.2%
Public Relations Specialists	$80,500	13.4%	0.3%
Technical Writers	$100,900	15.2%	0.4%
Writers and Authors	$86,500	3.3%	0.1%
All Other Arts, Design, Entertainment, Sports, and Media Occupations (Av	$94,300	15.2%	0.4%
Weighted Mean Annual Wage	***$94,300***	**100.0%**	**2.5%**

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 4
AVERAGE ANNUAL WORKER COMPENSATION, 2019
EXISTING OFFICE SPACE WORKERS
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	2019 Avg. Compensation [1]	% of Total Occupation Group [2]	% of Total Office Workers
Page 2 of 2			
Sales and Related Occupations			
First-Line Supervisors of Non-Retail Sales Workers	$80,300	4.3%	0.6%
Securities, Commodities, and Financial Services Sales Agents	$108,800	42.8%	5.8%
Sales Representatives, Services, All Other	$83,600	14.6%	2.0%
Sales Representatives, Wholesale and Manufacturing, Technical and Scie	$94,800	23.2%	3.2%
Sales Representatives, Wholesale and Manufacturing, Except Technical a	$85,700	5.0%	0.7%
Sales Engineers	$119,700	4.5%	0.6%
All Other Sales and Related Occupations (Avg. All Categories)	$99,500	5.5%	0.8%
Weighted Mean Annual Wage	***$99,500***	**100.0%**	**13.6%**
Office and Administrative Support Occupations			
First-Line Supervisors of Office and Administrative Support Workers	$74,200	7.7%	1.0%
Bookkeeping, Accounting, and Auditing Clerks	$58,300	7.3%	1.0%
Brokerage Clerks	$65,800	10.2%	1.3%
Customer Service Representatives	$54,700	25.8%	3.4%
Executive Secretaries and Executive Administrative Assistants	$85,500	11.2%	1.5%
Secretaries and Administrative Assistants, Except Legal, Medical, and Exe	$54,600	10.9%	1.4%
Office Clerks, General	$47,000	13.7%	1.8%
All Other Office and Administrative Support Occupations (Avg. All Categor	$60,800	13.2%	1.7%
Weighted Mean Annual Wage	***$60,800***	**100.0%**	**13.2%**
			98.1%

[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

[2] Occupation percentages are based on the 2018 National Industry - Specific Occupational Employment survey compiled by the Bureau of Labor Statistics. Wages are based on Occupational Employment Survey data applicable to San Mateo County as of 2018 and are adjusted by EDD to the first quarter of 2019.

[3] Including occupations representing 3% or more of the major occupation group

Sources: U.S. Bureau of Labor Statistics, California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 5
AVERAGE ANNUAL WORKER COMPENSATION, 2019
BUILDING SERVICES
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	Estimated No. On-site workers	2019 Avg. Compensation [1]	% of Total Building Services Workers
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1.5	$36,300	75.0%
Maintenance and Repair Workers, General	0.5	$57,100	25.0%
	2		100.0%

[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

Sources: California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 6
AVERAGE ANNUAL WORKER COMPENSATION, 2019
APARTMENT PROPERTY MANAGEMENT
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	Estimated No. On-site workers	2019 Avg. Compensation [1]	% of Total Building Services Workers
Property, Real Estate, and Community Association Managers	1	$96,900	33.3%
Maintenance and Repair Workers, General	1	$57,100	33.3%
Grounds Maintenance Workers, All Other	1	$40,700	33.3%
	3		100.0%

[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

Sources: California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX A TABLE 7
AVERAGE ANNUAL WORKER COMPENSATION, 2019
RETAIL / CAFÉ
HOUSING NEEDS ASSESSMENT - 111 INDEPENDENCE DR
MENLO PARK, CA

Occupation [3]	Estimated No. On-site workers	2019 Avg. Compensation [1]	% of Total Building Services Workers
First-Line Supervisors of Food Preparation and Serving Worl	1	$47,600	50.0%
Counter Attendants, Cafeteria, Food Concession, and Coffee	1	$32,400	50.0%
	2		100.0%

[1] The methodology utilized by the California Employment Development Department (EDD) assumes hourly paid employees are employed full-time. Annual compensation is calculated by EDD by multiplying hourly wages by 40 hours per work week by 52 weeks.

Sources: California Employment Development Department
Keyser Marston Associates, Inc.
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APPENDIX E

TRANSPORTATION IMPACT ANALYSIS

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111 Independence Drive – Transportation Impact Analysis

INTRODUCTION

This Transportation Impact Analysis (TIA) has been conducted to present the analysis methodology and findings of the level of service assessment for the proposed development at 111 Independence Drive in Menlo Park, California.

For purposes of disclosing potential transportation impacts, the proposed project uses the City of Menlo Park's current TIA Guidelines to ensure compliance with both State and local requirements.[1] Up until July 1, 2020, the City's TIA Guidelines used roadway congestion or level of service (LOS) as the primary study metric for planning and environmental review purposes. However, Senate Bill (SB) 743 required the Governor's Office of Planning and Research (OPR) to establish a new metric for identifying and mitigating transportation impacts under CEQA in an effort to meet the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. CEQA Section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to CEQA Section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. OPR identified vehicle miles traveled (VMT) as the required CEQA transportation metric for determining potentially significant environmental impacts.[2] In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the section implementing SB 743 (CEQA Guidelines Section 15064.3). OPR developed a *Technical Advisory on Evaluating Transportation Impacts in CEQA,* which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[3] As of July 1, 2020, VMT (not LOS) is the only legally acceptable threshold for transportation-related environmental impacts pursuant to CEQA.

As stated above, LOS is no longer a CEQA threshold. However, the City's TIA Guidelines require that the TIA also analyze LOS for local planning purposes. The LOS analysis would determine whether the project traffic would cause an intersection LOS to exceed the City's LOS thresholds or cause either the average delay or average critical delay to exceed the City's intersection delay thresholds under near term and cumulative conditions. The LOS and delay thresholds vary depending on the street classifications as well as whether the intersection is on a State route or not. The City's TIA Guidelines further require an analysis of

[1] Menlo Park, City of. 2020a. *Transportation Impact Analysis Guidelines*. Website: www.menlopark.org/DocumentCenter/View/302/Transportation-Impact-Analysis-Guidelines?bidId= (accessed July 10, 2020). July.

[2] California Office of Planning and Research. 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013)*. January 20.

[3] California Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* Available online at: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf (accessed February 7, 2019). December 18.

the proposed project in relation to relevant policies of the Circulation Element and consideration of specific measures to address noncompliance with local policies which may occur as a result of the addition of project traffic. This analysis is prepared to determine if there are potential measures that could bring the proposed project into conformance with Circulation Policy 3.4 (strive to maintain LOS D at all City controlled intersections).

PROJECT DESCRIPTION

The proposed project would consist of 15 dwelling units and approximately 713 square feet of commercial/retail space. Parking would be provided for 113 vehicles and a total of 177 bicycle parking spaces would be provided throughout the ground level of the project site, including 160 long-term spaces within a designated bicycle storage room within the first floor for residents, and 17 short-term spaces near the entrance to the parking garage at the southern end of the project site. Access to the parking garage would be via a single two-way entry point at the southern corner of the project site from Independence Drive. The ground floor would also include an access ramp along the northern boundary of the project site to provide emergency vehicle access. Pedestrian access to the proposed building would be provided from Independence Drive and within the site interior. The proposed project includes dedication of an easement along Independence Drive to construct a portion of public sidewalk within the site.

Transportation Demand Management Plan

The proposed project would implement TDM plan in an effort to reduce project-generated vehicle trips and encourage travel by alternative mode. The TDM measures are listed below.

- Bicycle facilities including secure and convenient bicycle storage and parking, a bike repair station, and surveillance cameras placed at all access points to bicycle storage;
- Pedestrian facilities including public sidewalk and lighting along Independence Drive;
- Unbundled on-site parking will separate the cost of residential parking from the cost of leasing a unit to encourage residents to utilize other modes of transportation;
- On-site amenities include a fitness center and community serving retail to limit trips needed to access other locations; and
- On-site Commute Assistance Center will provide services to help residents explore other commute modes.

Project Trip Generation

The vehicle trip generation estimates for the proposed residential and commercial/retail space and the existing office building were calculated using the trip generation rates from the most recent ITE Trip Generation Manual (10th Edition, 2018).[4] The land use categories for General Office Building (ITE Code 710), Multi-Family Housing Mid-Rise (ITE Code 221), and Coffee/Donut Shop with Drive-Through Window (ITE Code 936), were applied to the existing land use square footages for this analysis. Because the tenant

[4] Institute of Transportation Engineers. 2018. *Trip Generation Manual, 10th Edition*.

of the proposed ground-floor retail space is not known at this time, the Coffee/Donut Shop with Drive-Through Window was selected to provide a conservatively high estimate of the proposed project's trip generation.

Consistent with the Menlo Park TIA Guidelines,[5] vehicle trip reductions were taken to account for pass-by/walk-in trips, internalized trips, the TDM Plan,[6] and existing uses.

The trip subtotal for the café include a 10 percent internalization reduction for the trips made onsite and not utilizing external streets, and a 43 percent pass-by/walk-in reduction to account for the stops made at the café, therefore not generating new trips. A 20 percent reduction was applied to account for the proposed TDM Plan which would comply with City Ordinance 1026 and achieve the required minimum of 20 percent reduction of daily and peak hour vehicle trips.[7] Additionally, because the site is occupied by an existing active office building, trip credits were applied to account for the removal of the existing 15,000 square feet of office space.

As shown in Table 1, application of the vehicle trip generation rates, assumptions, and trip reductions would result in a net project-generated increase in the number of daily and AM and PM peak hour vehicle trips. The proposed project would generate 581 net new daily vehicle trips, 41 net new AM peak hour vehicle trips (7 inbound trips and 34 outbound trips) and 29 net new PM peak hour vehicle trips (23 inbound trips and 6 outbound trips). The vehicle trip generation estimates used in this analysis have been approved by the City of Menlo Park.

Table 1 Vehicle Trip Generation Estimates

Land Use (ITE Code)	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Existing Uses								
Office Building	15,000 sf	(146)	(15)	(2)	(17)	(3)	(14)	(17)
Proposed Uses								
Residential	105 du	571	10	28	38	29	18	47
Café	713 sf	720	37	35	72	13	13	26
Internalization: 10%	-	(72)	(4)	(3)	(7)	(2)	(1)	(3)
Pass-By/Walk-in: 43%	-	(310)	(16)	(15)	(31)	(6)	(5)	(11)
Café Subtotal	-	338	17	17	34	5	7	12
PROPOSED USES SUBTOTAL		909	27	45	72	33	25	58
TDM Plan: 20%		(182)	(5)	(9)	(14)	(7)	(5)	(12)
PROPOSED USES TOTAL		727	22	36	58	26	20	46
NET NEW PROJECT VEHICLE TRIPS		**581**	**7**	**34**	**41**	**23**	**6**	**29**

Source: *ITE Trip Generation Manual, 10th Edition* (2018).
du = dwelling units
sf = square feet

[5] Menlo Park, City of. 2020a, op. cit.

[6] Altrans Transportation Management Association. 2019. *111 Independence Drive TDM Plan*. August.

[7] Menlo Park, City of. Ordinance No. 1026. Available online at: www.menlopark.org/DocumentCenter/View/12605/1026---GP-MU-District?bidId= (accessed September 28, 2020).

Project Trip Distribution

Project-generated vehicle traffic was distributed to the surrounding roadway network based on travel surveys and existing traffic patterns. Project-added traffic volumes at the study intersections are included as Attachment 1.

SCOPE OF ANALYSIS AND METHODOLOGY

The analysis scope and methodology, data collection methods, and study locations are described in this section. The analysis scope presented in this chapter and all methodologies herein were reviewed and approved by the City of Menlo Park.

Analysis Scenarios

Transportation conditions were evaluated in this study for the following five scenarios:

- **Existing Conditions** – This scenario represents the current transportation network and traffic conditions. Existing turning movement counts collected in March 2019 were obtained from City staff and grown by one percent to represent growth from 2019 to 2020 when the analysis was conducted.[8] Signal timing information was obtained from the City.

- **Near Term (2022) Conditions** – This scenario represents the transportation network and traffic conditions at the time of expected occupancy of the proposed project but does not include the proposed project. This scenario includes transportation network changes, background traffic, and traffic generated from approved development projects in the area.

- **Near Term (2022) Plus Project Conditions** – This scenario represents Near Term (2022) Conditions with the addition of project-generated traffic.

- **Cumulative (2040) Conditions** – This scenario represents the transportation network and traffic conditions over a longer-term horizon to account for the cumulative effects of transportation network changes as well as background growth and land use development within the project area. This scenario assumes Cumulative (2040) Conditions plus traffic generated from additional approved and reasonably foreseeable development projects in the area. This scenario does not include the proposed project. Volumes used for this scenario were estimated using the citywide traffic model and adjusted to reflect cumulative growth and development in the area.

- **Cumulative (2040) Plus Project Conditions** – This scenario represents Cumulative (2040) Conditions with the addition of project-generated traffic.

[8] The analysis relies on historical data with application of growth factors to estimate traffic volumes representing existing conditions because collection of new data was not recommended during the public health crisis, COVID-19. The COVID-19 pandemic has resulted in shelter-in-place orders across the Bay Area and travel demand is significantly reduced across all modes. Travel behaviors and travel patterns have also changed substantially as a result of multiple factors such as school closures, restrictions on business operations, and an increased amount of telecommuting.

Level of Service Analysis

Although the law required the transition to VMT as the metric for significance in environmental analysis, level of service (LOS) can still be considered for planning purposes and modifications to address deficiencies in compliance with the City's General Plan LOS standard may be achieved through conditions of approval. With the adoption of the updated TIA Guidelines the City Council indicated continued concern over roadway congestion and the TIA Guidelines continue to require analysis of LOS alongside VMT. This analysis is presented consistent with the City's TIA Guidelines, to evaluate compliance with local policies.

Roadway Segment Level of Service

C/CAG has adopted guidelines to evaluate the impacts of net new vehicle trips generated by new developments on the CMP network. These guidelines apply to all developments that generate 100 or more net new peak period vehicular trips on the CMP network and are subject to CEQA review. The proposed project would generate fewer than 100 net new peak period vehicular trips. Therefore, roadway segment level of service analysis is not required.

Intersection Level of Service

Level of service describes the operating conditions experienced by motorists. LOS is a qualitative measure of the effect of several factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. LOS A through LOS F covers the entire range of traffic operations that might occur. Motorists using a facility that operates at LOS A experience very little delay, while those using a facility that operates at LOS F will experience long delays. These conditions are generally described in Table 2.

Table 2: General Level of Service Definitions

Level of Service	Description
A	**Free Flow or Insignificant Delays:** Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.
B	**Stable Operation or Minimal Delays:** The ability to maneuver within the traffic stream is only slightly restricted, and control delay at signalized intersections are not significant.
C	**Stable Operation or Acceptable Delays:** The ability to maneuver and change lanes is somewhat restricted, and average travel speeds may be about 50 percent of the free flow speed.
D	**Approaching Unstable or Tolerable Delays:** Small increases in flow may cause substantial increases in delay and decreases in travel speed.
E	**Unstable Operation or Significant Delays:** Significant delays may occur and average travel speeds may be 33 percent or less of the free flow speed.
F	**Forced Flow or Excessive Delays:** Congestion, high delays, and extensive queuing occur at critical signalized intersections with urban street flow at extremely low speeds.

Source: *Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2016.

Signalized Intersections

Signalized intersection analysis was conducted using the operational methodology outlined in the Highway Capacity Manual (HCM) (Transportation Research Board, Washington, D.C., 2016), as operationalized by Vistro 2020[9]. The HCM 6th Edition procedure calculates a weighted average stop delay in seconds per vehicle at an intersection and assigns a level of service designation based on the delay. Table 3 presents the relationship of average delay to level of service at signalized intersections.

[9] Vistro is a traffic engineering software that allows creation of a transportation network model and applies industry standard methodologies to evaluate signalized and unsignalized intersections.

Table 3: Signalized Intersection Level of Service Definitions

Average Delay per Vehicle (Seconds)	Level of Service	Description of Traffic Conditions
≤10.0	A	Free flowing. Most vehicles do not have to stop.
>10.0 and ≤20.0	B	Minimal delays. Some vehicles have to stop, although waits are not bothersome.
>20.0 and ≤35.0	C	Acceptable delays. Significant numbers of vehicles have to stop because of steady, high traffic volumes. Still, many pass without stopping.
>35.0 and ≤55.0	D	Tolerable delays. Many vehicles have to stop. Drivers are aware of heavier traffic. Cars may have to wait through more than one red light. Queues begin to form, often on more than one approach.
>55.0 and ≤80.0	E	Significant delays. Cars may have to wait through more than one red light. Long queues form, sometimes on several approaches.
>80.0	F	Excessive delays. Intersection is jammed. Many cars have to wait through more than one red light, or more than 60 seconds. Traffic may back up into "up-stream" intersections.

Source: *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2016.

Unsignalized Intersections

Unsignalized intersection analysis was also conducted using the operational methodology outlined in the HCM, as operationalized by Vistro 2020. Table 5 presents the relationship of average delay to level of service for unsignalized intersections.

Table 4: Unsignalized Intersection Level of Service Definitions

Average Delay per Vehicle (Seconds)	Level of Service	Description of Traffic Conditions
≤10.0	A	Free flowing. Most vehicles do not have to stop.
>10.0 and ≤15.0	B	Minimal delays. Some vehicles have to stop, although waits are not bothersome.
>15.0 and ≤25.0	C	Acceptable delays. Significant numbers of vehicles have to stop because of steady, high traffic volumes. Still, many pass without stopping.
>25.0 and ≤35.0	D	Tolerable delays. Many vehicles have to stop. Drivers are aware of heavier traffic. Queues begin to form, often on more than one approach.
>35.0 and ≤50.0	E	Significant delays. Long queues form, sometimes on several approaches.
>50.0	F	Excessive delays. Intersection is jammed. Many cars have to wait more than 60 seconds. Traffic may back up into "up-stream" intersections.

Source: *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2016.

Study Intersections

Level of service was analyzed[10] at fifteen study intersections. The study locations are presented in Figure 1. The City of Menlo Park conducted traffic counts for the two peak periods, 7 AM to 9 AM and 4 PM to 6 PM, in March 2019. The peak hours at each location were identified in these counts and used in the operations analysis.

[10] Intersection operations are not a CEQA topic but are analyzed as a local requirement in compliance with the General Plan Circulation Element.

Study Intersections



The study intersections and associated jurisdiction are listed below.

1. Marsh Road & Bayfront Expressway/Haven Avenue (Local Approaches to State)
2. Marsh Road & US-101 NB Off-Ramp (State)
3. Marsh Road & US-101 SB Off-Ramp (State)
4. Marsh Road & Scott Drive (Menlo Park)
5. Marsh Road & Bay Road (Menlo Park)
6. Marsh Road & Middlefield Road (Atherton)
7. Chrysler Drive & Bayfront Expressway (Local Approaches to State)
8. Chrysler Drive & Constitution Drive (Menlo Park)
9. Chrysler Drive & Jefferson Drive (Menlo Park)
10. Chrysler Drive & Independence Drive (Menlo Park)
11. Chilco Street & Bayfront Expressway (Local Approaches to State)
12. Chilco Street & Constitution Drive (Menlo Park)
13. Willow Road & Bayfront Expressway (State)
14. University & Bayfront Expressway (State)
15. Marsh Road & Florence Street-Bohannon Drive (Menlo Park)

EXISTING CONDITIONS

The turning movement volumes for the 15 study intersections were acquired from the City's database, which reflects the 2019 counts. The turning movement volumes for the study intersection are provided as Attachment 1 and the existing lane configurations are provided as Attachment 2.

The level of service results for the study intersections during the existing AM and PM peak hours are shown in Table 5. The Vistro analysis outputs are provided as Attachment 3.

The intersections listed below operate at a LOS not meeting the City's LOS Standard during one or both peak hours. All other study intersections operate in compliance with the LOS standard under Existing Conditions.

- Intersection #1, Marsh Road and Bayfront Expressway (Local Approaches to State): AM
- Intersection #10, Chrysler Drive and Independence Drive (Menlo Park): AM
- Intersection #12, Chilco Street and Constitution Drive (Menlo Park): AM and PM
- Intersection #13, Willow Road and Bayfront Expressway (State): AM and PM
- Intersection #14, University Avenue and Bayfront Expressway (State): PM

Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant analysis was conducted at the unsignalized intersections. The intersection of Chilco Street and Constitution Drive (Intersection #12), which operates with all-way stop control under Existing Conditions, met the peak hour signal warrant during both the AM and PM peak hours. No other study unsignalized intersections met the peak hour signal warrant during either peak hour.

Table 5: Existing Conditions Level of Service

No.	Intersection	Control	Peak Hour	Existing		Meet General Plan Standard?
				Delay	LOS	
1	Marsh Road & Bayfront Expressway/Haven Avenue (Local Approaches to State)	Signal	AM	**56.9**	**E**	No
			PM	36.5	D	Yes
2	Marsh Road & US-101 NB Off-Ramp (State)	Signal	AM	15.8	B	N/A
			PM	13.3	B	N/A
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	18.1	B	N/A
			PM	17.0	B	N/A
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	18.5	B	Yes
			PM	15.3	B	Yes
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	19.7	B	Yes
			PM	18.6	B	Yes
6	Marsh Road & Middlefield Road (Atherton)	Signal	AM	35.0	D	N/A
			PM	37.9	D	N/A
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	8.4	A	Yes
			PM	13.1	B	Yes
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	50.6	D	Yes
			PM	28.0	C	Yes
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	18.6	C	Yes
			PM	19.0	C	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	**44.0**	**E**	No
			PM	17.9	C	Yes
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	12.7	B	Yes
			PM	16.0	B	Yes
12	Chilco Street & Constitution Drive (Menlo Park)	AWSC[3]	AM	**32.1**	**D**	No
			PM	**32.5**	**D**	No
13	Willow Road & Bayfront Expressway (State)	Signal	AM	**106.0**	**F**	N/A
			PM	**168.1**	**F**	N/A
14	University Avenue & Bayfront Expressway (State)	Signal	AM	11.4	B	N/A
			PM	**94.1**	**F**	N/A
15	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	35.3	D	Yes
			PM	34.6	C	Yes

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
AWSC - All-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
Bold text - Indicates intersections operate at LOS not meeting LOS standard.
N/A – Not applicable. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection does not meet signal warrant criteria under Existing Conditions during both peak hours.
[2] This intersection does not meet signal warrant criteria under Existing Conditions during both peak hours.
[3] This intersection meets signal warrant criteria under Existing Conditions during both peak hours.

NEAR TERM (2022) CONDITIONS

Near Term (2022) Conditions represent the transportation network and traffic conditions at the time of expected occupancy of the proposed project. This scenario includes transportation network changes, land use changes, and traffic generated from approved development projects in the area.

Programmed/Planned Transportation Facility Improvements

At the direction of the City of Menlo Park, the following programmed and planned improvements to study facilities were included in the Near Term (2022) Conditions analysis:

- **Chilco Street & Constitution Drive** was analyzed with a shared left-through-right lane in the northbound direction, a shared left-thru lane and right-turn lane in the southbound direction, a left turn lane and shared through-right lane in the eastbound direction, and with a left turn lane and shared through-right lane in the westbound direction. This intersection was evaluated with a signal in all future analysis scenarios.

The lane configurations under Near Term (2022) Conditions are provided as Attachment 2.

Additionally, Caltrain's Modernization Program is currently upgrading the Caltrain signal system for improved safety and performance and replacing diesel-powered trains with electric multiple-unit trains. Improvements are expected to finish prior to 2022 and result in improved frequency and speed of trains and increased ridership.

Development Projects

Approved development projects included in the Near Term (2022) Conditions analysis are detailed in Table 6. The Near Term scenario includes traffic that would be generated by these projects. The traffic volumes from approved projects were included in the Vistro analysis network. Additionally, a growth rate of one percent per year was applied to account for growth in regional traffic until the horizon year of 2022. The turning movement volumes under Near Term (2022) Conditions are provided as Attachment 1.

Table 6: Near Term (2022) Conditions Approved Projects

Project	Land Use	Size
Greenheart 1300 El Camino Real	Residential	183 units
	Office	203,000 square feet
	Retail/Personal Service	18,600 square feet
Menlo Gateway Constitution 100-155 Constitution Drive	Office	487,244 square feet
	Restaurant	7,420 square feet
Facebook Expansion Project 301-309 Constitution Drive	Office	450,400 square feet
	Hotel	200 rooms
Stanford 500 El Camino Real	Residential	215 units
	Office	143,900 square feet
	Retail	10,000 square feet
New Magnet High School 150 Jefferson Drive	High School	400 students
1275 El Camino Real	Residential	3 units
	Office	9,334 square feet
	Retail	589 square feet
1430 O'Brien Drive	Research & Development	46,608 square feet
	Fitness	10,223 square feet
	Cafe	7,652 square feet
1345 Willow Road	Residential	140 units

Source: City of Menlo Park, 2020.

Intersection Level of Service

Table 7 provides LOS results for the study intersections during the AM and PM peak hours under Near Term (2022) Conditions. The Vistro analysis outputs are provided as Attachment 3.

The intersections listed below would operate at a LOS exceeding the City's LOS standard during one or both peak hours. All other study intersections would operate in compliance with the LOS standard under Near Term (2022) Conditions.

- Intersection #1, Marsh Road and Bayfront Expressway/Haven Avenue (Local Approaches to State): AM
- Intersection #6, Marsh Road and Middlefield Road (Atherton): AM
- Intersection #8, Chrysler Drive and Constitution Drive (Menlo Park): AM
- Intersection #10, Chrysler Drive and Independence Drive (Menlo Park): AM

None of the unsignalized study intersections would meet the peak hour MUTCD signal warrant during either peak hour.

Table 7: Near Term (2022) Conditions Level of Service

No.	Intersection	Control	Peak Hour	Critical Approach	Near Term		Meet General Plan Standard?
					Delay	LOS	
1	Marsh Road & Bayfront Expressway/Haven Avenue (Local Approaches to State)	Signal	AM	N/A	**59.7**	**E**	No
				EB	**114.1**	**F**	
				WB	36.5	D	
			PM	N/A	37.4	D	Yes
2	Marsh Road & US-101 NB Off-Ramp (State)	Signal	AM	N/A	25.3	C	N/A
			PM	N/A	13.3	B	N/A
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	N/A	22.9	C	N/A
			PM	N/A	17.7	B	N/A
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	N/A	20.0	B	Yes
			PM	N/A	15.1	B	Yes
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	N/A	22.7	C	Yes
			PM	N/A	18.4	B	Yes
6	Marsh Road & Middlefield Road (Atherton)	Signal	AM	N/A	**73.8**	**E**	N/A
			PM	N/A	44.2	D	N/A
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	9.5	A	Yes
			PM	N/A	20.1	C	Yes
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**111.1**	**F**	No
				NB	24.2	C	
				SB	**176.1**	**F**	
				EB	**104.4**	**F**	
				WB	**56.7**	**E**	
			PM	N/A	39.8	D	Yes
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	23.2	C	Yes
			PM	N/A	20.1	C	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**69.3**	**F**	No
			PM	N/A	18.3	C	Yes
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	21.9	C	Yes
			PM	N/A	25.3	C	Yes
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	33.8	C	Yes
			PM	N/A	50.0	D	Yes
13	Willow Road & Bayfront Expressway (State)	Signal	AM	N/A	**193.1**	**F**	N/A
			PM	N/A	**180.9**	**F**	N/A
14	University & Bayfront Expressway (State)	Signal	AM	N/A	12.7	B	N/A
			PM	N/A	**113.1**	**F**	N/A
15	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	N/A	38.3	D	Yes
			PM	N/A	37.0	D	Yes

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
Bold text - Indicates intersections operate at LOS not meeting LOS standard.

N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection does not meet signal warrant criteria under Near Term Conditions during both peak hours.
[2] This intersection does not meet signal warrant criteria under Near Term Conditions during both peak hours.

CUMULATIVE (2040) CONDITIONS

Cumulative (2040) Conditions represent the transportation network and traffic conditions over a longer-term horizon to account for the cumulative effects of transportation network changes as well as background growth and land use development within the project area. Intersection geometry and signal changes are incorporated into this scenario and described in the Programmed/Planned Transportation Facility Improvements section. Development projects included in the Cumulative (2040) Conditions analysis are detailed in the Development Projects section.

Programmed/Planned Transportation Facility Improvements

The programmed/planned transportation facility improvements affecting the study intersections are the same as those identified under Near Term (2022) Conditions. The lane configurations for Cumulative (2040) Conditions are provided as Attachment 2.

The following bicycle network improvements were identified in the Comprehensive Bicycle Development Plan[11] for streets near the project site and are anticipated to be completed prior to 2040:

- Class II bike lanes are recommended on Marsh Road, which would connect to the existing bike path next to Bayfront Expressway. These proposed bike lanes would allow bicyclists to cross US 101 safely and access the bikeway network on the west side of the freeway.

- A Class I Connector Path is recommended on Independence Drive, which would connect the planned Class II bike lanes on Marsh Road and the existing Class II bike lanes on Constitution Drive. Because Independence Drive is one-way in the southbound direction off Marsh Road, a Class I off-street connection would allow bicyclists to travel counter-flow to traffic on this short one-way roadway segment. This bike path would provide bicyclists from the project site with safer access to the proposed bike lanes on Marsh Road.

- A new bicycle and pedestrian bridge over the Atherton Channel is recommended to extend the bike lanes and sidewalks on Haven Avenue to Marsh Road.

The Marsh Road bike lanes and Independence Drive Connector Path are identified as long-term projects. The Marsh Road bike lanes are also identified as proposed improvements in the San Mateo County Comprehensive Bicycle and Pedestrian Plan. The implementation timeline of these proposed improvements is unknown.

[11] Menlo Park Comprehensive Bicycle Development Plan (2005). Accessed online on July 30, 2020.

The following improvements for walking and biking are identified in the Transportation Master Plan [12]:

- The Haven Avenue Streetscape Project includes pedestrian crossing improvements to the Marsh Road-Haven Avenue-Bayfront Expressway intersection. Although this project is not in the immediate vicinity of the project site, it will improve the overall pedestrian network in the area east of US 101. The improvements include widened sidewalks, replacement of curb ramps to comply with Americans with Disabilities Act (ADA) standards, realigning with the existing crosswalk on the northwest (Haven Avenue) leg of the intersection, and improving the existing median to provide a crossing refuge island. Additionally, as adjacent land parcels are redeveloped, new sidewalks will be constructed on the street frontages, which will improve pedestrian facilities in the general vicinity of the project.

- Improvements to bicycle safety on Marsh Road from Bay Road to Scott Drive and from Independence Drive to Scott Drive include adding bike lanes and constructing a bicycle and pedestrian bridge over US 101. Class II Bike Lanes are proposed along both sections of Marsh Road.

- Improvements to pedestrian safety on Constitution Drive from Chrysler Drive to Chilco Street and on Jefferson Drive from Chrysler Drive to Constitution Drive include construction of sidewalks on both sides of the roadways.

- Enhancements to pedestrian and bicycle crossing along Bayfront Expressway, including high visibility pedestrian crossings along Bayfront Expressway at Chrysler Drive, Chilco Street, and Willow Road. Construction of a bicycle and pedestrian bridge is proposed over Bayfront Expressway between Chilco Street and Willow Road.

- Proposed multiuse pathways on Willow Road from Dumbarton Rail Corridor to Hamilton Avenue and at Facebook from Chilco Street to the proposed bicycle and pedestrian bridge over Bayfront Expressway.

- A new bicycle and pedestrian bridge over Bayfront Expressway, east of Chilco Street.

The following improvements to transit within the study area are identified in the Transportation Master Plan[13] and are anticipated to be completed prior to 2040:

- Allow buses to use existing right turn lane on Willow Road and O'Brien Drive for queue jump with transit signal priority (TSP) and implement peak hour left-turn restrictions at Willow Road and O'Brien Drive.

- Increase mobility along the Dumbarton Corridor by supporting the reactivation of the Dumbarton rail service between the East Bay and Peninsula.

[12] City of Menlo Park. 2017. City of Menlo Park Transportation Master Plan. https://menloparktmp.participate.online/project-map. Accessed on July 31, 2020.

[13] City of Menlo Park Transportation Master Plan (2017), https://menloparktmp.participate.online/project-map, Accessed July 31, 2020.

- Install shoulder-running peak hour bus lane on Bayfront Expressway and install TSP at signalized intersections.

- Increase the number of people traveling on Bayfront Expressway by removing traffic signals and converting a travel lane to a managed (toll) lane for carpools and buses. Implement the corridor with improved mixed flow and managed lane connections, including grade separations with revised access at University Avenue, Willow Road, Chilco Street, Marsh Road, and Chrysler Drive.

Caltrain's Modernization Program and related infrastructure improvements on the Caltrain corridor will also accommodate the California High-Speed Rail service as early as 2025[14].

SamTrans completed the El Camino Corridor Bus Rapid Transit Phasing Study in 2014 and is evaluating options to improve transit service along El Camino Real[15]. Recommendations include consolidating existing bus service along El Camino Real to improve reliability and frequency of routes. SamTrans will continue to work from this study to evaluate long-term transit vision for El Camino Real. Although the project is not in the immediate vicinity of the project site, it will improve transit service in the transportation network south of the project.

The implementation timeline of these proposed improvements is unknown. However, these are anticipated to be completed by 2040 and are therefore assumed in the Cumulative (2040) Conditions analysis.

Development Projects

The Cumulative scenario includes all approved projects incorporated into the Near-Term Conditions analysis, plus the cumulative development identified in Table 4.A of the EIR. The Cumulative (2040) Conditions traffic volumes includes traffic from these development projects and a growth rate of one percent per year was applied to account for growth in regional traffic until the horizon year of 2040. The turning movement volumes under Cumulative (2040) Conditions are provided As Attachment 1.

Intersection Level of Service

Table 8 provides LOS results for the study intersections during the AM and PM peak hours under Cumulative (2040) Conditions. Vistro output sheets are included as Attachment 3.

The intersections listed below would operate at a LOS exceeding the City's LOS standard during one or both peak hours. All other study intersections would operate in compliance with the LOS standard under Cumulative (2040) Conditions.

[14] Caltrain, Accessed Online July 31, 2020
https://www.caltrain.com/projectsplans/CaltrainModernization/BlendedSystem.html

[15] SamTrans El Camino Real Bus Rapid Transit Phasing Study, 2014; Accessed July 31, 2020
https://www.samtrans.com/Assets/_Planning/BRT/SamTrans+ECR+BRT+Phasing+Study.pdf

- Intersection #1, Marsh Road and Bayfront Expressway/Haven Avenue (Local Approaches to State): AM
- Intersection #7, Chrysler Drive and Bayfront Expressway (Local Approaches to State): PM
- Intersection #8, Chrysler Drive and Constitution Drive (Menlo Park): AM and PM
- Intersection #9, Chrysler Drive and Jefferson Drive (Menlo Park): AM and PM
- Intersection #10, Chrysler Drive and Independence Drive (Menlo Park): AM
- Intersection #11, Chilco Street and Bayfront Expressway (Local Approaches to State): AM and PM
- Intersection #12, Chilco Street and Constitution Drive (Menlo Park): AM and PM

Manual on Uniform Traffic Control Devices peak hour signal warrant analysis was conducted at the two unsignalized intersections. The intersection of Chrysler Drive and Jefferson Drive (Intersection #9) would meet the peak hour warrant during the PM peak hour and the intersection of Chrysler Drive and Independence Drive (Intersection #10) would meet the peak hour warrant during the AM peak hour.

Table 8: Cumulative (2040) Conditions Level of Service

No.	Intersection	Control	Peak Hour	Critical Approach	Cumulative		Meet General Plan Standard?
					Delay	LOS	
1	Marsh Road & Bayfront Expressway/Haven Avenue (Local Approaches to State)	Signal	AM	N/A	**100.5**	**F**	No
				EB	**169.3**	**F**	
				WB	**82.5**	**F**	
			PM	N/A	36.7	D	Yes
2	Marsh Road & US-101 NB Off-Ramp (State)	Signal	AM	N/A	34.2	C	N/A
			PM	N/A	17.2	B	N/A
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	N/A	36.4	D	N/A
			PM	N/A	40.3	D	N/A
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	N/A	32.9	C	Yes
			PM	N/A	22.9	C	Yes
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	N/A	28.6	C	Yes
			PM	N/A	19.9	B	Yes
6	Marsh Road & Middlefield Road (Atherton)	Signal	AM	N/A	**80.5**	**F**	N/A
			PM	N/A	53.0	D	N/A
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	11.4	B	Yes
			PM	N/A	**57.3**	**E**	No
				NB	**193.2**	**F**	
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**355.3**	**F**	No
				NB	40.4	D	
				SB	**114.6**	**F**	
				EB	**162.7**	**F**	
				WB	**1396.5**	**F**	
			PM	N/A	**224.8**	**F**	No
				NB	27.8	C	
				SB	**777.1**	**F**	
				EB	**97.4**	**F**	

Table 8: Cumulative (2040) Conditions Level of Service

No.	Intersection	Control	Peak Hour	Critical Approach	Cumulative		Meet General Plan Standard?
					Delay	LOS	
				WB	**396.7**	**F**	
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	**43.9**	**E**	No
			PM	N/A	**134.8**	**F**	No
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**285.6**	**F**	No
			PM	N/A	21.9	C	Yes
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**59.2**	**E**	No
				NB	**139.3**	**F**	
			PM	N/A	**67.3**	**E**	No
				NB	**257.2**	**F**	
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	**80.5**	**F**	No
				NB	**84.6**	**F**	
				SB	**88.5**	**F**	
				EB	34.3	C	
				WB	48.9	D	
			PM	N/A	**252.2**	**F**	No
				NB	**98.6**	**F**	
				SB	**211.6**	**F**	
				EB	**521.3**	**F**	
				WB	**113.7**	**F**	
13	Willow Road & Bayfront Expressway (State)	Signal	AM	N/A	**325.6**	**F**	N/A
			PM	N/A	**206.0**	**F**	N/A
14	University & Bayfront Expressway (State)	Signal	AM	N/A	**101.1**	**F**	N/A
			PM	N/A	**215.3**	**F**	N/A
15	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	N/A	39.9	D	Yes
			PM	N/A	46.1	D	Yes

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
Bold text - Indicates intersections operate at LOS not meeting LOS standard.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection meets signal warrant criteria under Cumulative Conditions during the PM peak hour.
[2] This intersection meets signal warrant criteria under Cumulative Conditions during the AM peak hour.

GENERAL PLAN LEVEL OF SERVICE POLICY STANDARDS

The following plans, ordinances, or policies are applicable to determine planning consistency and whether decision makers can make the necessary findings to issue entitlements, but are not a CEQA impact:

City of Menlo Park Level of Service Policy

Menlo Park General Plan requires that all City-controlled signalized intersections shall be maintained at level of service D or better during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and the intersections along Willow Road from Middlefield Road to US101.

Town of Atherton Level of Service Policy

The circulation element of the Town of Atherton General Plan 2019 provides minimum acceptable level of service standards for the Town facilities by roadway type. that the Town facilities shall be maintained by roadway type, LOS D for highways, LOS D for minor arterials, and LOS C for local roads.

One of the study intersections, Marsh Road and Middlefield Road, is located within the Town limit. Marsh Road and Middlefield Road are classified as part of the minor arterial system connecting between residential areas and other transportation facilities and serving as emergency and evacuation routes. The intersection of Marsh Road and Middlefield Road was analyzed based on the Town standard for minor arterial facility.

Caltrans Level of Service Policy

Caltrans establishes level of service standards at the transition between LOS C and LOS D on State facilities. For purposes of this study and a consistency with past studies in Menlo Park, the City's LOS standard is also applied to State-controlled intersections while Caltrans LOS standard still applies to ramp intersections.

City/County Association of Governments (C/CAG) Level of Service Policy

The LOS standards established by C/CAG vary based on geographic differences to prevent the Congestion Management Program (CMP) facilities to operate at level of service worse than currently anticipated in San Mateo CountyCMP 2019. The CMP intersection level of service standards were set based on the following considerations:

- LOS F for the intersections operating at LOS F.
- LOS E for the remaining intersections.

Although C/CAG monitors three of the study intersections for compliance with the CMP LOS standards, these intersections are also under Caltrans' jurisdiction. Given that City or Caltrans' standards are more stringent than the C/CAG's CMP standards, the analysis based on City or Caltrans' level of service standards would be more conservative.

Table 9 shows the jurisdiction and corresponding LOS standard applied for each study intersection.

Table 9: Level of Service Standard for the Study Intersections

No.	Intersection	Traffic Control	Jurisdiction	LOS Standard[2]
1	Marsh Road & Bayfront Expressway/Haven Avenue	Signal	State (local approach)	D
2	Marsh Road & US-101 NB Off-Ramp	Signal	State	C
3	Marsh Road & US-101 SB Off-Ramp	Signal	State	C
4	Marsh Road & Scott Drive	Signal	Menlo Park	D
5	Marsh Road & Bay Road	Signal	Menlo Park	D
6	Marsh Road & Middlefield Road	Signal	Atherton	D
7	Chrysler Drive & Bayfront Expressway	Signal	State (local approach)	D
8	Chrysler Drive & Constitution Drive	Signal	Menlo Park	D
9	Chrysler Drive & Jefferson Drive	TWSC	Menlo Park	C
10	Chrysler Drive & Independence Drive	TWSC	Menlo Park	C
11	Chilco Street & Bayfront Expressway	Signal	State (local approach)	D
12	Chilco Street & Constitution Drive	Signal[1]	Menlo Park	D
13	Willow Road & Bayfront Expressway	Signal	State	D
14	University Avenue & Bayfront Expressway	Signal	State	D
15	Marsh Road & Florence Street-Bohannon Drive	Signal	Menlo Park	D

Sources:
Menlo Park General Plan, 2016.
Town of Atherton General Plan, 2019.
C/CAG of San Mateo County Transportation Congestion Management Program, 2019.
Caltrans' Guide for the Preparation of Traffic Impact Studies, 2002.
Note:
TWSC - Two-way stop-controlled.
[1] Intersection was analyzed with all-way stop-controlled under Existing Conditions.
[2] City LOS standard is applied to State-controlled intersections except for ramp intersections for consistency with the prior studies in Menlo Park.

NEAR TERM (2022) PLUS PROJECT CONDITIONS

The following analysis is based on the City's TIA Guidelines for intersection level of service under Near Term (2022) Plus Project Conditions. The turning movement volumes under Near Term (2022) Plus Project Conditions are provided as Attachment 1 and the lane configurations are provided as Attachment 2. Table 10 provides LOS results for the study intersections during the AM and PM peak hours under Near Term (2022) Plus Project Conditions. The Vistro outputs are provided as Attachment 3.

The intersections listed below would operate at a LOS exceeding the City's LOS standard during one or both peak hours. All other study intersections would operate in compliance with the LOS standard under Near Term (2022) Plus Project Conditions.

- Intersection #1, Marsh Road and Bayfront Expressway (Local Approaches to State): AM
- Intersection #6, Marsh Road and Middlefield Road (Atherton): AM
- Intersection #8, Chrysler Drive and Constitution Drive (Menlo Park): AM
- Intersection #10, Chrysler Drive and Independence Drive (Menlo Park): AM
- Intersection #13, Willow Road and Bayfront Expressway (State): AM and PM

- Intersection #14, University Avenue and Bayfront Expressway (State): PM

None of the unsignalized study intersections would meet the MUTCD peak hour signal warrant during either peak hour under Near Term (2022) Plus Project Conditions.

Table 10: Near Term (2022) Plus Project Conditions Level of Service

No.	Intersection	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
1	Marsh Road & Bayfront Expressway/Haven Avenue (Local Approaches to State)	Signal	AM	N/A	**59.7**	**E**	**59.8**	**E**	No	No
				EB	**114.1**	**F**	**114.0**	**F**		
				WB	36.5	D	36.9	D		
			PM	N/A	37.4	D	37.6	D	Yes	No
2	Marsh Road & US-101 NB Off-Ramp(State)	Signal	AM	N/A	25.3	C	25.5	C	N/A	No
			PM	N/A	13.3	B	13.4	B	N/A	No
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	N/A	22.9	C	23.0	C	N/A	No
			PM	N/A	17.7	B	17.8	B	N/A	No
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	N/A	20.0	B	20.0	C	Yes	No
			PM	N/A	15.1	B	15.1	B	Yes	No
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	N/A	22.7	C	22.7	C	Yes	No
			PM	N/A	18.4	B	18.4	B	Yes	No
6	Marsh Road & Middlefield Road (Atherton)	Signal	AM	N/A	**73.8**	**E**	**74.2**	**E**	N/A	No
			PM	N/A	44.2	D	44.3	D	N/A	No
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	9.5	A	9.7	A	Yes	No
			PM	N/A	20.1	C	20.5	C	Yes	No
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**111.1**	**F**	**115.7**	**F**	No	Yes
				NB	24.2	C	24.5	C		
				SB	**176.1**	**F**	**194.7**	**F**		
				EB	**104.4**	**F**	**103.1**	**F**		
				WB	**56.7**	**E**	**56.7**	**E**		
			PM	N/A	39.8	D	41.3	D	Yes	No
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	23.2	C	24.3	C	Yes	No
			PM	N/A	20.1	C	20.5	C	Yes	No
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**69.3**	**F**	**100.4**	**F**	No	Yes
			PM	N/A	18.3	C	19.0	C	Yes	No
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	21.9	C	22.0	C	Yes	No
			PM	N/A	25.3	C	25.3	C	Yes	No
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	33.8	C	33.8	C	Yes	No
			PM	N/A	50.0	D	50.4	D	Yes	No
13	Willow Road & Bayfront Expressway (State)	Signal	AM	N/A	**193.1**	**F**	**193.2**	**F**	N/A	No
			PM	N/A	**180.9**	**F**	**180.8**	**F**	N/A	No
14	University Avenue & Bayfront Expressway (State)	Signal	AM	N/A	12.7	B	12.8	B	N/A	No
			PM	N/A	**113.1**	**F**	**113.2**	**F**	N/A	No
15	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	N/A	38.3	D	38.3	D	Yes	No
			PM	N/A	37.0	D	37.0	D	Yes	No

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
Bold text - Indicates intersections operate at LOS not meeting LOS standard.

N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection does not meet signal warrant criteria under Near Term or Near Term Plus Project Conditions during both peak hours.
[2] This intersection does not meet signal warrant criteria under Near Term or Near Term Plus Project Conditions during both peak hours.

The proposed project would increase the average critical movement delay by 0.8 seconds or more during at least one peak hour and cause two City-controlled intersections to be non-compliant with the TIA Guidelines under Near Term (2022) Plus Project Conditions. Followings are the recommended conditions of approval to improve intersection operations to pre-project conditions, or better, at locations the proposed project would cause to operate in non-compliance with the TIA Guidelines. Implementation of the recommended conditions of approval would not result in any changes to VMT associated with the proposed project and would not result in secondary effects or contribute to impacts under CEQA.

Chrysler Drive and Constitution Drive (Intersection #8)

Implementation of the proposed project would cause the Chrysler Drive and Constitution Drive intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended intersection modification to mitigate the plus project conditions F is to install one left-turn lane on westbound Chrysler Drive and convert the shared left/through/right lane to shared through/right lane resulting in having one left-turn lane and one shared through/right lane in this direction. The excessive delay on southbound Constitution Drive would require installation of a right-turn lane and conversion of the shared through/right lane to through lane resulting in having one left-turn lane, one through lane, and one right-turn lane in this direction. The recommended changes would require a widening to accommodate the lane modifications on westbound Chrysler Drive and on southbound Constitution Drive and would potentially require acquisition of additional right-of-way. This may require traffic signal modification if traffic signal poles need to be replaced due to the widening. The project is required to pay traffic impact fees (TIF) according to the current TIF schedule. While the improvements to the westbound approach are included in the City's TIF program, the improvements on the other approaches are beyond those in the TIF program and payment of the TIF would not entirely address the change to LOS as a result of project traffic.

With implementation of these intersection modifications, the intersection would be in compliance with LOS standard and address the proposed project's share of the non-compliant operation.

Chrysler Drive and Independence Drive (Intersection #10)

Implementation of the proposed project would cause the Chrysler Drive and Independence Drive intersection to operate in non-compliance with the TIA Guidelines under Near Term (2022) Plus Project Conditions. The proposed project would cause this City-controlled intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended intersection modification for this location is to install a stop control for both approaches of Chrysler Drive, thereby converting the intersection from a two-way stop control to an all-way stop control. The intersection of Chrysler Drive and Independence Drive would not meet the

peak hour signal warrant based on MUTCD. A conversion from side-street stop control to all-way stop control would reduce the average vehicle delay on southbound Independence Drive.

Alternatively, the City's Transportation Master Plan identifies installation of a traffic signal as a future improvement at the intersection of Chrysler Drive and Independence Drive. If additional traffic studies indicate a traffic signal is warranted in compliance with MUTCD, the City may choose to install a signal. This improvement is in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule.

With implementation of these intersection modifications, the intersection would be in compliance with LOS standard and address the proposed project's share of the non-compliant operation.

Table 11 provides results for the intersection LOS operations with the improvements during the AM and PM peak hours under Near Term (2022) Plus Project Conditions. The Vistro outputs are provided in Attachment 3.

Table 11: Near Term (2022) Plus Project Conditions with Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Near Term		Near Term Plus Project		Near Term Plus Project with Improvements		Meet General Plan Standard?[2]
					Delay	LOS	Delay	LOS	Delay	LOS	
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**111.1**	**F**	**115.7**	**F**	31.0	C	Yes
				NB	24.2	C	24.5	C	17.5	B	
				SB	**176.1**	**F**	**194.7**	**F**	34.5	C	
				EB	**104.4**	**F**	**103.1**	**F**	30.4	C	
				WB	**56.7**	**E**	**56.7**	**E**	39.9	D	
			PM	N/A	39.8	D	41.3	D	33.2	C	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[1]	AM	N/A	**69.3**	**F**	**100.4**	**F**	14.9	B	Yes
			PM	N/A	18.3	C	19.0	C	11.1	B	Yes

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
Bold text - Indicates intersections operate at LOS not meeting LOS standard.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards.
[1] This intersection does not meet signal warrant criteria under Near Term or Near Term Plus Project Conditions during both peak hours. The intersection operates with all-way stop-control with the improvements.
[2] Indicates the General Plan compliance for the intersection LOS operations under Near Term (2022) Plus Project Conditions with improvements.

CUMULATIVE (2040) PLUS PROJECT CONDITIONS.

The following analysis is based on the City's TIA Guidelines for intersection level of service under Cumulative (2040) Plus Project Conditions.

The turning movement volumes under Cumulative (2040) Plus Project Conditions are provided as Attachment 1 and the lane configurations are provided as Attachment 2.

Table 12 provides LOS results for the study intersections during the AM and PM peak hours under Cumulative (2040) Plus Project Conditions. The Vistro outputs are included in Attachment 3.

The intersections listed below would operate at a LOS exceeding the City's LOS standard during one or both peak hours. All other study intersections would operate in compliance with the LOS standard under Cumulative (2040) Plus Project Conditions.

- Intersection #1, Marsh Road and Bayfront Expressway/Haven Avenue (Local Approaches to State): AM
- Intersection #6, Marsh Road and Middlefield Road (Atherton): AM
- Intersection #7, Chrysler Drive and Bayfront Expressway (Local Approaches to State): PM
- Intersection #8, Chrysler Drive and Constitution Drive (Menlo Park): AM and PM
- Intersection #9, Chrysler Drive and Jefferson Drive (Menlo Park): AM and PM
- Intersection #10, Chrysler Drive and Independence Drive (Menlo Park): AM
- Intersection #11, Chilco Street and Bayfront Expressway (Local Approaches to State): AM and PM
- Intersection #12, Chilco Street and Constitution Drive (Menlo Park): AM and PM
- Intersection #13, Willow Road and Bayfront Expressway (State): AM and PM
- Intersection #14, University Avenue and Bayfront Expressway (State): AM and PM

The intersection of Chrysler Drive and Independence Drive (Intersection #10) would meet the MUTCD peak hour signal warrant during the AM peak hour and the intersection of Chrysler Drive and Jefferson Drive (Intersection #9) would meet the MUTCD peak hour signal warrant during the PM peak hour.

Table 12: Cumulative (2040) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
1	Marsh Road& Bayfront Expressway/Haven Avenue (Local Approaches to State)	Signal	AM	N/A	**100.5**	**F**	**101.8**	**E**	No	Yes
				EB	**169.3**	**F**	**169.2**	**F**		
				WB	**82.5**	**F**	**85.1**	**F**		
			PM	N/A	36.7	D	36.9	D	Yes	No
2	Marsh Road & US-101 NB Off-Ramp (State)	Signal	AM	N/A	34.2	C	34.5	C	N/A	No
			PM	N/A	17.2	B	17.5	B	N/A	No
3	Marsh Road & US-101 SB Off-Ramp (State)	Signal	AM	N/A	36.4	D	36.7	D	N/A	No
			PM	N/A	40.3	D	41.1	D	N/A	No
4	Marsh Road & Scott Drive (Menlo Park)	Signal	AM	N/A	32.9	C	32.9	C	Yes	No
			PM	N/A	22.9	C	22.9	C	Yes	No
5	Marsh Road & Bay Road (Menlo Park)	Signal	AM	N/A	28.6	C	28.6	C	Yes	No
			PM	N/A	19.9	B	19.9	B	Yes	No
6		Signal	AM	N/A	**80.5**	**F**	**81.0**	**F**	N/A	No

Table 12: Cumulative (2040) Plus Project Conditions Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Meet General Plan Standard?	Non-Compliant with TIA Guidelines?
					Delay	LOS	Delay	LOS		
	Marsh Road & Middlefield Road (Atherton)		PM	N/A	53.0	D	53.4	D	N/A	No
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	11.4	B	11.9	B	Yes	No
			PM	N/A	**57.3**	**E**	**58.4**	**E**	No	Yes
				NB	**193.2**	**F**	**197.0**	**F**		
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**355.3**	**F**	**360.1**	**F**	No	Yes
				NB	40.4	D	40.7	D		
				SB	**114.6**	**F**	**121.7**	**F**		
				EB	**162.7**	**F**	**168.6**	**F**		
				WB	**1396.5**	**F**	**1428.4**	**F**		
			PM	N/A	**224.8**	**F**	**232.3**	**F**	No	Yes
				NB	27.8	C	28.0	C		
				SB	**777.1**	**F**	**808.2**	**F**		
				EB	**97.4**	**F**	**97.9**	**F**		
				WB	**396.7**	**F**	**398.9**	**F**		
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	**43.9**	**E**	**46.7**	**E**	No	Yes
			PM	N/A	**134.8**	**F**	**141.0**	**F**	No	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**285.6**	**F**	**371.2**	**F**	No	Yes
			PM	N/A	21.9	C	23.0	C	Yes	No
11	Chilco Street & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	**59.2**	**E**	**59.2**	**E**	No	No
				NB	**139.3**	**F**	**139.4**	**F**		
			PM	N/A	**67.3**	**E**	**67.2**	**E**	No	No
				NB	**257.2**	**F**	**257.2**	**F**		
12	Chilco Street & Constitution Drive (Menlo Park)	Signal	AM	N/A	**80.5**	**F**	**80.4**	**F**	No	No
				NB	**84.6**	**F**	**84.6**	**F**		
				SB	**88.5**	**F**	**88.6**	**F**		
				EB	34.3	C	34.2	C		
				WB	48.9	D	48.9	D		
			PM	N/A	**252.2**	**F**	**252.2**	**F**	No	No
				NB	**98.6**	**F**	**98.6**	**F**		
				SB	**211.6**	**F**	**211.6**	**F**		
				EB	**521.3**	**F**	**521.3**	**F**		
				WB	**113.7**	**F**	**113.7**	**F**		
13	Willow Road & Bayfront Expressway (State)	Signal	AM	N/A	**325.6**	**F**	**325.5**	**F**	N/A	No
			PM	N/A	**206.0**	**F**	**206.3**	**F**	N/A	No
14	University Avenue & Bayfront Expressway (State)	Signal	AM	N/A	**101.1**	**F**	**101.0**	**F**	N/A	No
			PM	N/A	**215.3**	**F**	**215.2**	**F**	N/A	No
15	Marsh Road & Florence Street-Bohannon Drive (Menlo Park)	Signal	AM	N/A	39.9	D	40.0	D	Yes	No
			PM	N/A	46.1	D	46.1	D	Yes	No

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.
Bold text - Indicates intersections operate at LOS not meeting LOS standard.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards. The "General Plan Standard" information is only relevant where the City's LOS policy standards apply.
[1] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the PM peak hour.

[2] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the AM peak hours .

The proposed project would increase average critical movement delay by 0.8 seconds or more during at least one peak hour and cause five intersections to be non-compliant with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. Followings are the recommended conditions of approval to improve intersection operations to pre-project conditions, or better, at locations the proposed project would cause to operate in non-compliance with the TIA Guidelines. Implementation of the recommended conditions of approval would not result in any changes to VMT associated with the proposed project and would not result in secondary effects or contribute to impacts under CEQA.

Marsh Road and Bayfront Expressway/Haven Avenue (Intersection #1)

Implementation of the proposed project would cause the Marsh Road and Bayfront Expressway/Haven Avenue intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM peak hour.

The recommended modification is to restripe the through lane on Haven Avenue to a shared through/right lane resulting in having one shared left/through lane, one shared through/right lane, and one right-turn lane. This improvement is in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule.

With implementation of these intersection modifications, the intersection would operate at or better than Cumulative (2040) Conditions and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement critical delay at the intersection by such that the increase becomes less than 0.8 seconds or more during the AM peak hour.

Chrysler Drive and Bayfront Expressway (Intersection #7)

Implementation of the proposed project would cause the Chrysler Drive and Bayfront Expressway intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the PM peak hour.

The recommended modification is to convert the existing right-turn lane on Chrysler Drive to shared left/right-turn lane resulting in having two left-turn lanes and one shared left/right-turn lane in this direction. Since the intersection is located under Caltrans jurisdiction, the recommended modification would be subject to Caltrans's approval and the implementation cannot be guaranteed.

With implementation of these intersection modifications, the intersection would be in compliance with LOS standard and address the proposed project's share of the non-compliant operation.

Chrysler Drive and Constitution Drive (Intersection #8)

Implementation of the proposed project would cause the Chrysler Drive and Constitution Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus

Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM and PM peak hour.

The recommended modification is to install left-turn lane on westbound Chrysler Drive and convert the shared left/through/right to a shared through/right lane resulting in having one left-turn lane and one shared through/right lane in this direction. The excessive delays on southbound Constitution Drive would require an installation of right-turn lane and a conversion of the shared through/right lane to through lane resulting in having one left-turn lane, one through lane, and one right-turn lane. The northbound Constitution Drive would require an installation of right-turn lane and a conversion of the shared left/through/right lane to shared left/through lane resulting in having one shared left/through lane and one right-turn lane. The recommended mitigation on lane configurations would require a widening of westbound Chrysler Drive and a widening of Constitution Drive on both sides of the intersection and consequently, would potentially require acquisition of additional right of way. This may also require traffic signal modification if poles need to be replaced due to the widening. The project is required to pay traffic impact fees according to the current TIF schedule. While the improvements to the westbound approach are included in the City's TIF program, the improvement's on the other approaches are beyond those in the TIF program and payment of the TIF would not entirely address the change to LOS as a result of project traffic.

With implementation of these intersection modifications, the intersection would operate at or better than Cumulative (2040) Conditions and would be in compliance with the TIA Guidelines by reducing the increase in the average critical movement delay at the intersection by such that the increase becomes less than 0.8 seconds during the AM and PM peak hours.

Chrysler Drive and Jefferson Drive (Intersection #9)

Implementation of the proposed project would cause the Chrysler Drive and Jefferson Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 seconds or greater during the AM and PM peak hour.

The recommended modification is to install a traffic signal and convert the shared left/right lane to one left-turn lane and one right-turn lane on northbound Jefferson Drive to operate at level of service compliance with the LOS standard. The installation of a traffic signal is consistent with the City's Transportation Master Plan, which identifies traffic signal installation as a future improvement at the intersection of Chrysler Drive and Jefferson Drive. This improvement is also in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule.

With implementation of these intersection modifications, the intersection would be in compliance with LOS standard and address the project's share of the non-compliant operation.

Chrysler Drive and Independence Drive (Intersection #10)

Implementation of the proposed project would cause the Chrysler Drive and Independence Drive intersection to operate in non-compliance with the TIA Guidelines under Cumulative (2040) Plus Project Conditions. The proposed project would cause this intersection to experience an increase in average critical movement delay of 0.8 second or greater during the AM peak hour.

The recommended modification to bring this intersection back to pre-project conditions and operate in compliance with the TIA Guidelines is to install a traffic signal. The City's Transportation Master Plan identifies traffic signal installation as a future improvement at the intersection of Chrysler Drive and Independence Drive. This improvement is also in the City's TIF program and the project is required to pay traffic impact fees according to the City's current TIF schedule.

With implementation of these intersection modifications, the intersection would be in compliance with LOS standard and address the project's share of the non-compliant operation.

Table 13 provides results for the intersection LOS operations with the improvements during the AM and PM peak hours under Cumulative (2040) Plus Project Conditions. The Vistro outputs are provided in Attachment 3.

Table 13: Cumulative (2040) Plus Project Conditions with Improvements Level of Service

No.	Intersection (Jurisdiction)	Control	Peak Hour	Critical Approach	Cumulative		Cumulative Plus Project		Cumulative Plus Project with Improvements		Meet General Plan Standard?[3]
					Delay	LOS	Delay	LOS	Delay	LOS	
1	Marsh Road& Bayfront Expressway/Haven Avenue (Local Approaches to State)	Signal	AM	N/A	**100.5**	**F**	**101.8**	**F**	**78.2**	**E**	No
				EB	**169.3**	**F**	**169.2**	**F**	**84.1**	**F**	
				WB	**82.5**	**F**	**85.1**	**F**	**84.8**	**F**	
			PM	N/A	36.7	D	36.9	D	38.0	D	Yes
7	Chrysler Drive & Bayfront Expressway (Local Approaches to State)	Signal	AM	N/A	11.4	B	11.9	B	11.0	B	Yes
			PM	N/A	**57.3**	**E**	**58.4**	**E**	24.4	C	Yes
				NB	**193.2**	**F**	**197.0**	**F**	47.7	D	
8	Chrysler Drive & Constitution Drive (Menlo Park)	Signal	AM	N/A	**355.3**	**F**	**360.1**	**F**	45.6	D	Yes
				NB	40.4	D	40.7	D	40.7	D	
				SB	**114.6**	**F**	**121.7**	**F**	**59.7**	**E**	
				EB	**162.7**	**F**	**168.6**	**F**	36.9	D	
				WB	**1396.5**	**F**	**1428.4**	**F**	45.4	D	
			PM	N/A	**224.8**	**F**	**232.3**	**F**	**121.6**	**F**	No
				NB	27.8	C	28.0	C	28.0	C	
				SB	**777.1**	**F**	**808.2**	**F**	**421.7**	**F**	
				EB	**97.4**	**F**	**97.9**	**F**	**83.6**	**F**	
				WB	**396.7**	**F**	**398.9**	**F**	**81.1**	**F**	
9	Chrysler Drive & Jefferson Drive (Menlo Park)	TWSC[1]	AM	N/A	**43.9**	**E**	**46.7**	**E**	24.4	C	Yes
			PM	N/A	**134.8**	**F**	**141.0**	**F**	48.1	D	Yes
10	Chrysler Drive & Independence Drive (Menlo Park)	TWSC[2]	AM	N/A	**285.6**	**F**	**371.2**	**F**	13.5	B	Yes
			PM	N/A	21.9	C	23.0	C	6.1	A	Yes

Notes:
TWSC - Two-way stop-controlled. Delay and LOS for the worst movement is reported for unsignalized intersections.

Bold text - Indicates intersections operate at LOS not meeting LOS standard.
N/A = Not applicable. The "Critical Approach" information is only relevant where the proposed project would increase delay per the LOS policy standards.
[1] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the PM peak hour. The intersection is signalized with the improvements.
[2] This intersection meets signal warrant criteria under Cumulative and Cumulative Plus Project Conditions during the AM peak hour. The intersection is signalized with the improvements.
[3] Indicates the General Plan compliance for the intersection LOS operations under Near Term (2022) Plus Project Conditions with improvements..

Transportation Impact Analysis Attachments

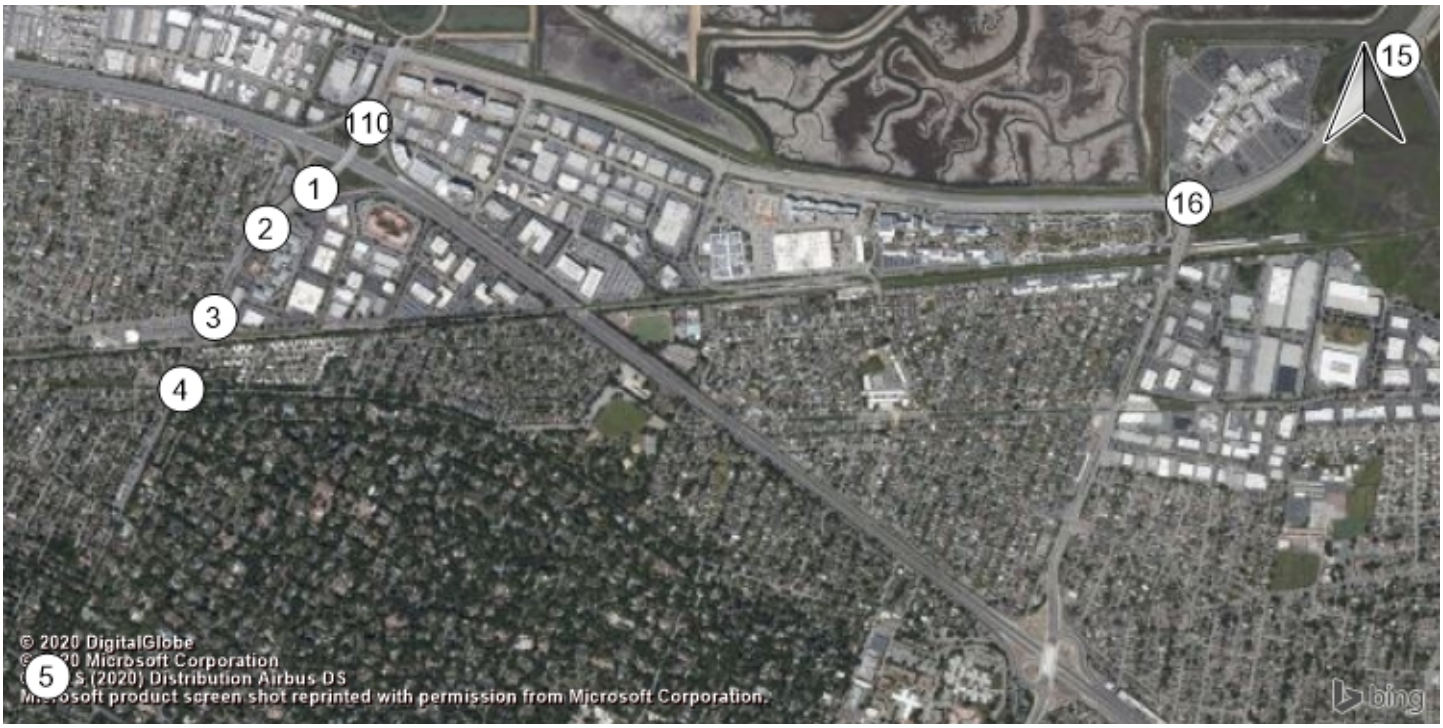
Attachment 1. Turning Movement Volumes

Attachment 2. Intersection Lane Configurations

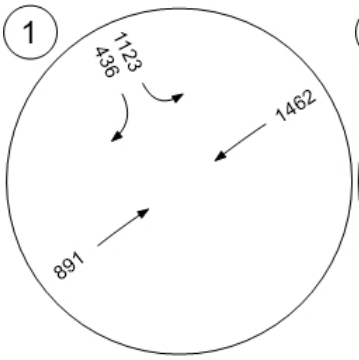
Attachment 3. Intersection Level of Service Results

Attachment 1. Turning Movement Volumes – All Scenarios

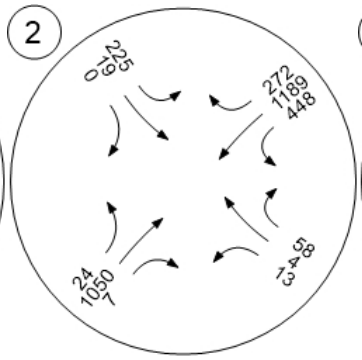
Traffic Volume - Future Total Volume



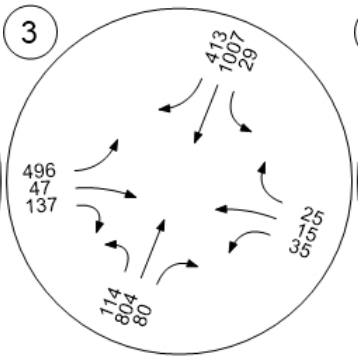
Marsh Rd (SR 84)/US 101 S



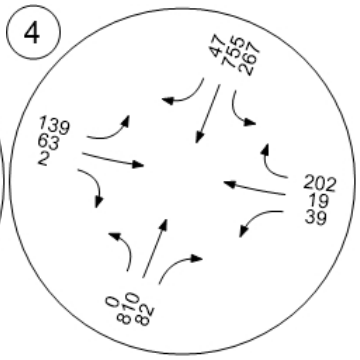
Marsh Rd/Rolison Rd-Scott D



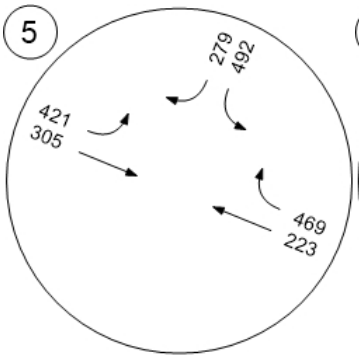
Marsh Rd/Florence St-Bohan



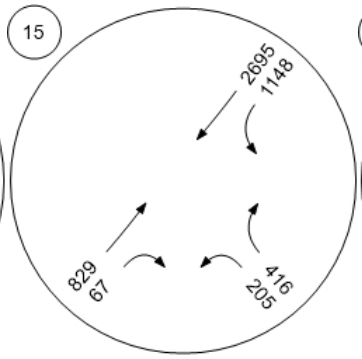
Marsh Rd/Bay Rd



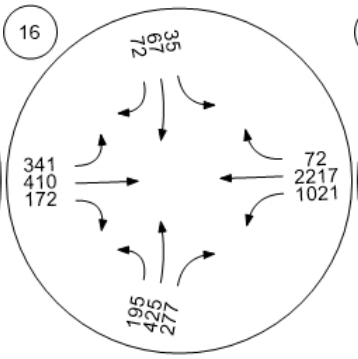
Middlefield Rd/Marsh Rd



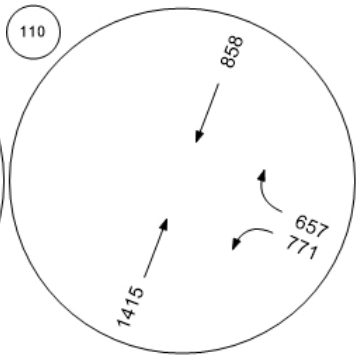
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



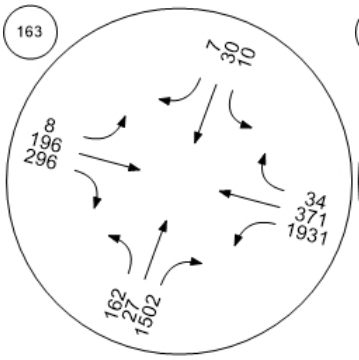
Marsh Road and US 101 NB



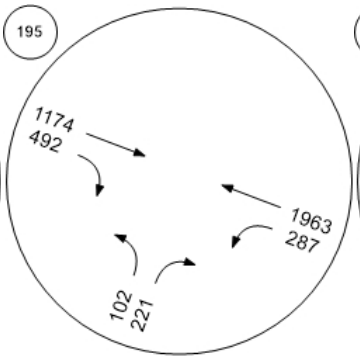
Traffic Volume - Future Total Volume



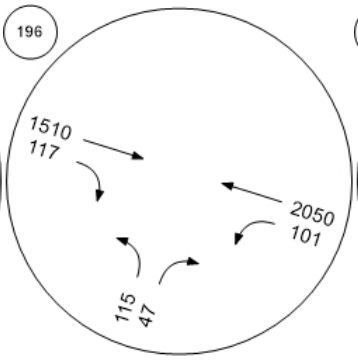
Bayfront Expy/Marsh Rd



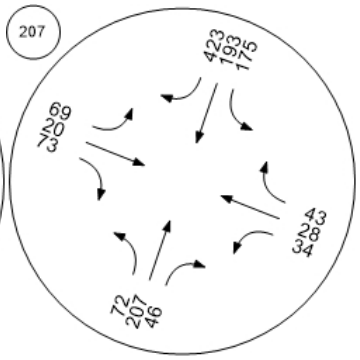
Bayfront Expy/Chilco St



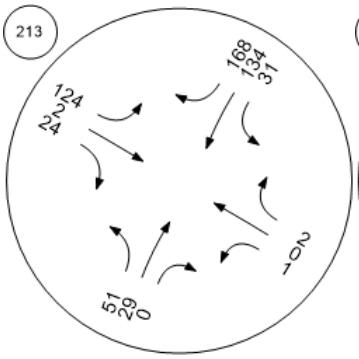
Bayfront Expy/Chrysler Drive



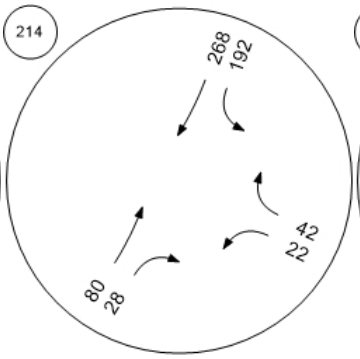
Chilco St/Constitution Dr



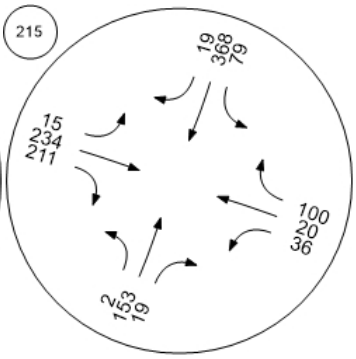
Chrysler Dr/Independence Dr



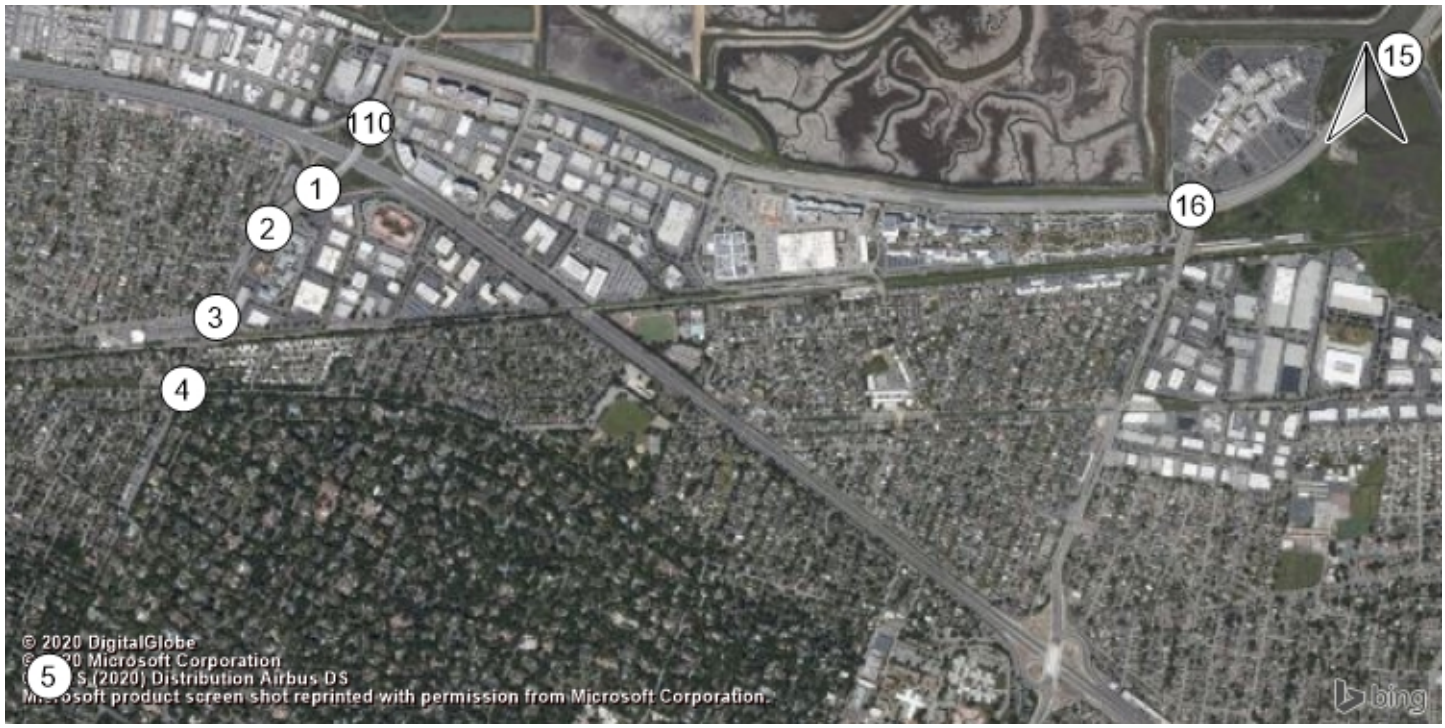
Chrysler Dr/Jefferson Dr



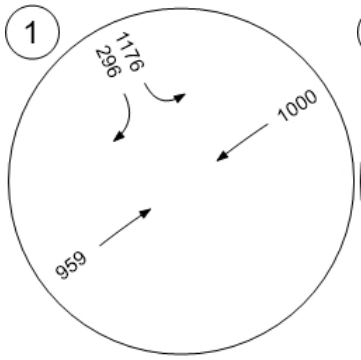
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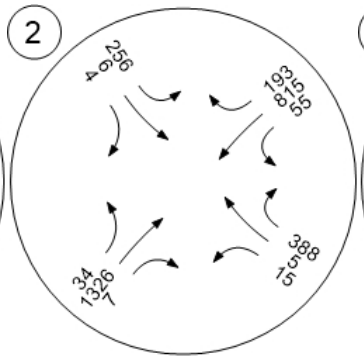
Traffic Volume - Future Total Volume



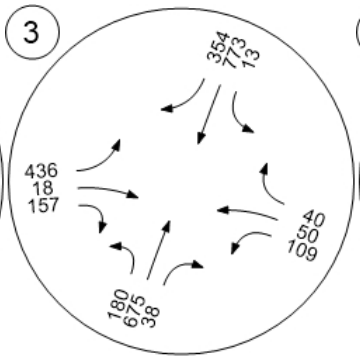
Marsh Rd (SR 84)/US 101 S



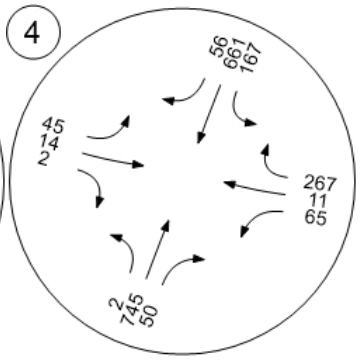
Marsh Rd/Rolison Rd-Scott D



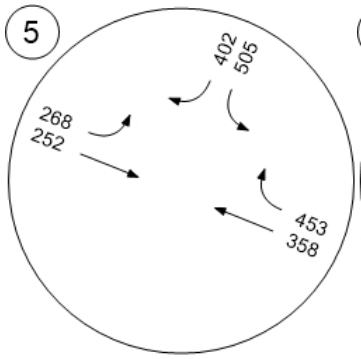
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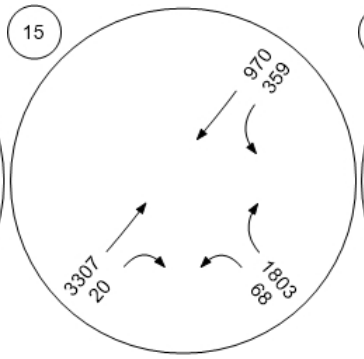
Marsh Rd/Bay Rd



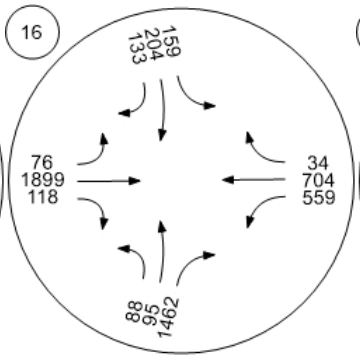
Middlefield Rd/Marsh Rd



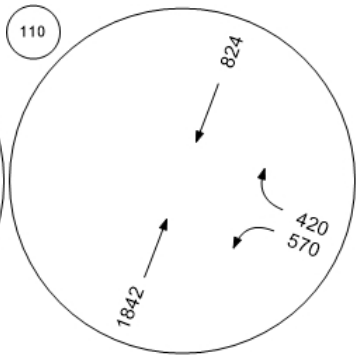
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



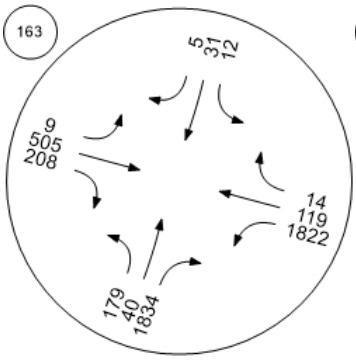
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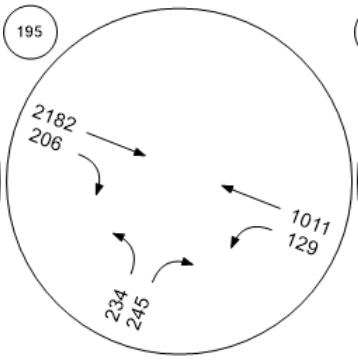
Traffic Volume - Future Total Volume



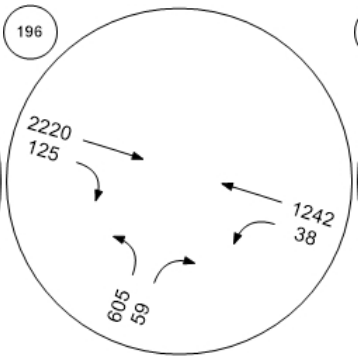
Bayfront Expy/Marsh Rd



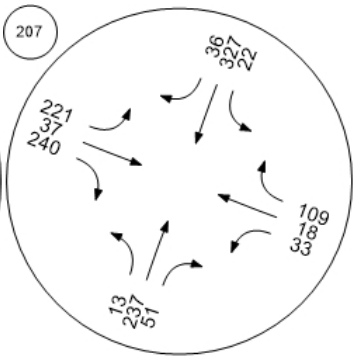
Bayfront Expy/Chilco St



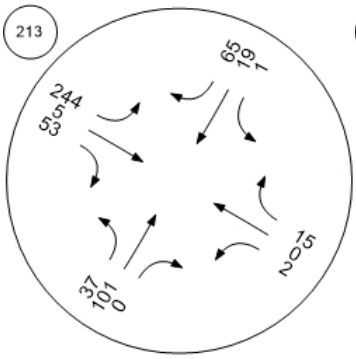
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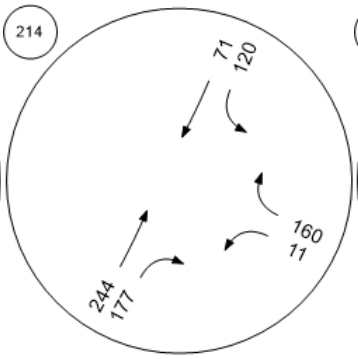
Chilco St/Constitution Dr



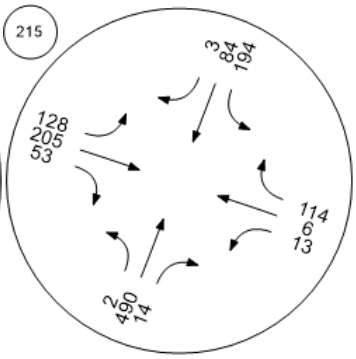
Chrysler Dr/Independence Dr



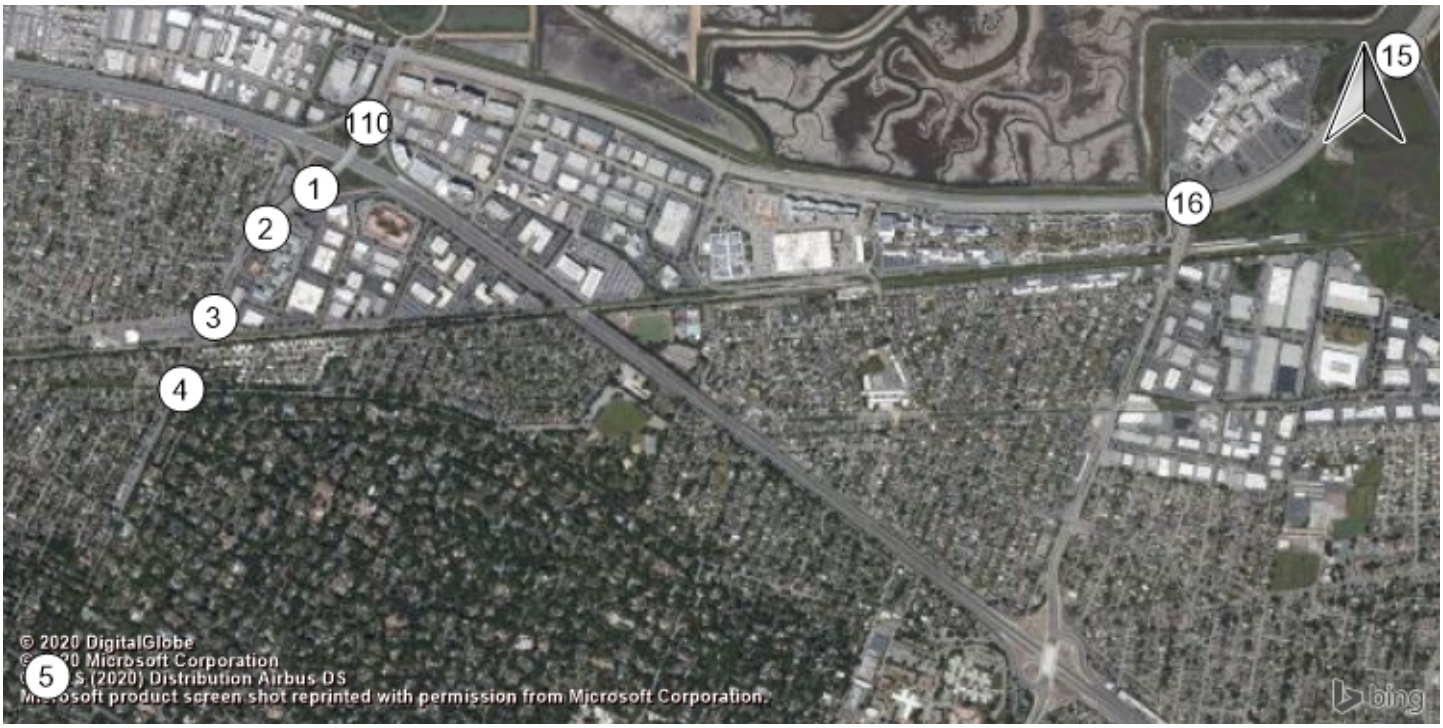
Chrysler Dr/Jefferson Dr



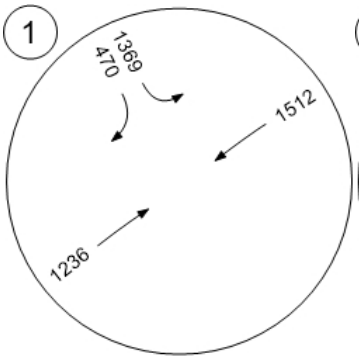
Chrysler Dr/Constitution Dr



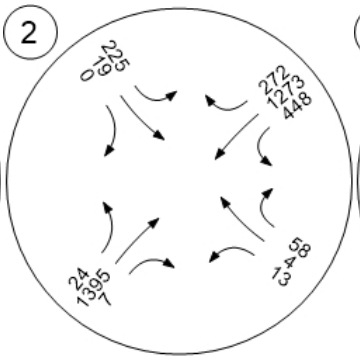
Traffic Volume - Future Total Volume



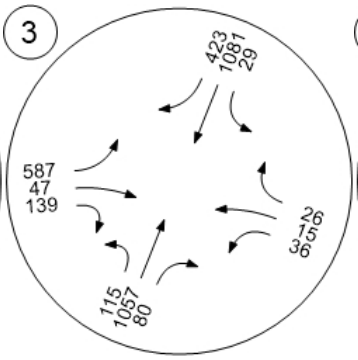
Marsh Rd (SR 84)/US 101 S



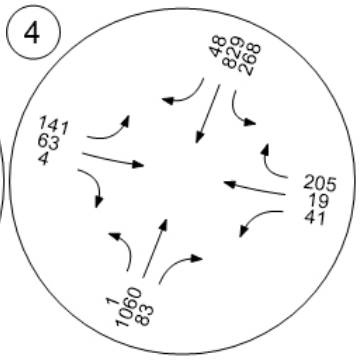
Marsh Rd/Rolison Rd-Scott D



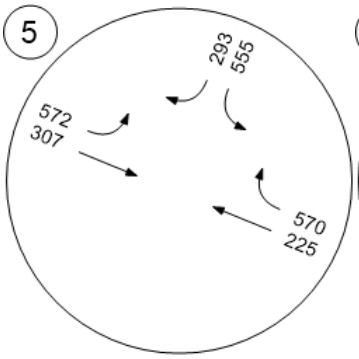
Marsh Rd/Florence St-Bohan



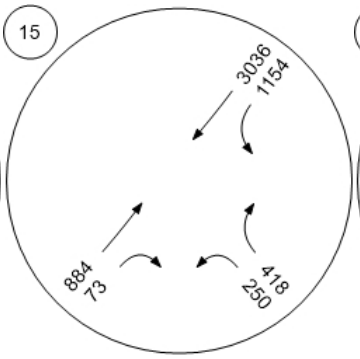
Marsh Rd/Bay Rd



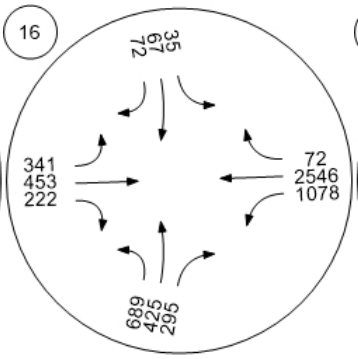
Middlefield Rd/Marsh Rd



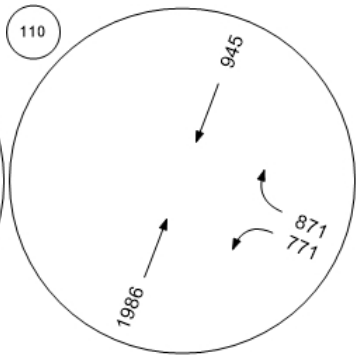
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



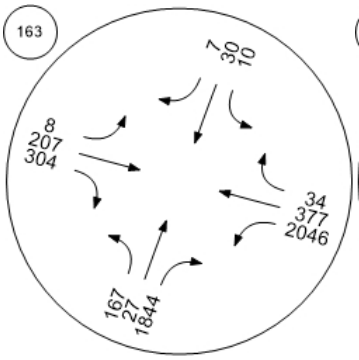
Marsh Road and US 101 NB



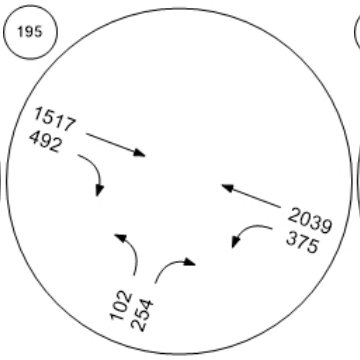
Traffic Volume - Future Total Volume



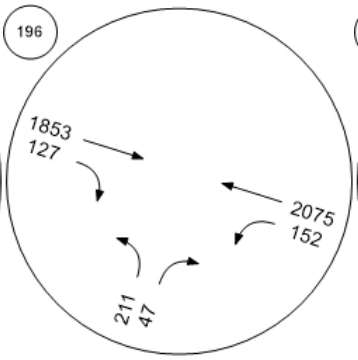
Bayfront Expy/Marsh Rd



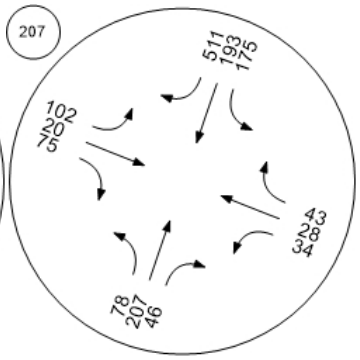
Bayfront Expy/Chilco St



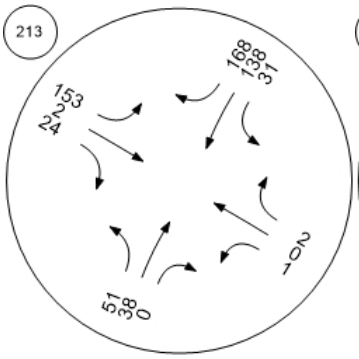
Bayfront Expy/Chrysler Drive



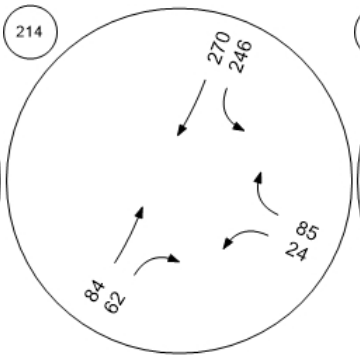
Chilco St/Constitution Dr



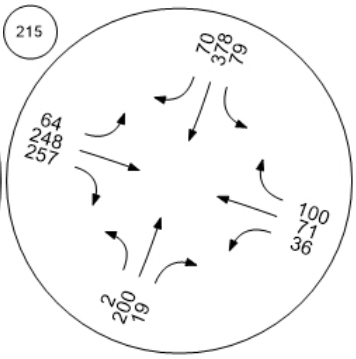
Chrysler Dr/Independence Dr



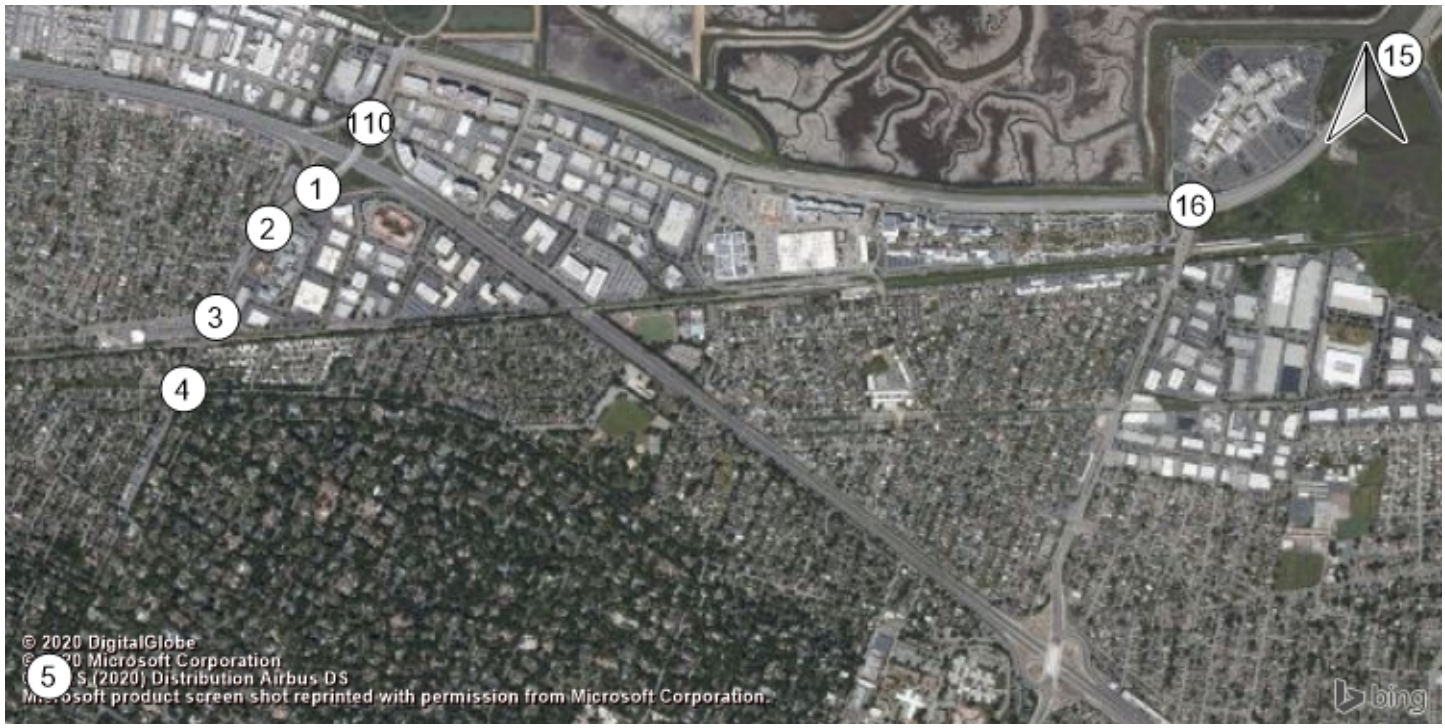
Chrysler Dr/Jefferson Dr



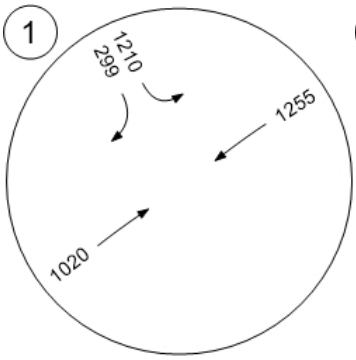
Chrysler Dr/Constitution Dr



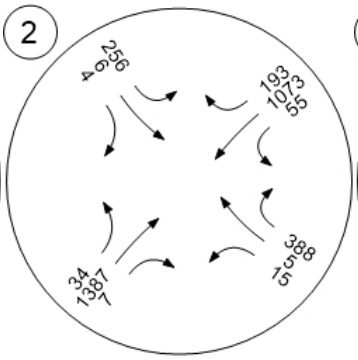
Traffic Volume - Future Total Volume



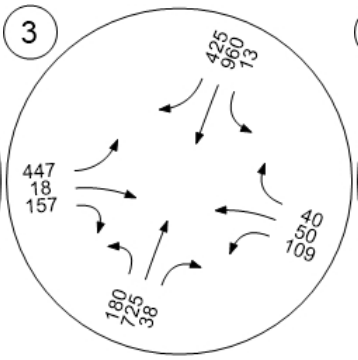
Marsh Rd (SR 84)/US 101 S



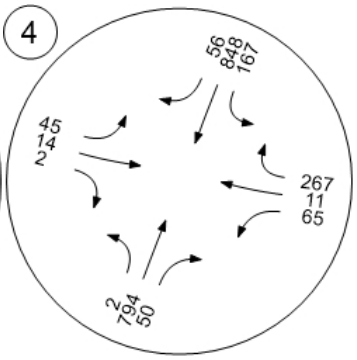
Marsh Rd/Rolison Rd-Scott D



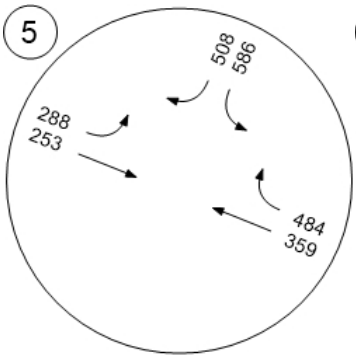
Marsh Rd/Florence St-Bohan



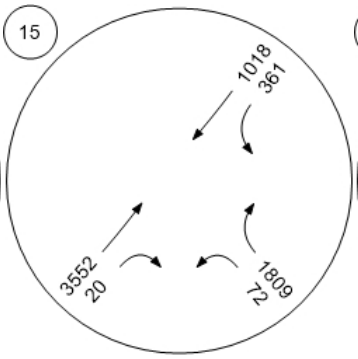
Marsh Rd/Bay Rd



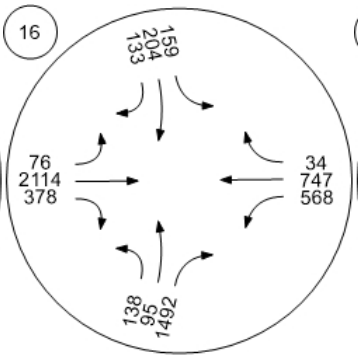
Middlefield Rd/Marsh Rd



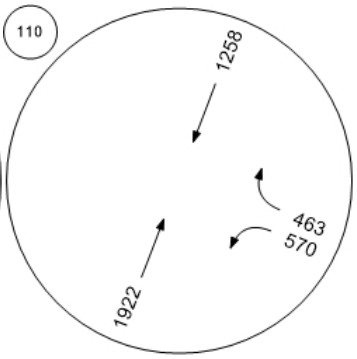
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



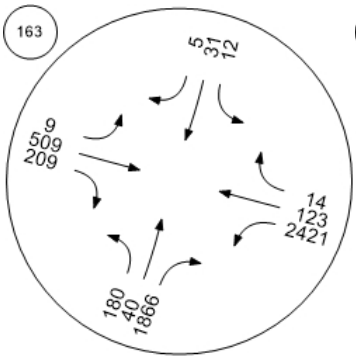
Marsh Road/101 NB Ramps



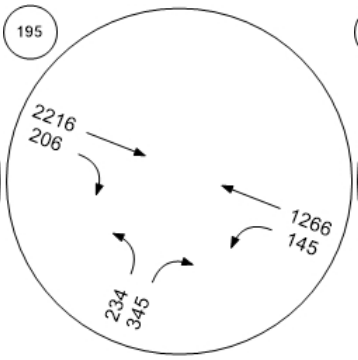
Traffic Volume - Future Total Volume



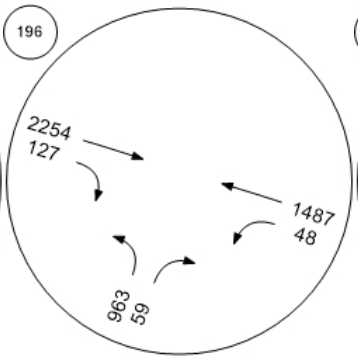
Bayfront Expy/Marsh Rd



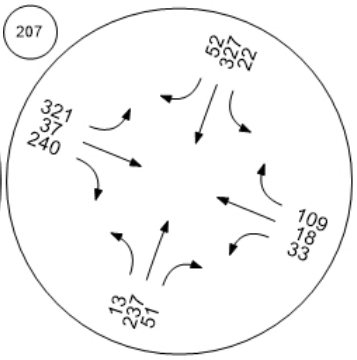
Bayfront Expy/Chilco St



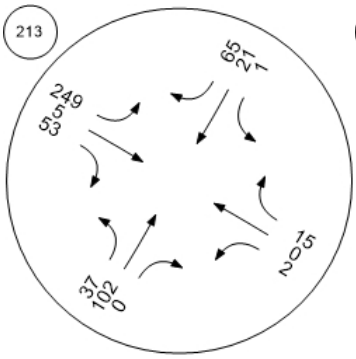
Bayfront Expy/Chrysler Drive



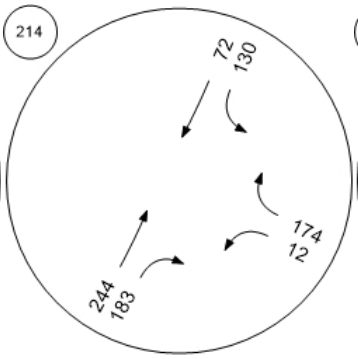
Chilco St/Constitution Dr



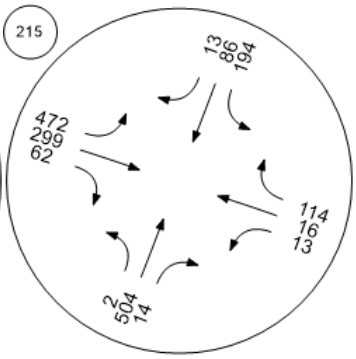
Chrysler Dr/Independence Dr



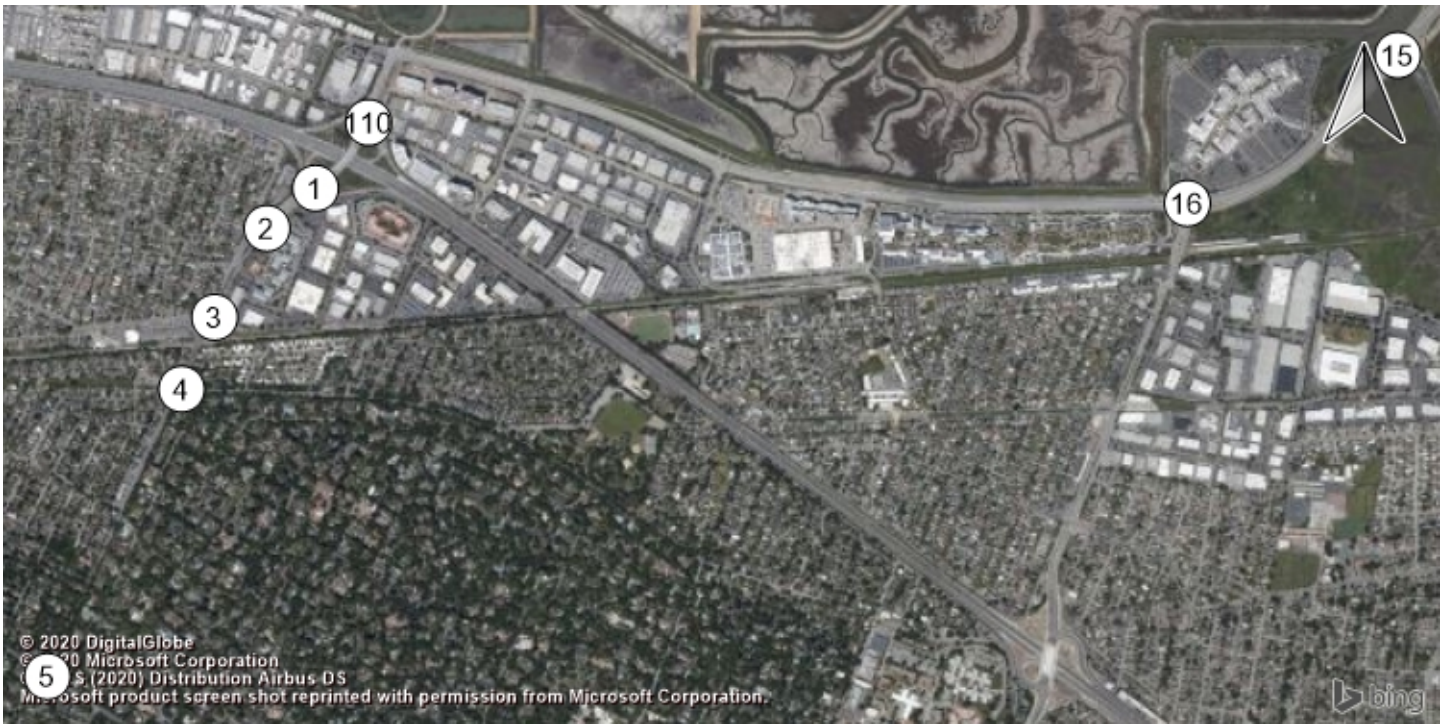
Chrysler Dr/Jefferson Dr



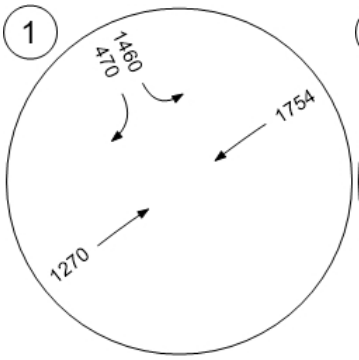
Chrysler Dr/Constitution Dr



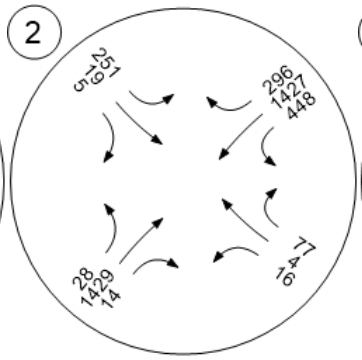
Traffic Volume - Future Total Volume



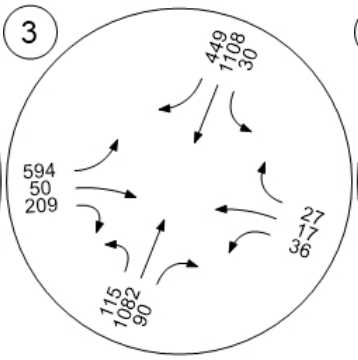
Marsh Rd (SR 84)/US 101 S



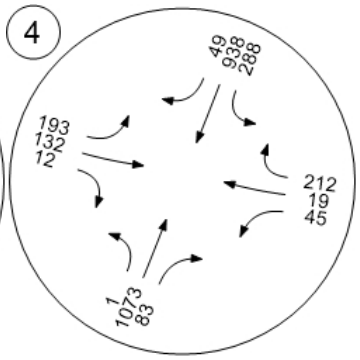
Marsh Rd/Rolison Rd-Scott D



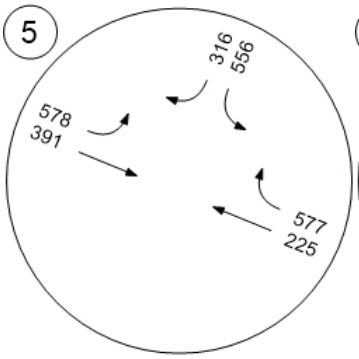
Marsh Rd/Florence St-Bohan



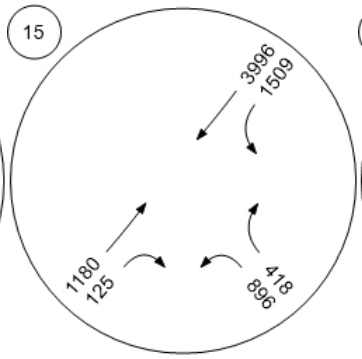
Marsh Rd/Bay Rd



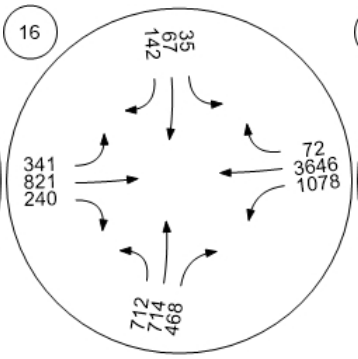
Middlefield Rd/Marsh Rd



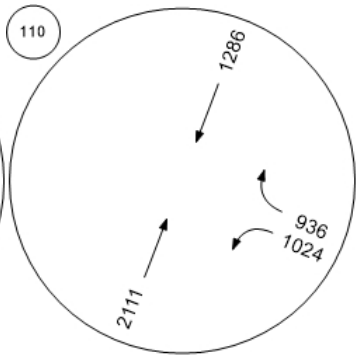
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



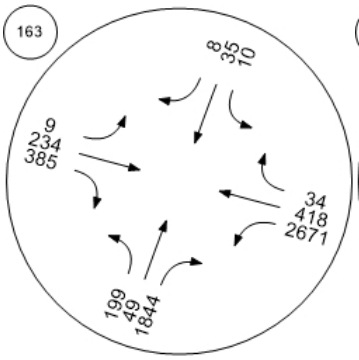
Marsh Road and US 101 NB



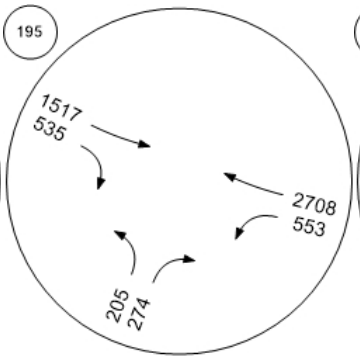
Traffic Volume - Future Total Volume



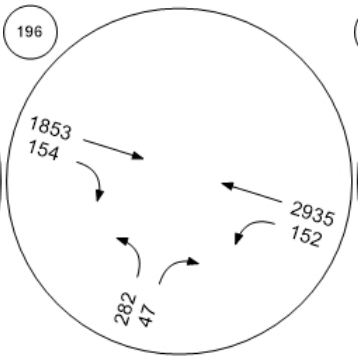
Bayfront Expy/Marsh Rd



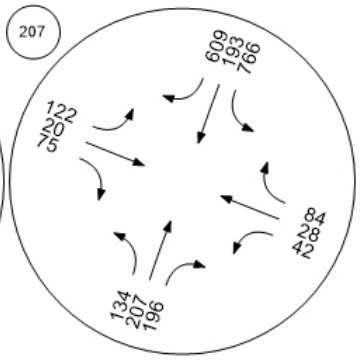
Bayfront Expy/Chilco St



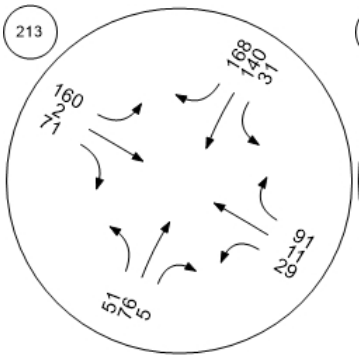
Bayfront Expy/Chrysler Drive



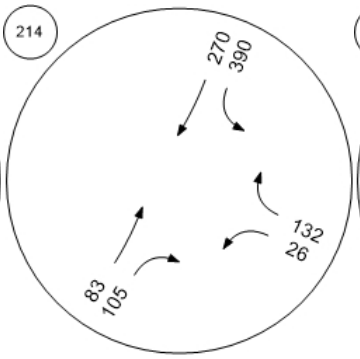
Chilco St/Constitution Dr



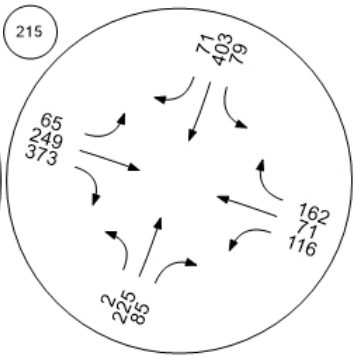
Chrysler Dr/Independence Dr



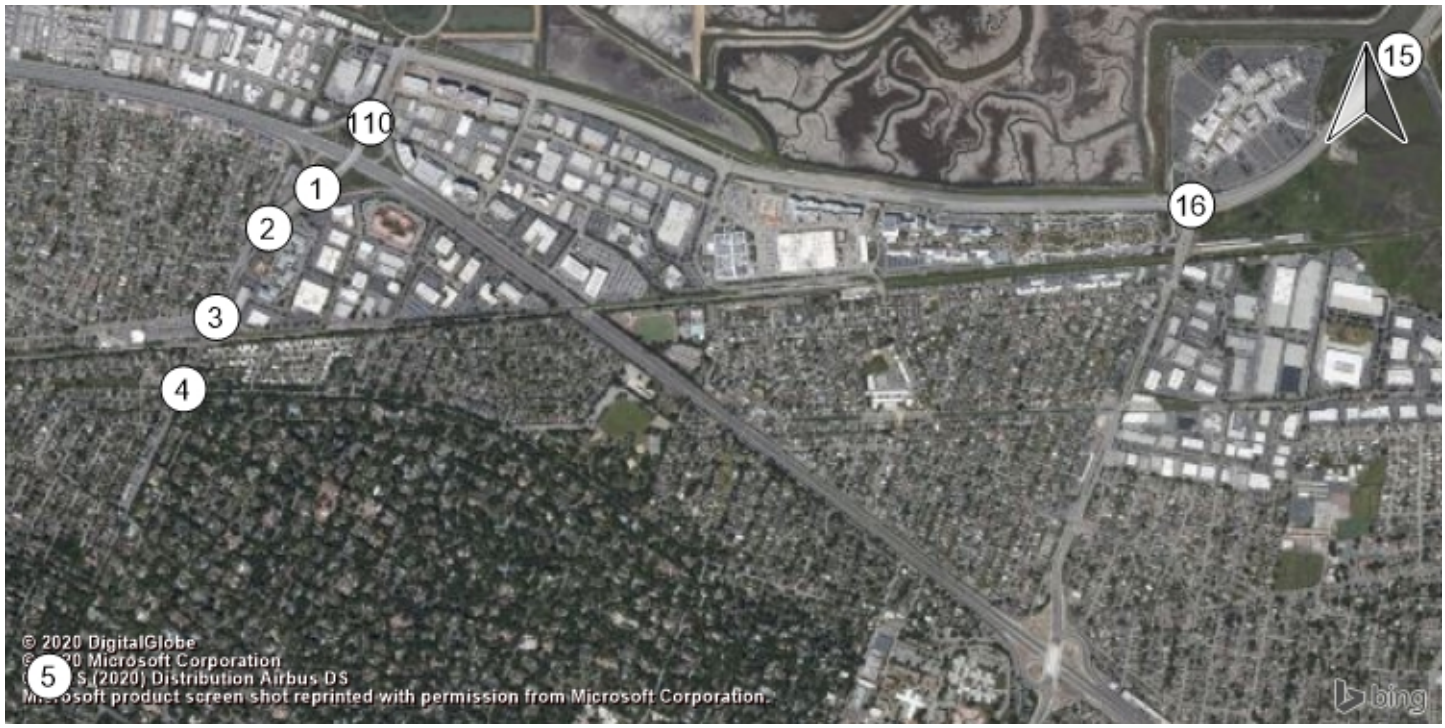
Chrysler Dr/Jefferson Dr



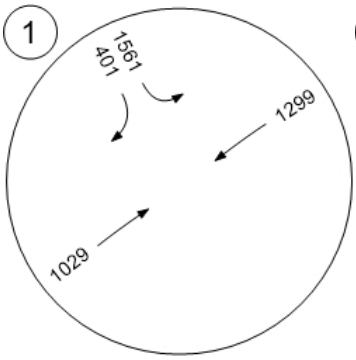
Chrysler Dr/Constitution Dr



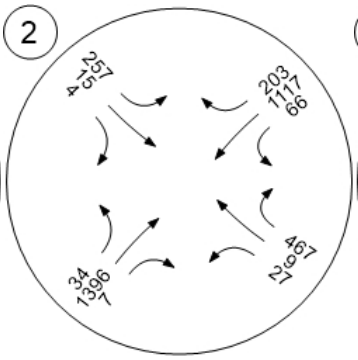
Traffic Volume - Future Total Volume



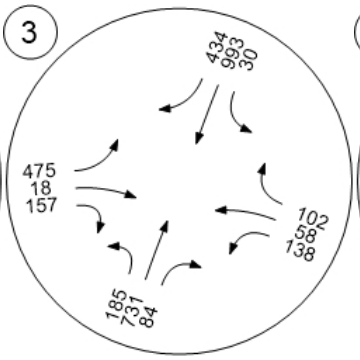
Marsh Rd (SR 84)/US 101 S



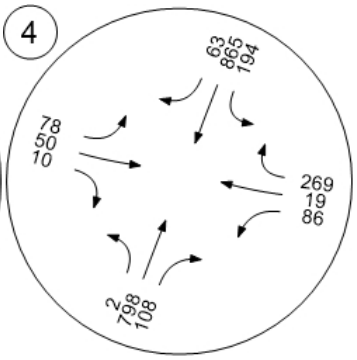
Marsh Rd/Rolison Rd-Scott D



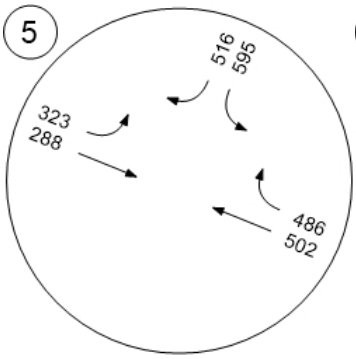
Marsh Rd/Florence St-Bohan



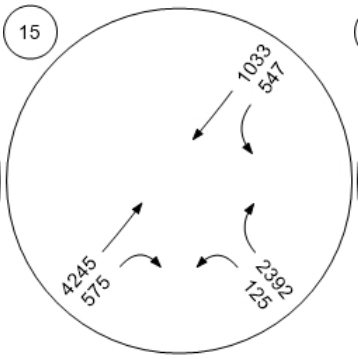
Marsh Rd/Bay Rd



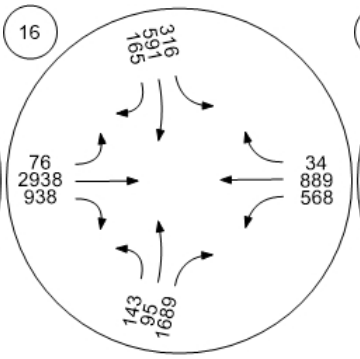
Middlefield Rd/Marsh Rd



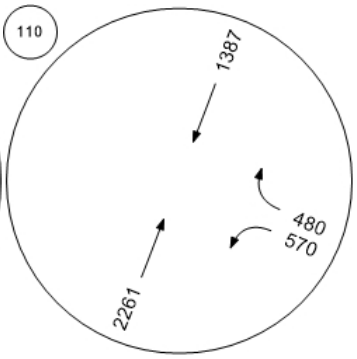
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



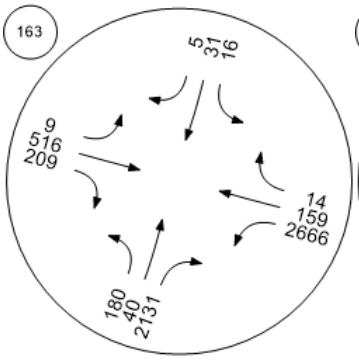
Marsh Road/101 NB Ramps



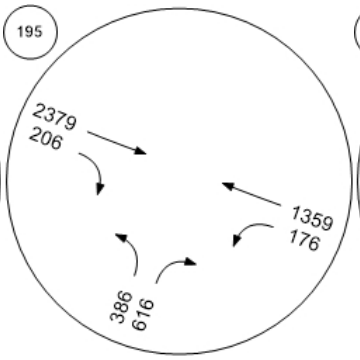
Traffic Volume - Future Total Volume



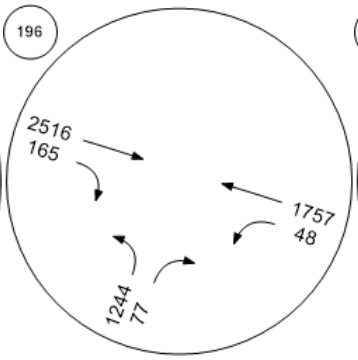
Bayfront Expy/Marsh Rd



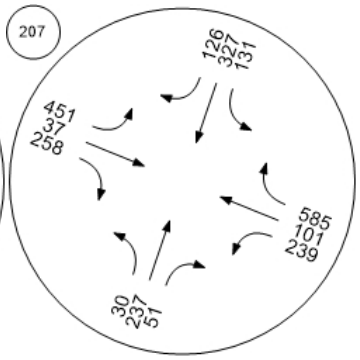
Bayfront Expy/Chilco St



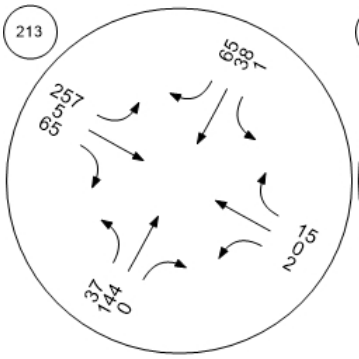
Bayfront Expy/Chrysler Drive



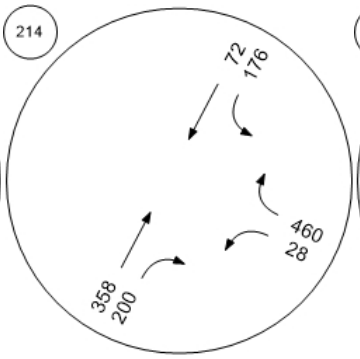
Chilco St/Constitution Dr



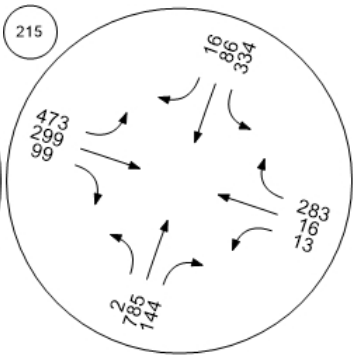
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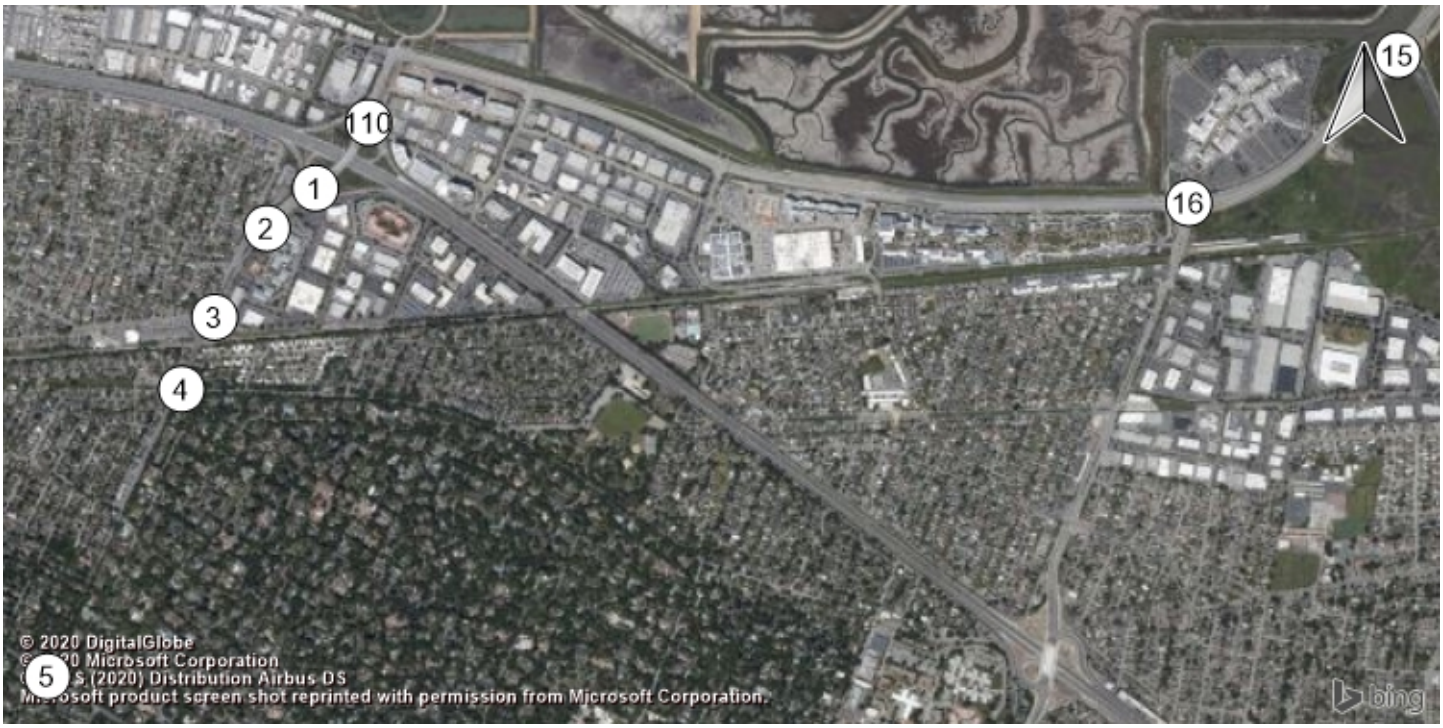
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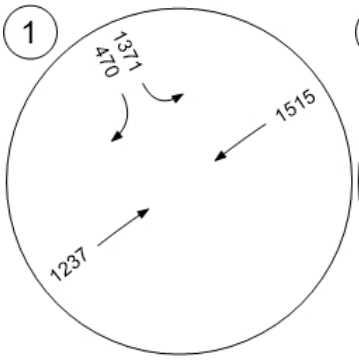
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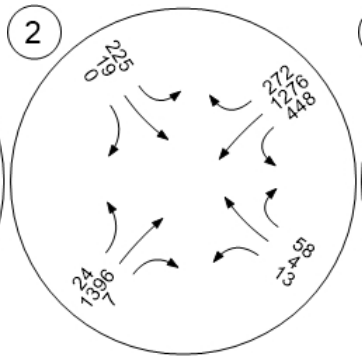
Traffic Volume - Future Total Volume



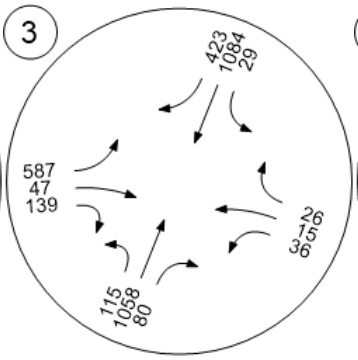
Marsh Rd (SR 84)/US 101 S



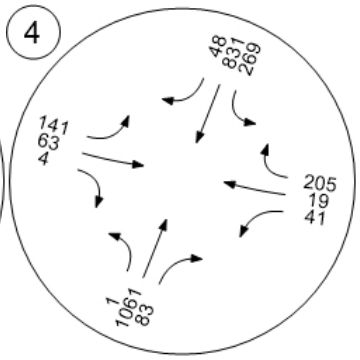
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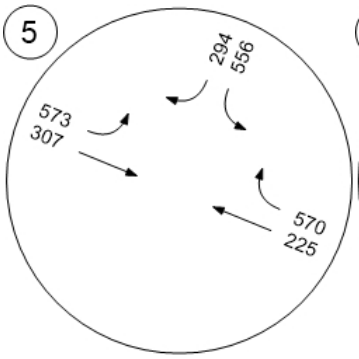
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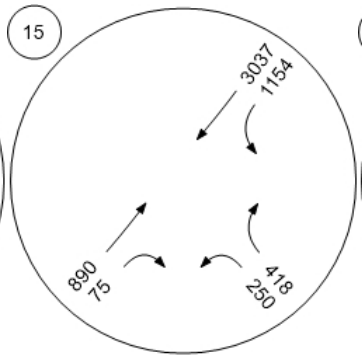
Marsh Rd/Bay Rd



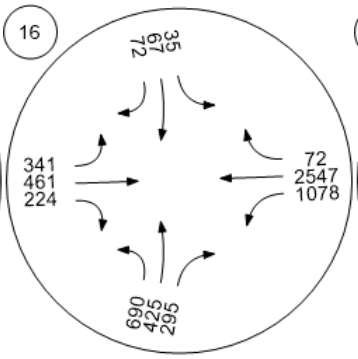
Middlefield Rd/Marsh Rd



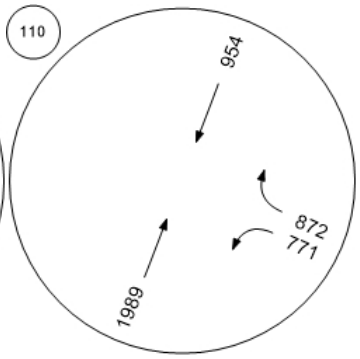
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



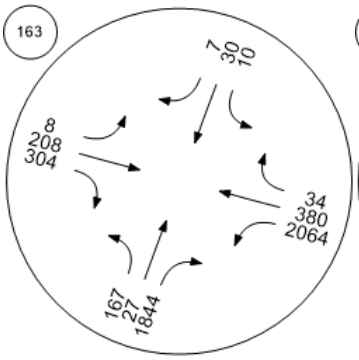
Marsh Road and US 101 NB



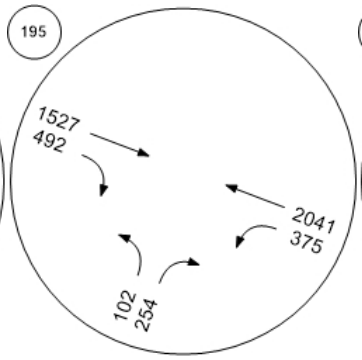
Traffic Volume - Future Total Volume



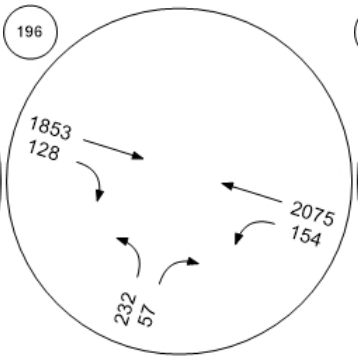
Bayfront Expy/Marsh Rd



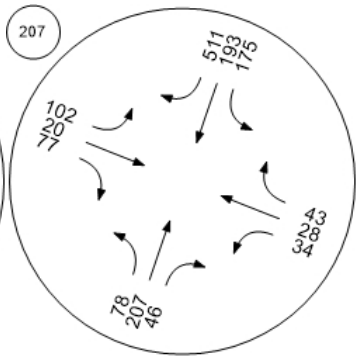
Bayfront Expy/Chilco St



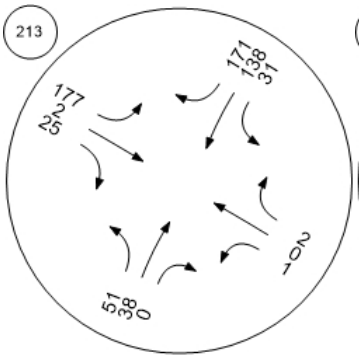
Bayfront Expy/Chrysler Drive



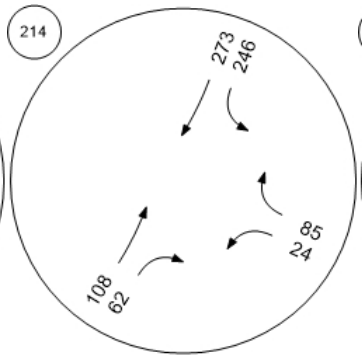
Chilco St/Constitution Dr



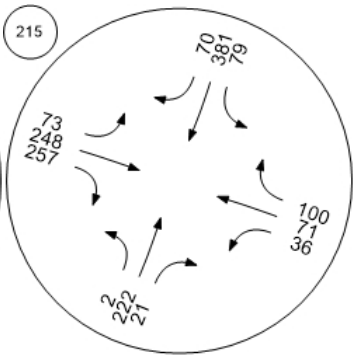
Chrysler Dr/Independence Dr



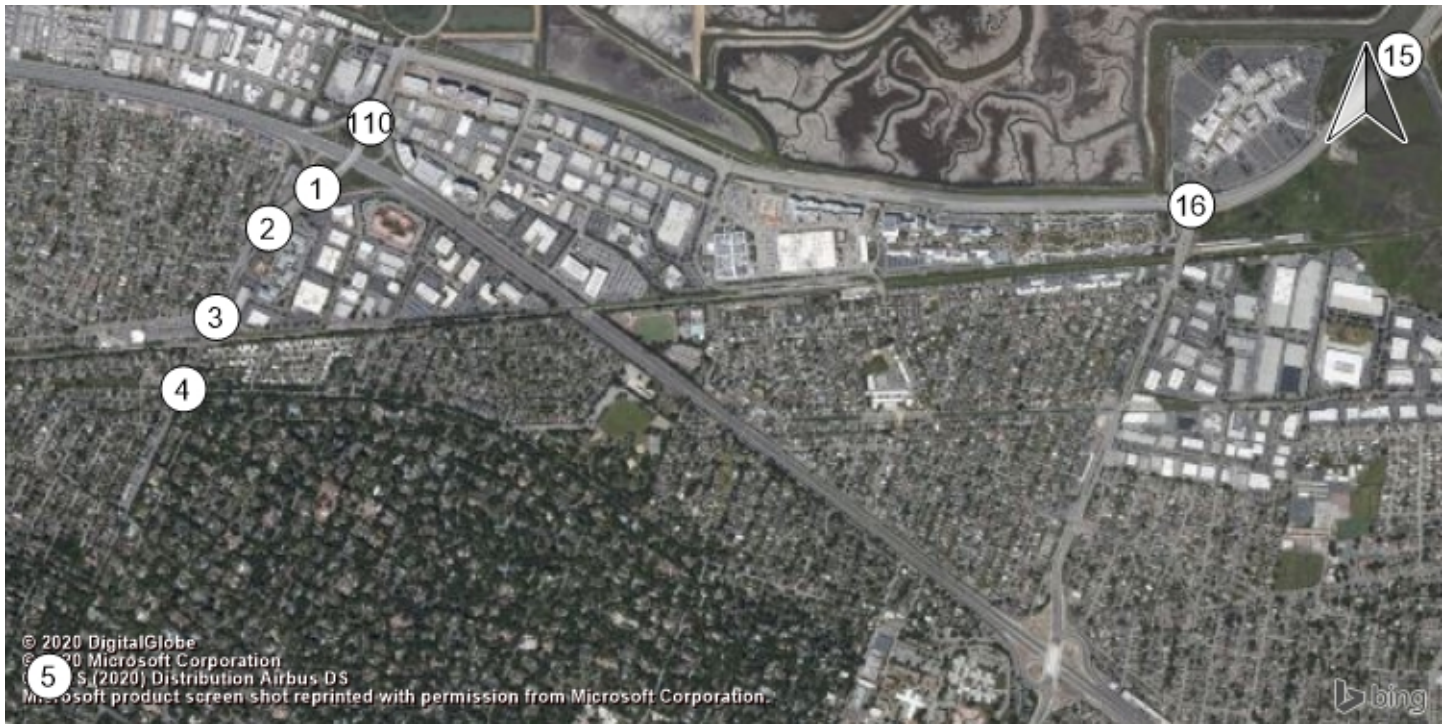
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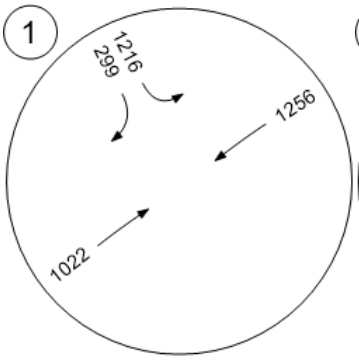
Chrysler Dr/Constitution Dr



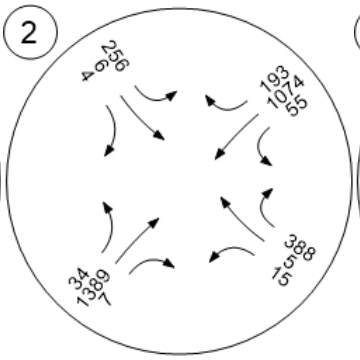
Traffic Volume - Future Total Volume



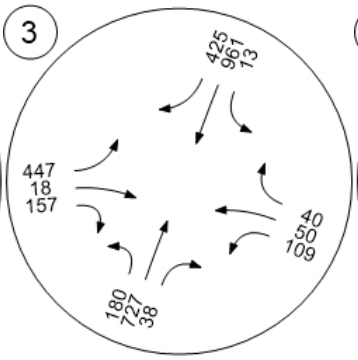
Marsh Rd (SR 84)/US 101 S



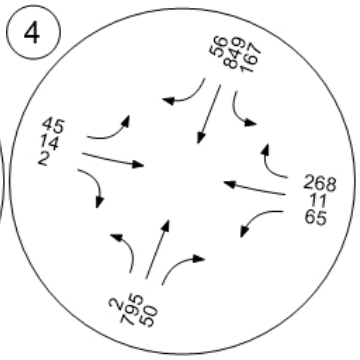
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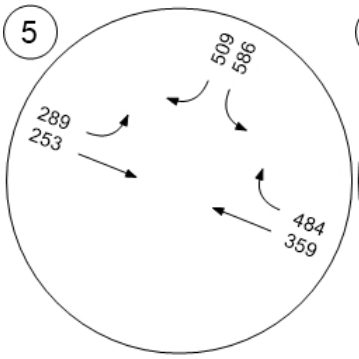
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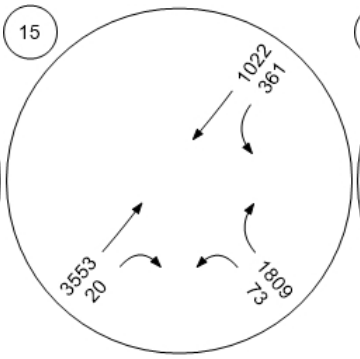
Marsh Rd/Bay Rd



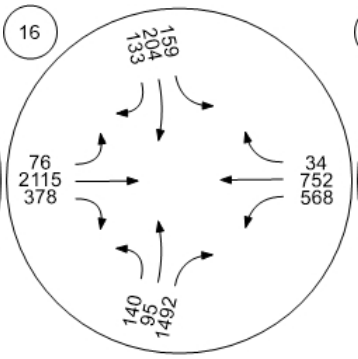
Middlefield Rd/Marsh Rd



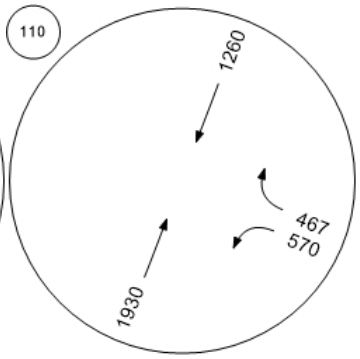
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



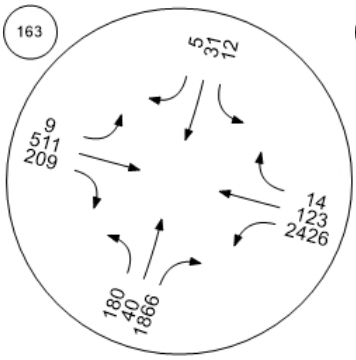
Marsh Road/101 NB Ramps



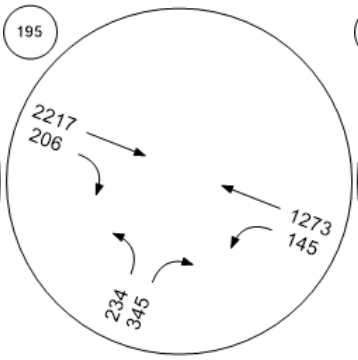
Traffic Volume - Future Total Volume



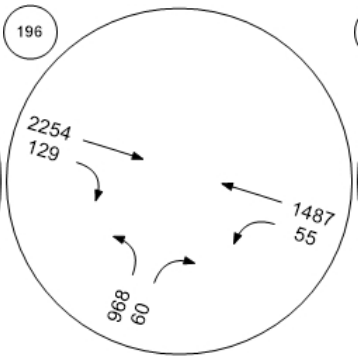
Bayfront Expy/Marsh Rd



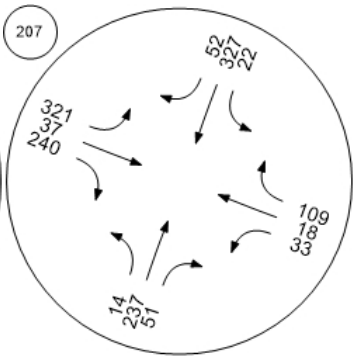
Bayfront Expy/Chilco St



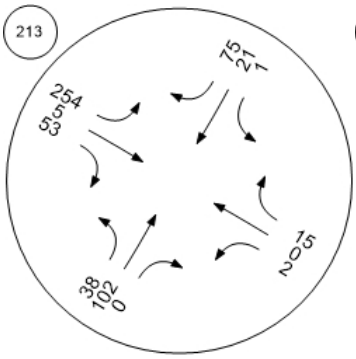
Bayfront Expy/Chrysler Drive



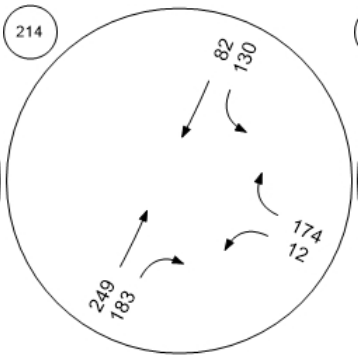
Chilco St/Constitution Dr



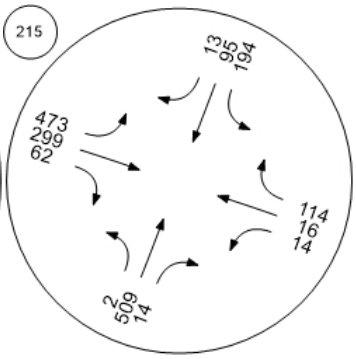
Chrysler Dr/Independence Dr



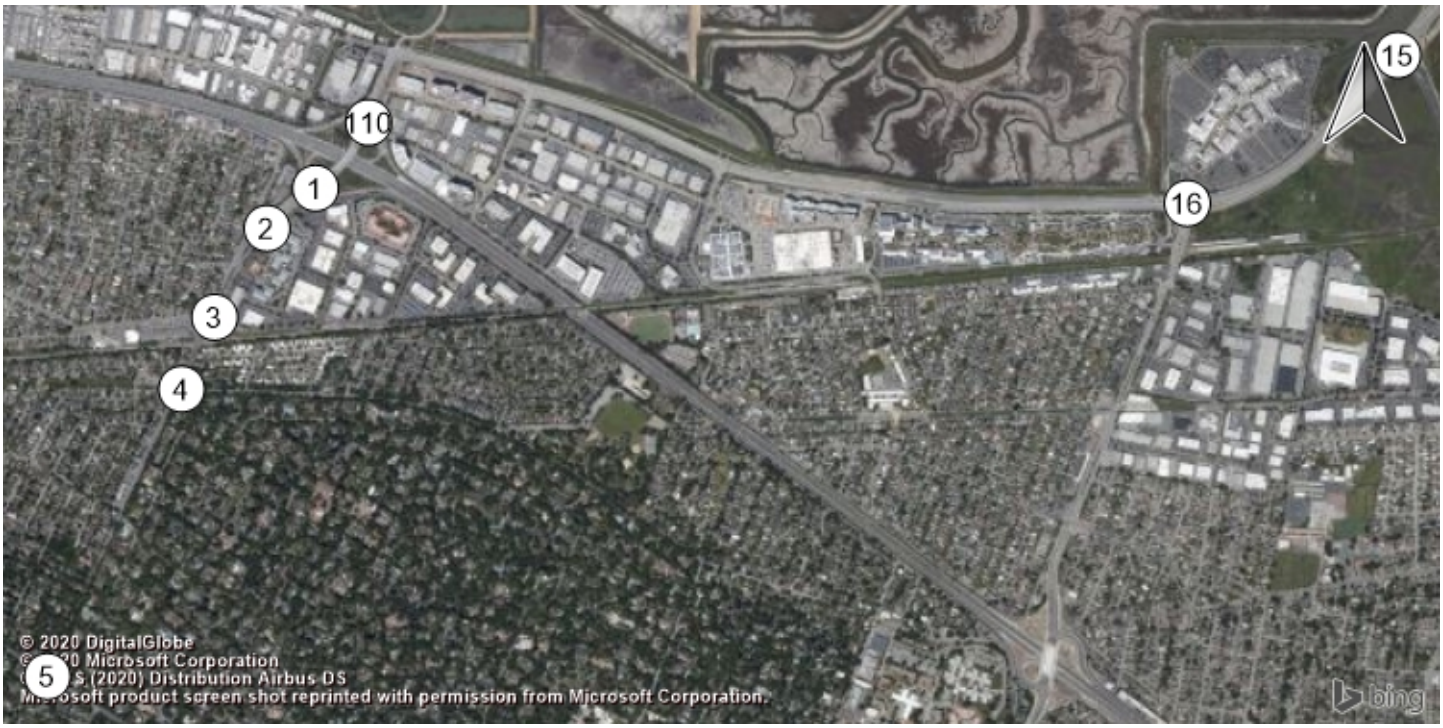
Chrysler Dr/Jefferson Dr



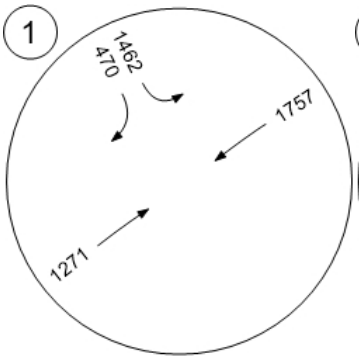
Chrysler Dr/Constitution Dr



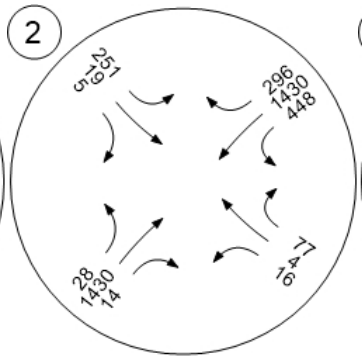
Traffic Volume - Future Total Volume



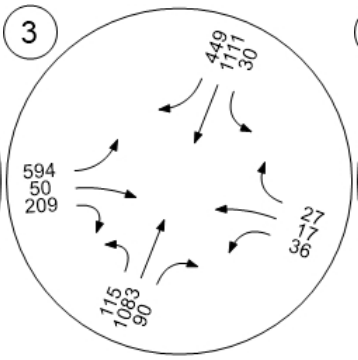
Marsh Rd (SR 84)/US 101 S



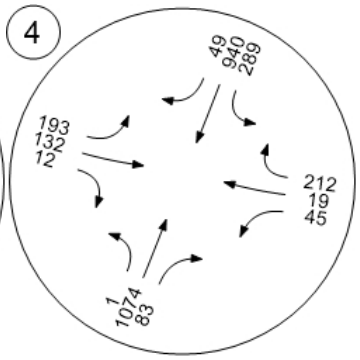
Marsh Rd/Rolison Rd-Scott D



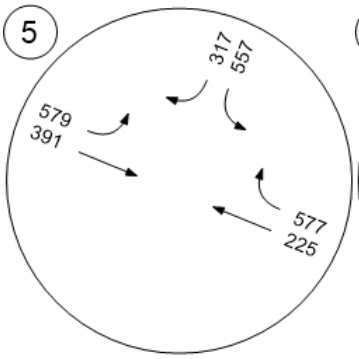
Marsh Rd/Florence St-Bohan



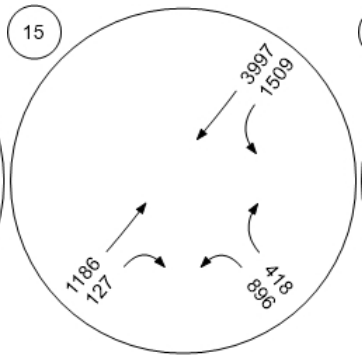
Marsh Rd/Bay Rd



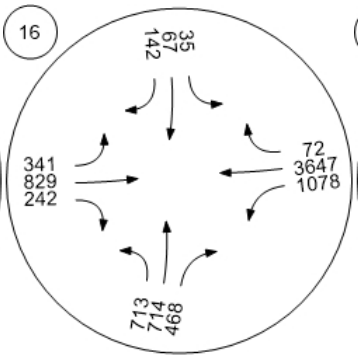
Middlefield Rd/Marsh Rd



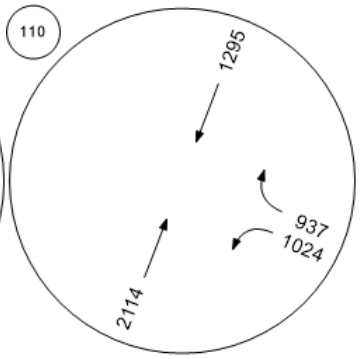
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



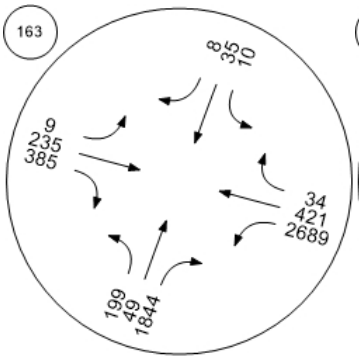
Marsh Road and US 101 NB



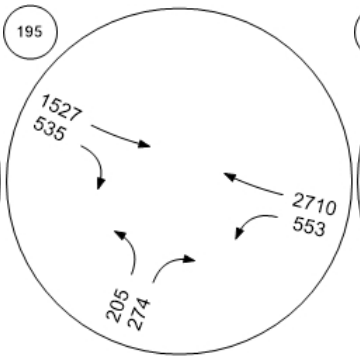
Traffic Volume - Future Total Volume



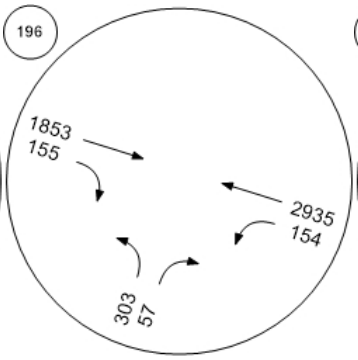
Bayfront Expy/Marsh Rd



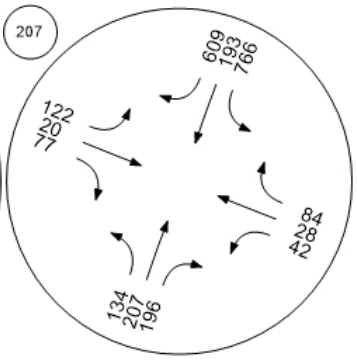
Bayfront Expy/Chilco St



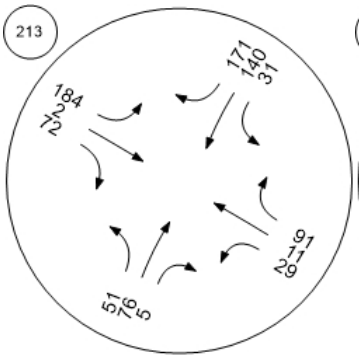
Bayfront Expy/Chrysler Drive



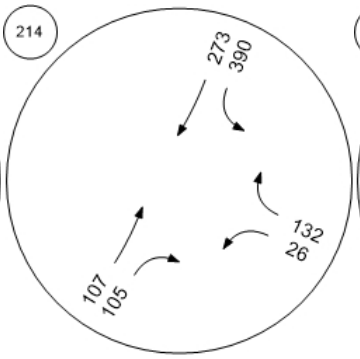
Chilco St/Constitution Dr



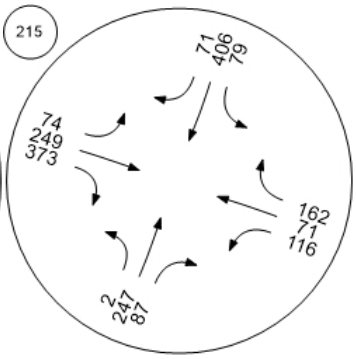
Chrysler Dr/Independence Dr



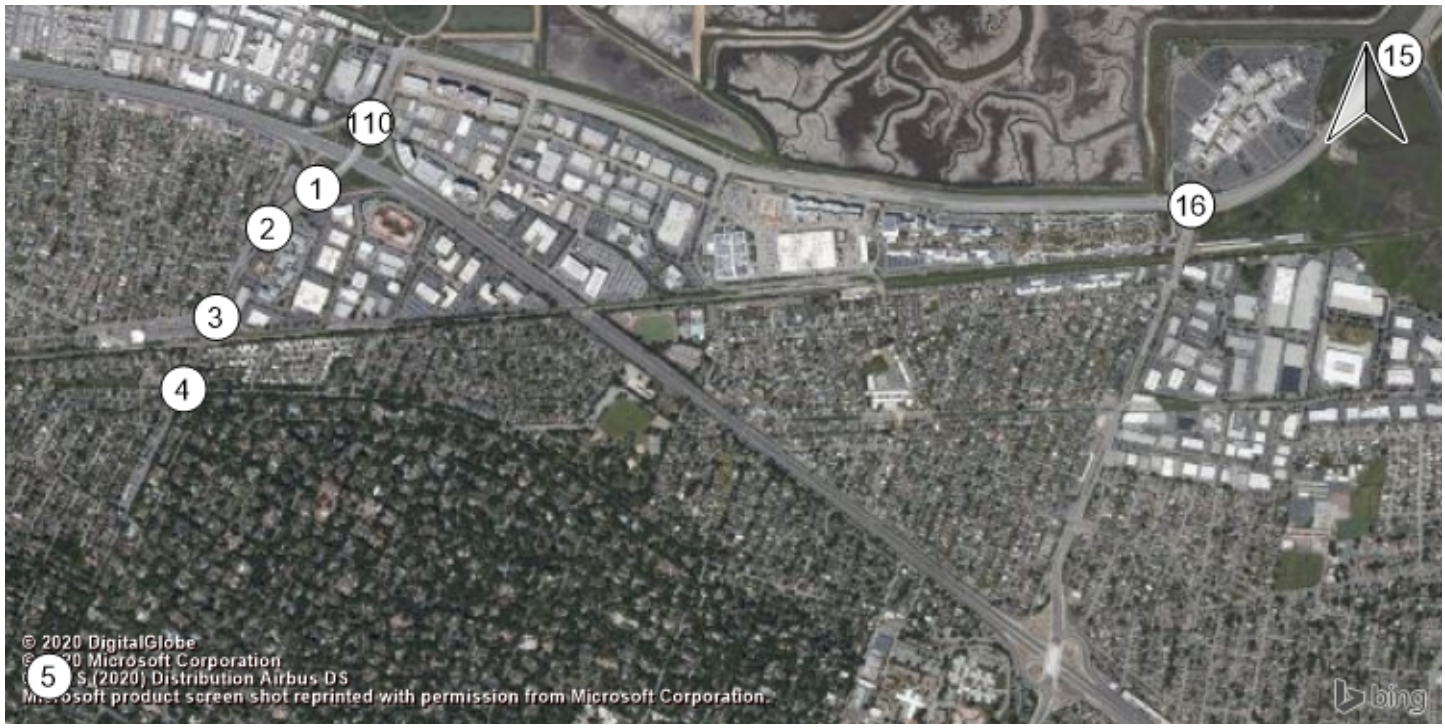
Chrysler Dr/Jefferson Dr



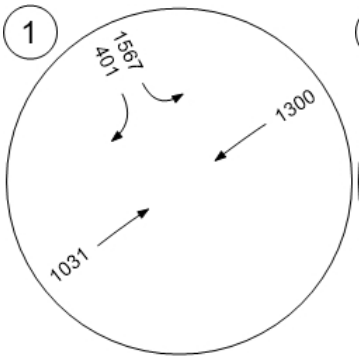
Chrysler Dr/Constitution Dr



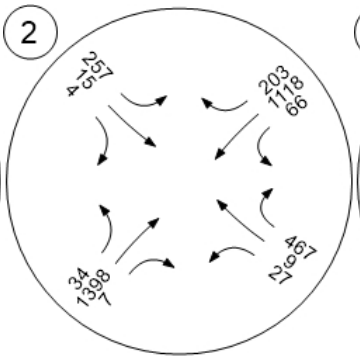
Traffic Volume - Future Total Volume



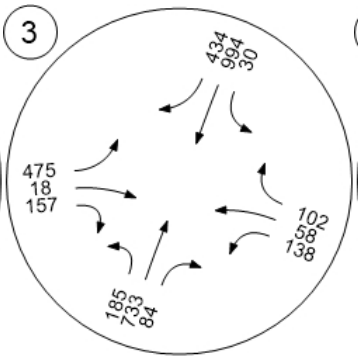
Marsh Rd (SR 84)/US 101 S



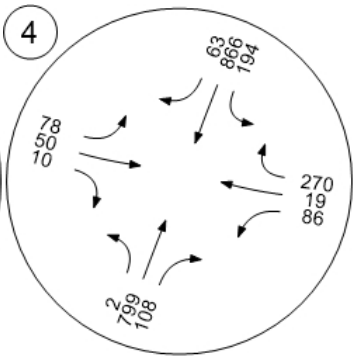
Marsh Rd/Rolison Rd-Scott D



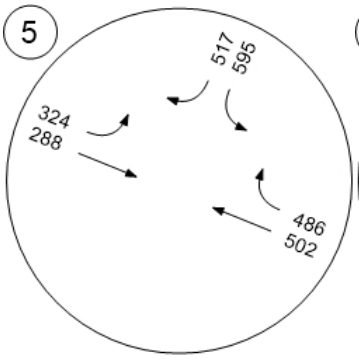
Marsh Rd/Florence St-Bohan



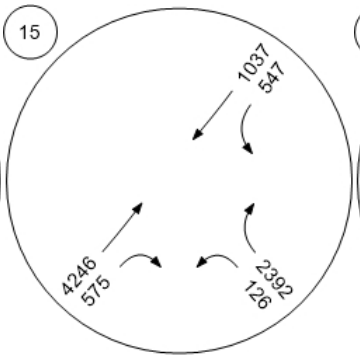
Marsh Rd/Bay Rd



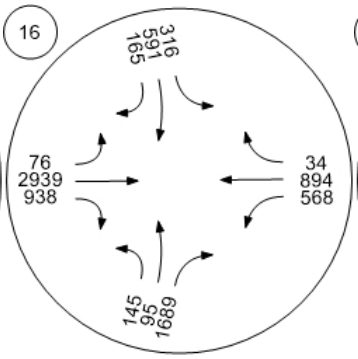
Middlefield Rd/Marsh Rd



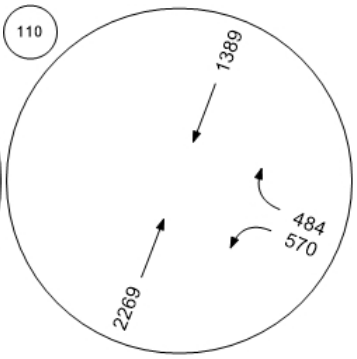
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



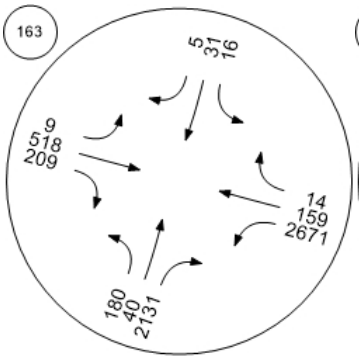
Marsh Road/101 NB Ramps



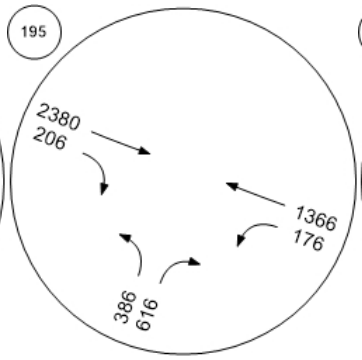
Traffic Volume - Future Total Volume



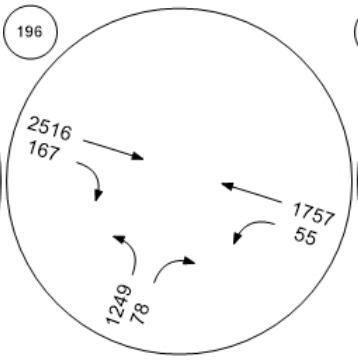
Bayfront Expy/Marsh Rd



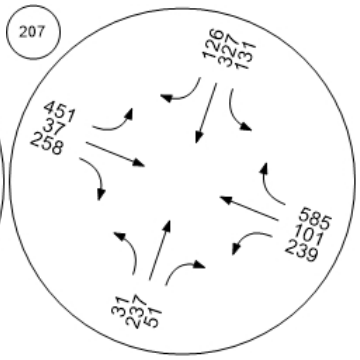
Bayfront Expy/Chilco St



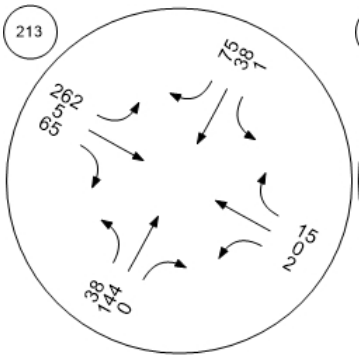
Bayfront Expy/Chrysler Drive



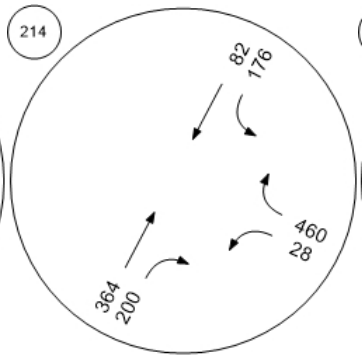
Chilco St/Constitution Dr



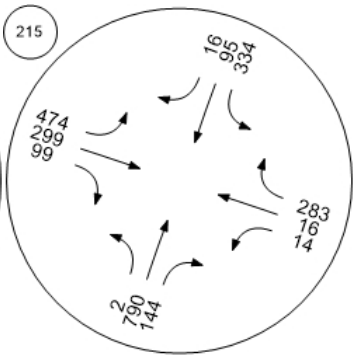
Chrysler Dr/Independence Dr



Chrysler Dr/Jefferson Dr

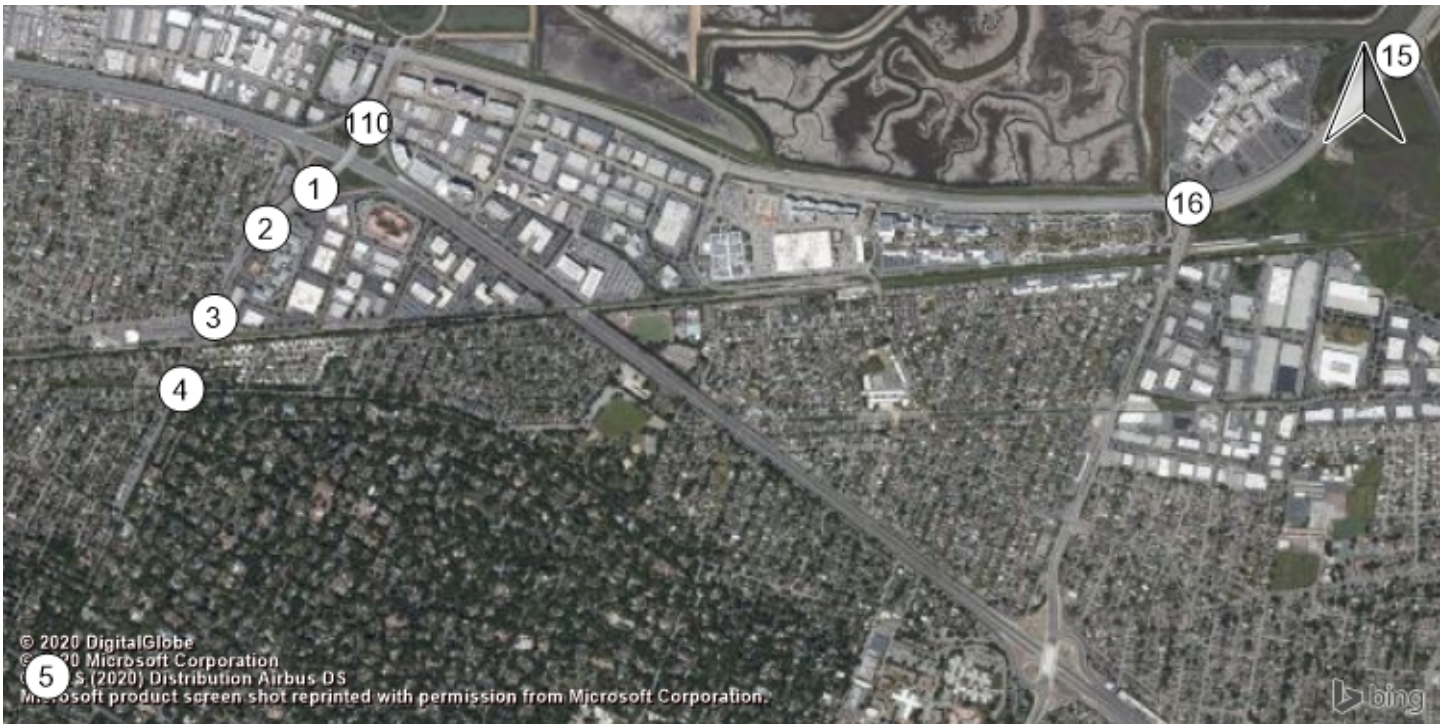


Chrysler Dr/Constitution Dr

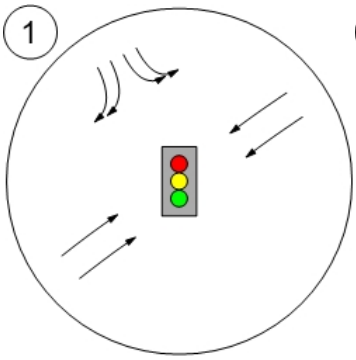


Attachment 2. Intersection Lane Configurations – All Scenarios

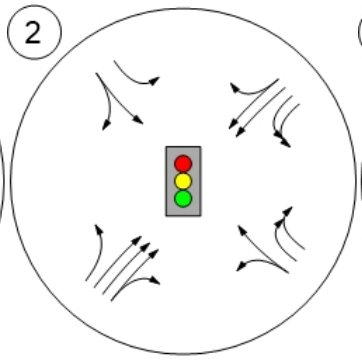
Lane Configuration and Traffic Control (Existing Conditions)



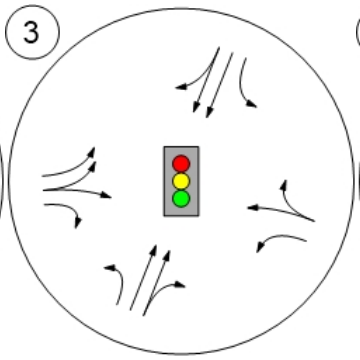
Marsh Rd (SR 84)/US 101 S



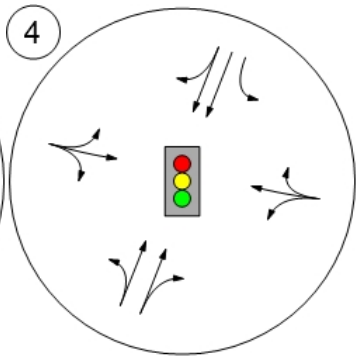
Marsh Rd/Rolison Rd-Scott D



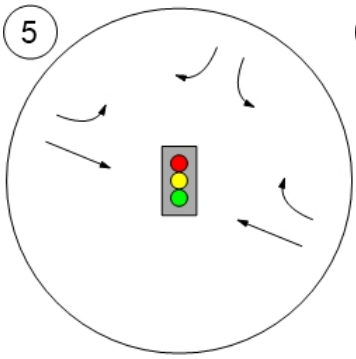
Marsh Rd/Florence St-Bohan



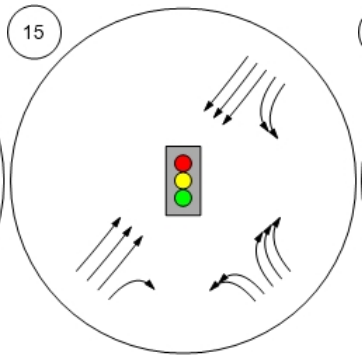
Marsh Rd/Bay Rd



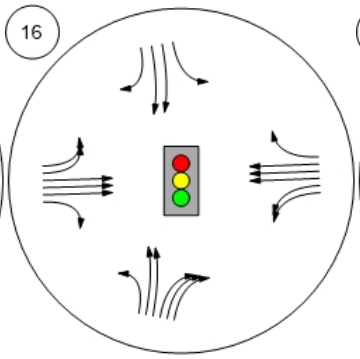
Middlefield Rd/Marsh Rd



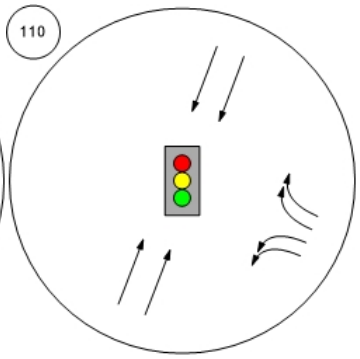
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



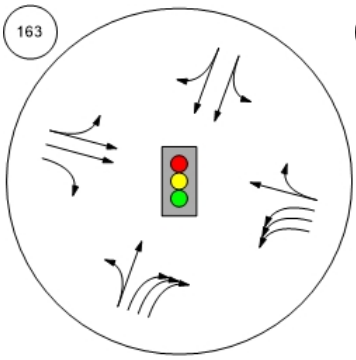
Marsh Road and US 101 NB



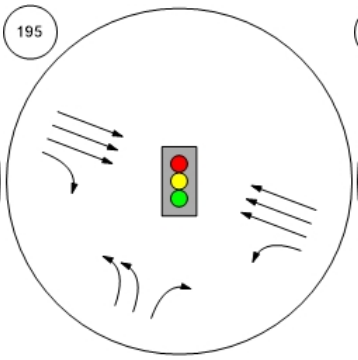
Lane Configuration and Traffic Control (Existing Conditions)



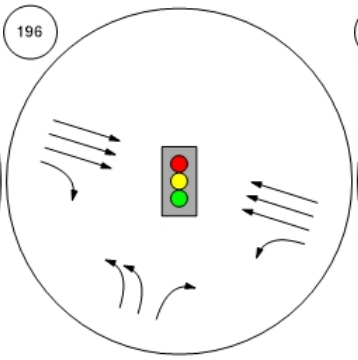
Bayfront Expy/Marsh Rd



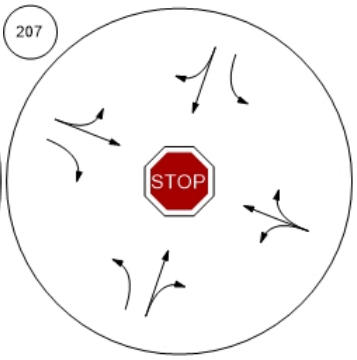
Bayfront Expy/Chilco St



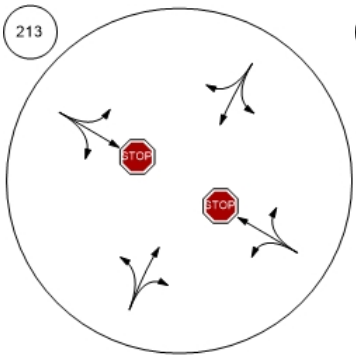
Bayfront Expy/Chrysler Drive



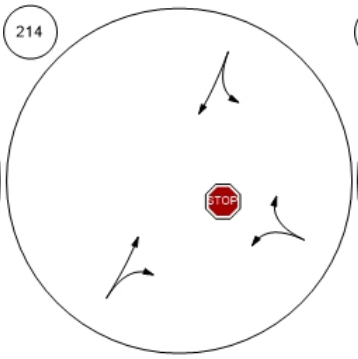
Chilco St/Constitution Dr



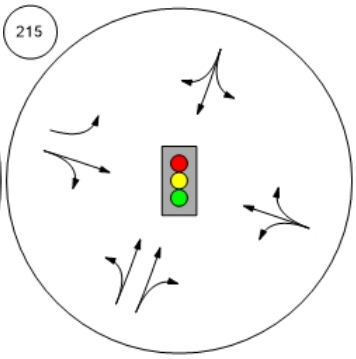
Chrysler Dr/Independence Dr



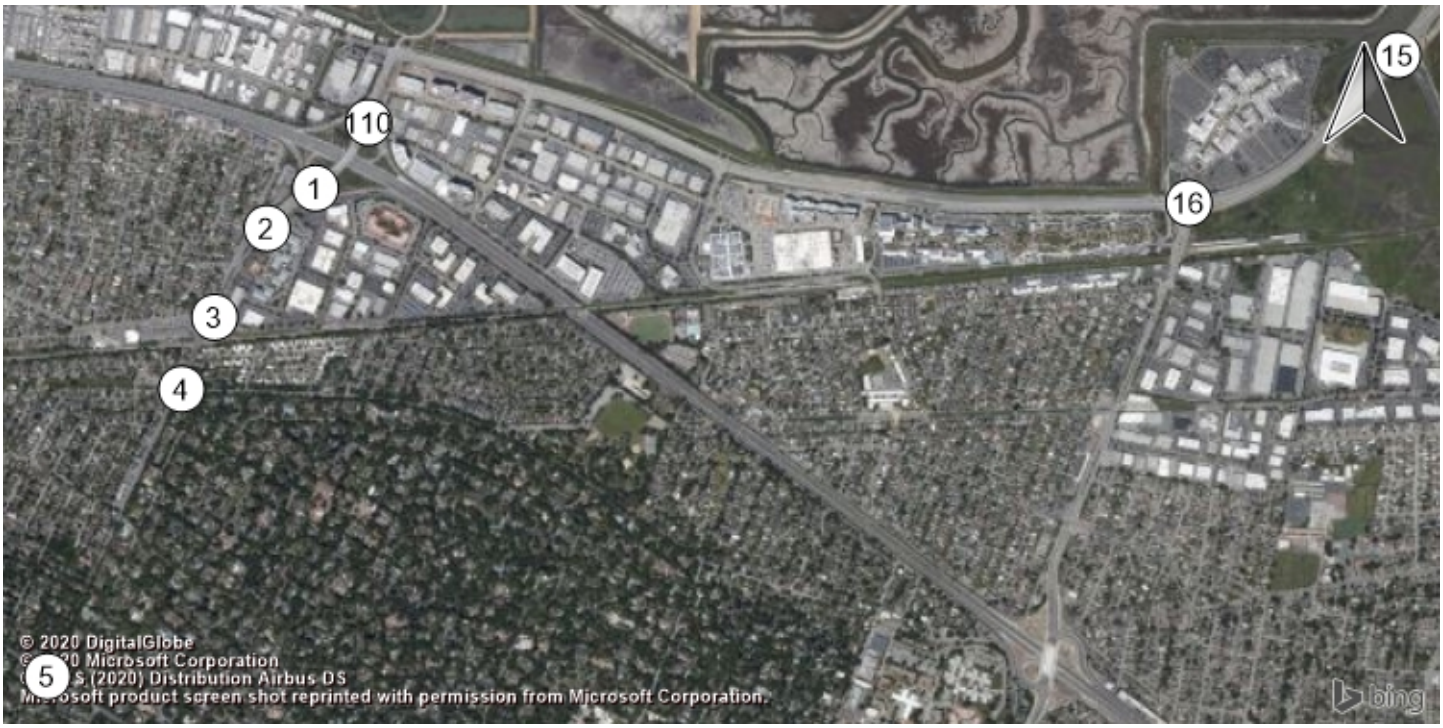
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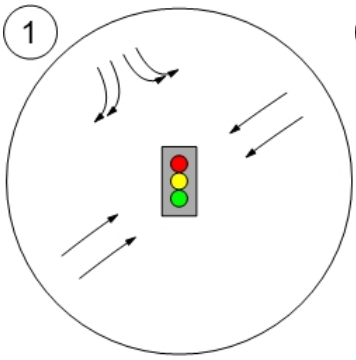
Chrysler Dr/Constitution Dr



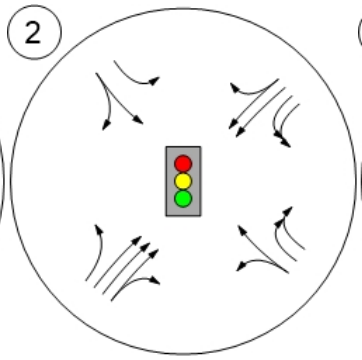
Lane Configuration and Traffic Control (Near Term Conditions)



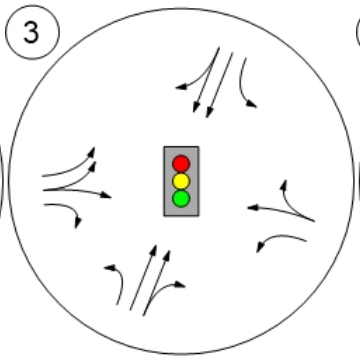
Marsh Rd (SR 84)/US 101 S



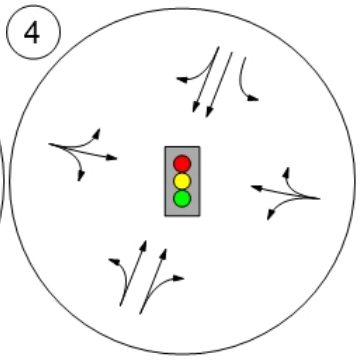
Marsh Rd/Rolison Rd-Scott D



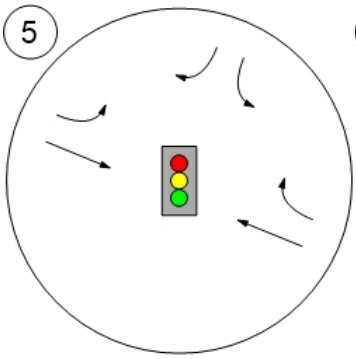
Marsh Rd/Florence St-Bohan



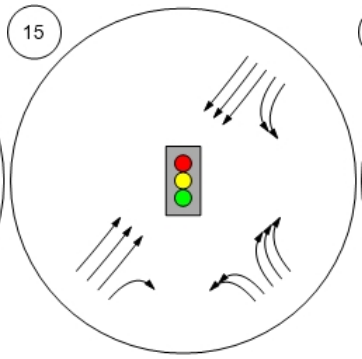
Marsh Rd/Bay Rd



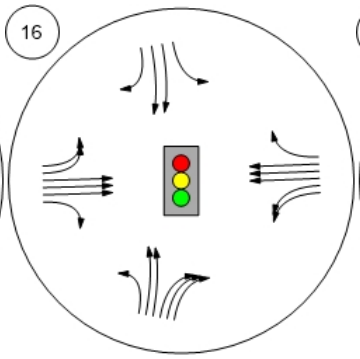
Middlefield Rd/Marsh Rd



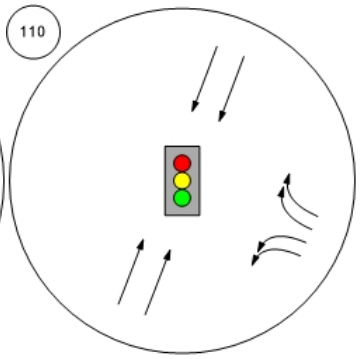
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



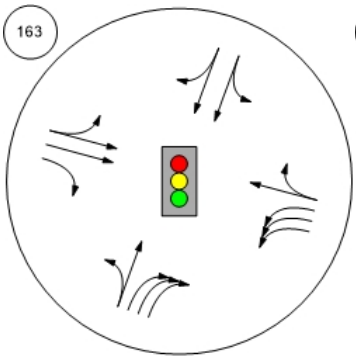
Marsh Road and US 101 NB



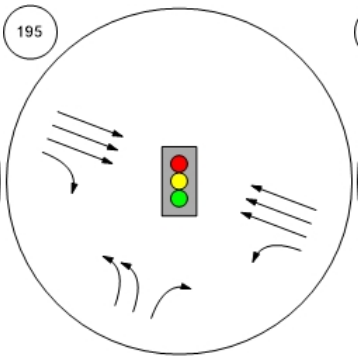
Lane Configuration and Traffic Control (Near Term Conditions)



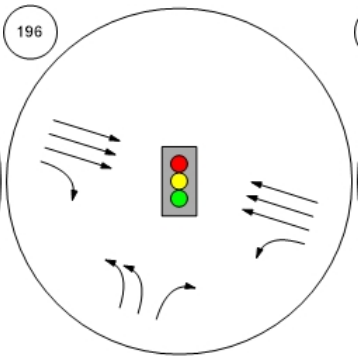
Bayfront Expy/Marsh Rd



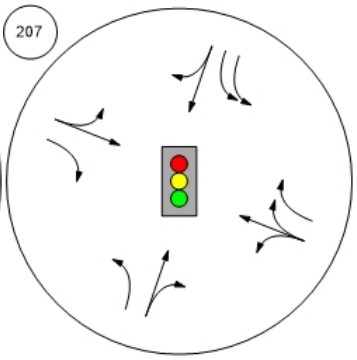
Bayfront Expy/Chilco St



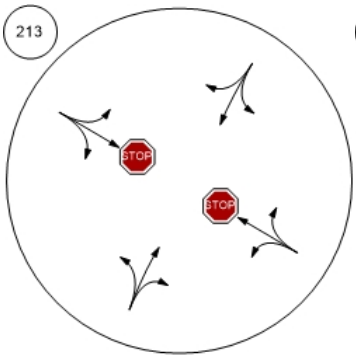
Bayfront Expy/Chrysler Drive



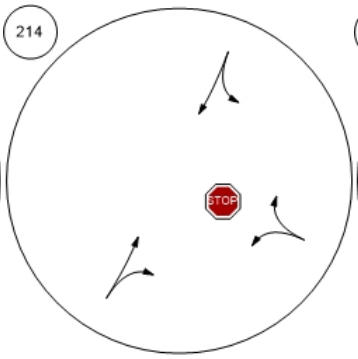
Chilco St/Constitution Dr



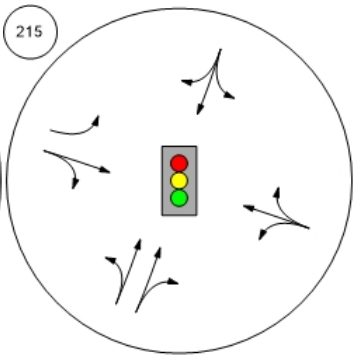
Chrysler Dr/Independence Dr



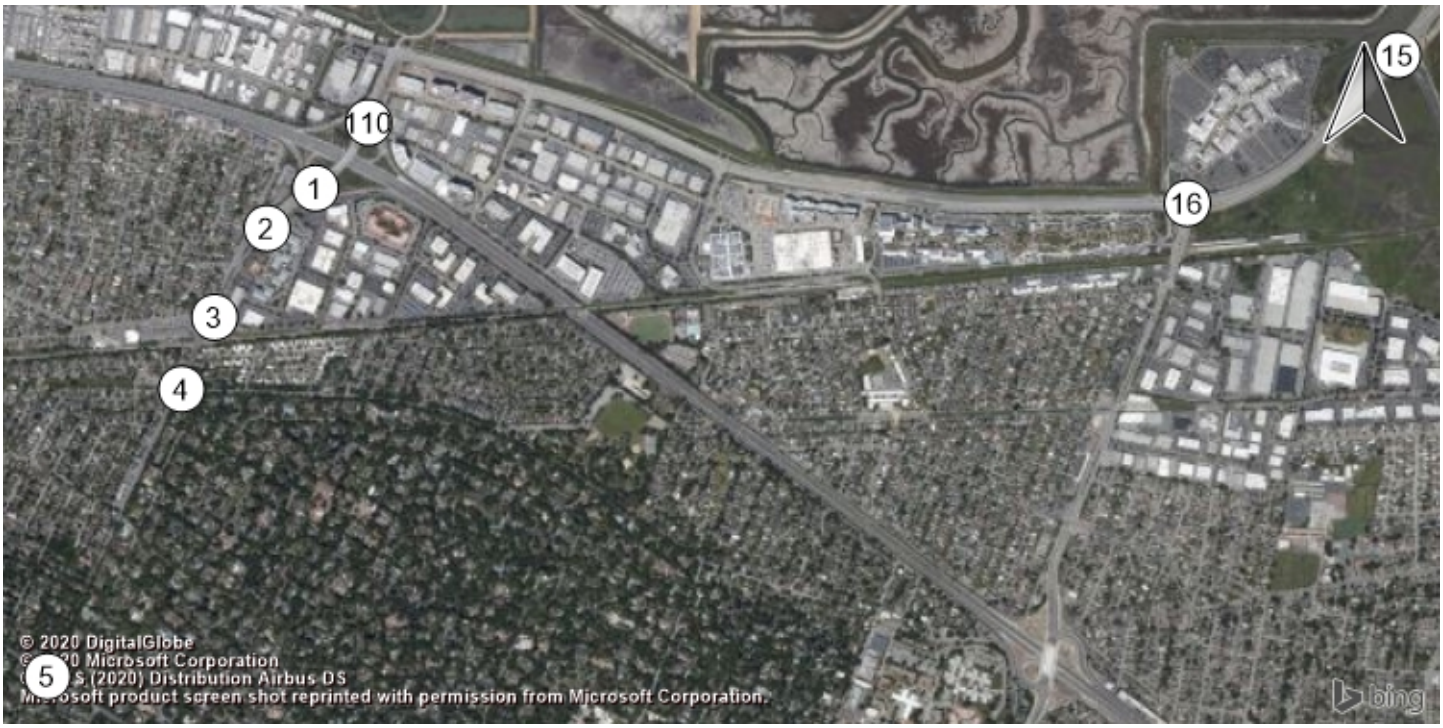
Chrysler Dr/Jefferson Dr



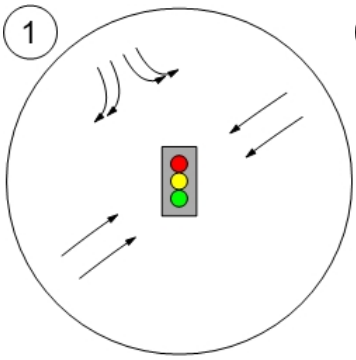
Chrysler Dr/Constitution Dr



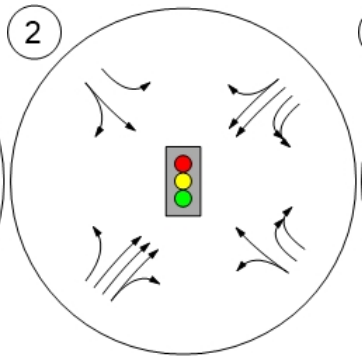
Lane Configuration and Traffic Control (Cumulative Conditions)



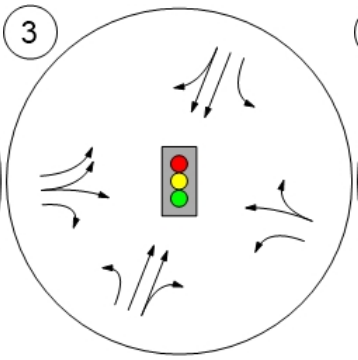
Marsh Rd (SR 84)/US 101 S



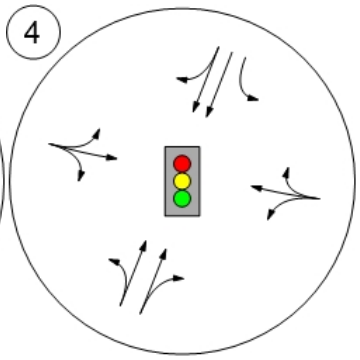
Marsh Rd/Rolison Rd-Scott D



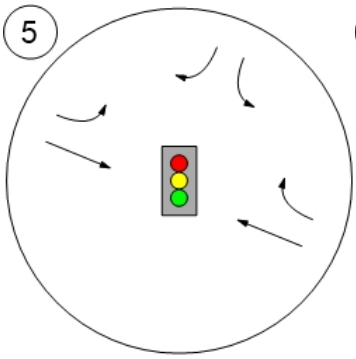
Marsh Rd/Florence St-Bohan



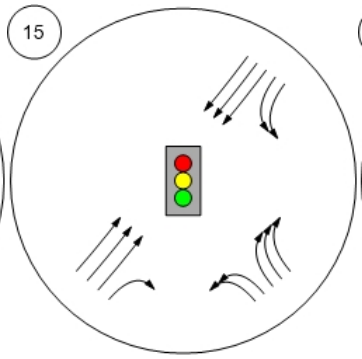
Marsh Rd/Bay Rd



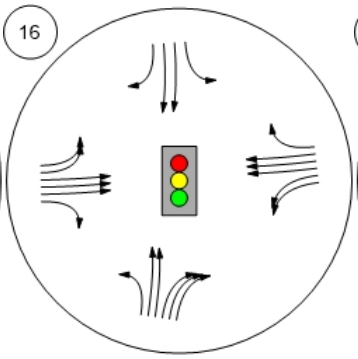
Middlefield Rd/Marsh Rd



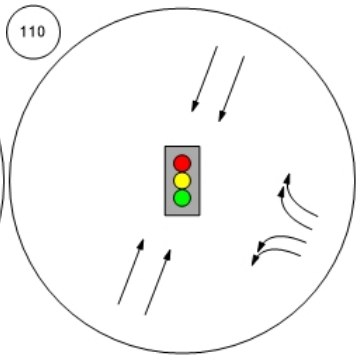
Bayfront Expy (SR 84)/Univer



Bayfront Expy (SR 84)/Willow



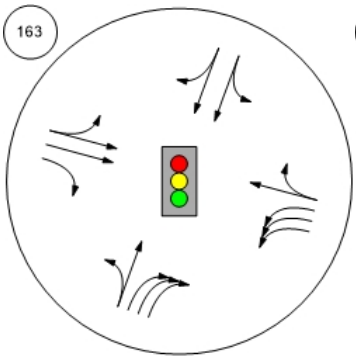
Marsh Road and US 101 NB



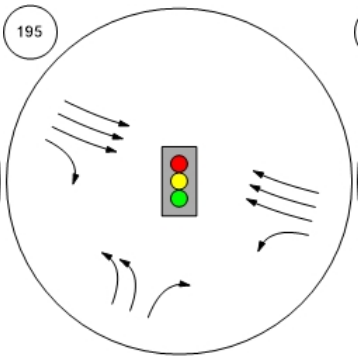
Lane Configuration and Traffic Control (Cumulative Conditions)



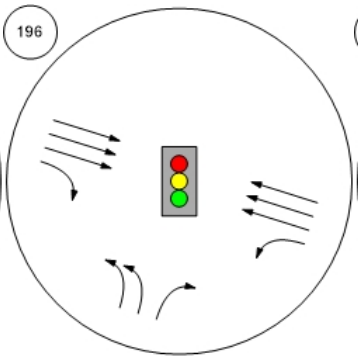
Bayfront Expy/Marsh Rd



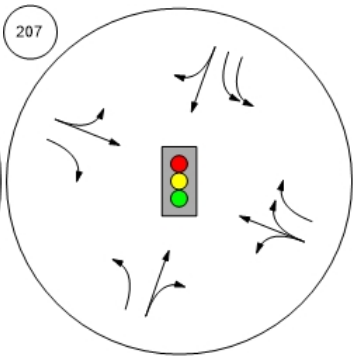
Bayfront Expy/Chilco St



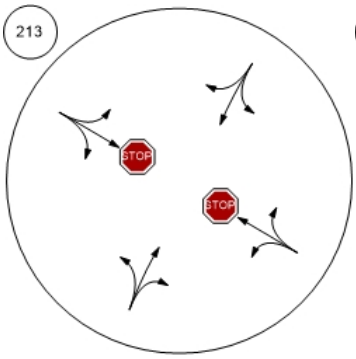
Bayfront Expy/Chrysler Drive



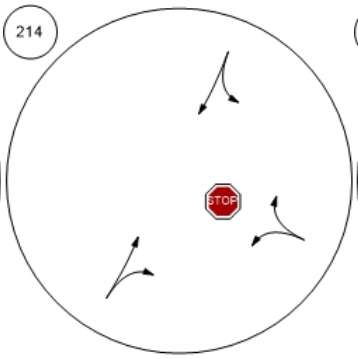
Chilco St/Constitution Dr



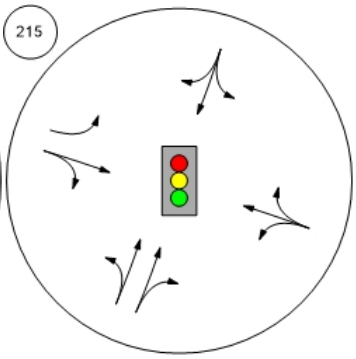
Chrysler Dr/Independence Dr



Chrysler Dr/Jefferson Dr



Chrysler Dr/Constitution Dr



Attachment 3. Intersection Level of Service Results

Existing Conditions

Vistro File: H:\...\Existing Conditions_AM.vistro
Report File: H:\...\Existing AM.pdf

Scenario 16 Existing AM (2019 vols)
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.838	18.1	B
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.696	18.5	B
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.711	35.3	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.641	19.7	B
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	EB Left	0.855	35.0	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.727	11.4	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	0.967	106.0	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NWB Right	0.727	15.8	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.792	56.9	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.808	12.7	B
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.621	8.4	A
207	Chilco St/Constitution Dr	All-way stop	HCM 6th Edition	SB Right	0.985	32.1	D
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.011	44.0	E
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.084	18.6	C
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Thru	0.846	50.6	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Vistro File: H:\...\Existing Conditions_PM.vistro
Report File: H:\...\Existing PM.pdf

Scenario 16 Existing PM (2019 vols)
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.701	17.0	B
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.460	15.3	B
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.682	34.6	C
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.634	18.6	B
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	EB Left	0.849	37.9	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.043	94.1	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.249	168.1	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Left	0.771	13.3	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.765	36.5	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.862	16.0	B
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.779	13.1	B
207	Chilco St/Constitution Dr	All-way stop	HCM 6th Edition	SB Thru	0.916	32.5	D
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.011	17.9	C
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.041	19.0	C
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	WB Right	0.666	28.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Attachment 3. Intersection Level of Service Results

Near-Term (2022) Conditions

Vistro File: H:\...\Existing Conditions_AM.vistro
Report File: H:\...\Near Term AM.pdf

Scenario 18 Near Term AM (2019 vols)
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.935	22.9	C
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.724	20.0	B
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.768	38.3	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.722	22.7	C
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	EB Left	0.990	73.8	E
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.815	12.7	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Left	1.229	193.1	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	0.999	25.3	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.827	59.7	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.839	21.9	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.690	9.5	A
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	NB Left	0.711	33.8	C
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.012	69.3	F
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.118	23.2	C
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Thru	1.029	111.1	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Vistro File: H:\...\Existing Conditions_PM.vistro
Report File: H:\...\Near Term PM.pdf

Scenario 18 Near Term PM (2019 vols)
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.793	17.7	B
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.542	15.1	B
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.772	37.0	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.650	18.4	B
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	WB Right	0.956	44.2	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.097	113.1	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.317	180.9	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.808	13.3	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.898	37.4	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.942	25.3	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.863	20.1	C
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	EB Left	0.776	50.0	D
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.011	18.3	C
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.046	20.1	C
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Left	0.909	39.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Attachment 3. Intersection Level of Service Results

Cumulative (2040) Conditions

Vistro File: H:\...\2040(c)_AM.vistro
Report File: H:\...\Cumulative AM.pdf

Scenario 17 111 Indep - Cum No Proj AM
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	1.042	36.4	D
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.809	32.9	C
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.794	39.9	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	NB Right	0.834	28.6	C
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	EB Left	1.040	80.5	F
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	1.170	101.1	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	1.571	325.6	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	1.067	34.2	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	1.063	100.5	F
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	WB Left	1.120	59.2	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.785	11.4	B
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	SB Right	0.844	80.5	F
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Left	1.252	285.6	F
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.261	43.9	E
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	WB Right	3.744	355.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Vistro File: H:\...\2040(c)_PM.vistro
Report File: H:\...\Cumulative PM.pdf

Scenario 17 111 Indep - Cum No Proj PM
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.922	40.3	D
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.667	22.9	C
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.836	46.1	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.713	19.9	B
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	WB Right	0.974	53.0	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.394	215.3	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	SB Left	1.186	206.0	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.922	17.2	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.938	36.7	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	1.174	67.3	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	NB Left	0.997	57.3	E
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	EB Left	1.498	252.2	F
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.011	21.9	C
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.172	134.8	F
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Left	2.493	224.8	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Attachment 3. Intersection Level of Service Results

Near-Term (2022) Plus Project Conditions

Vistro File: H:\...\Existing Conditions_AM.vistro
Report File: H:\...\Near Term plus Project AM.pdf

Scenario 19 Near Term Plus Project AM (2019 vols)
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.937	23.0	C
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.725	20.0	C
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.770	38.3	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.722	22.7	C
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	EB Left	0.992	74.2	E
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.815	12.8	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Left	1.230	193.2	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	1.001	25.5	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.831	59.8	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.839	22.0	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.698	9.7	A
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	NB Left	0.711	33.8	C
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.012	100.4	F
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.124	24.3	C
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Thru	1.046	115.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Vistro File: H:\...\Existing Conditions_PM.vistro
Report File: H:\...\Near Term plus Project PM.pdf

Scenario 19 Near Term Plus Project PM (2019 vols)
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.795	17.8	B
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.542	15.1	B
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.773	37.0	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.651	18.4	B
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	WB Right	0.957	44.3	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.097	113.2	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.317	180.8	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.812	13.4	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.899	37.6	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.942	25.3	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.867	20.5	C
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	SB Thru	0.777	50.4	D
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.011	19.0	C
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.047	20.5	C
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Left	0.921	41.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Attachment 3. Intersection Level of Service Results

Near-Term (2022) Plus Project Conditions, With Modifications

Generated with PTV VISTRO

Version 2020 (SP 0-5)

Option 1: Chrysler Dr/Constitution Dr: Mitigation Near Term Plus Project AM

Number	215											
Intersection	Chrysler Dr/Constitution Dr											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive						Constitution Drive					
Approach	Southbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	79	368	19	15	234	211	36	20	100	2	153	19
Total Analysis Volume [veh/h]	88	423	78	81	276	286	40	79	111	2	247	23

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Isolated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	6	0	0	2	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	46	0	0	25	0	0	19	0	0	46	0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.36	0.36	0.24	0.24	0.24	0.24	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.10	0.32	0.06	0.16	0.20	0.22	0.10	0.10
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	905	1542	1357	1699	1412	1069	1329	1294
c, Capacity [veh/h]	335	563	324	406	337	257	532	472
X, volume / capacity	0.26	0.89	0.25	0.68	0.85	0.89	0.26	0.29
d, Delay for Lane Group [s/veh]	23.35	36.43	24.10	28.62	33.84	39.92	17.42	17.66
Lane Group LOS	C	D	C	C	C	D	B	B
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No

50th-Percentile Queue Length [veh/ln]	1.28	10.00	1.18	4.62	5.33	4.73	1.64	1.65
50th-Percentile Queue Length [ft/ln]	32.05	250.12	29.62	115.55	133.34	118.27	41.10	41.30
95th-Percentile Queue Length [veh/ln]	2.31	15.19	2.13	8.15	9.12	8.30	2.96	2.97
95th-Percentile Queue Length [ft/ln]	57.69	379.81	53.32	203.69	228.02	207.44	73.97	74.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.35	36.43	36.43	24.10	28.62	33.84	39.92	39.92	39.92	17.42	17.53	17.66
Movement LOS	C	D	D	C	C	C	D	D	D	B	B	B
Critical Movement	No	No	No	No	No	No	No	No	Yes	No	No	No
d_A, Approach Delay [s/veh]	34.47			30.37			39.92			17.54		
Approach LOS	C			C			D			B		
d_I, Intersection Delay [s/veh]	31.02											
Intersection LOS	C											
Intersection V/C	0.743											

Option 1: Chrysler Dr/Independence Dr: Mitigation Near Term Plus Project AM

Number	213											
Intersection	Chrysler Dr/Independence Dr											
Control Type	All-way stop											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive			Chrysler Drive						Independence Drive		
Approach	Northbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	51	29	0	31	134	168	1	0	2	124	2	24
Total Analysis Volume [veh/h]	71	53	0	43	192	238	1	0	3	246	3	35

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	640	712	632	646

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	9.97	17.49	8.73	12.89
95th-Percentile Queue Length [veh]	0.71	5.08	0.02	2.25
95th-Percentile Queue Length [ft]	17.82	126.99	0.48	56.17
Approach Delay [s/veh]	9.97	17.49	8.73	12.89
Approach LOS	A	C	A	B
Intersection Delay [s/veh]	14.92			
Intersection LOS	B			

Option 1: Chrysler Dr/Constitution Dr: Mitigation Near Term Plus Project PM

Number	215											
Intersection	Chrysler Dr/Constitution Dr											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name				Chrysler Drive						Constitution Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	2	490	14	194	84	3	128	205	53	13	6	114
Total Analysis Volume [veh/h]	2	509	14	194	95	13	473	299	62	14	16	114

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Isolated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	0	4	0	0	8	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	41	0	0	41	0	0	27	0	0	22	0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.33	0.33	0.33	0.17
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.24	0.06	0.29	0.18	0.05	0.16
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3			3
s, saturation flow rate [veh/h]	1709	1539	792	1674	1609	1686	1326	904
c, Capacity [veh/h]	665	562	252	612	525	549	432	159
X, volume / capacity	0.42	0.44	0.77	0.18	0.90	0.54	0.14	0.91
d, Delay for Lane Group [s/veh]	23.54	24.17	56.18	20.02	37.33	25.72	21.62	53.56
Lane Group LOS	C	C	E	C	D	C	C	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	Yes

50th-Percentile Queue Length [veh/ln]	4.62	4.25	5.67	1.60	10.58	5.21	0.93	3.80
50th-Percentile Queue Length [ft/ln]	115.48	106.23	141.86	40.11	264.60	130.27	23.19	94.88
95th-Percentile Queue Length [veh/ln]	8.14	7.63	9.58	2.89	15.92	8.95	1.67	6.83
95th-Percentile Queue Length [ft/ln]	203.60	190.75	239.52	72.20	397.98	223.86	41.74	170.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.54	23.83	24.17	56.18	20.02	20.02	37.33	25.72	21.62	53.56	53.56	53.56
Movement LOS	C	C	C	E	C	C	D	C	C	D	D	D
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	23.84			43.25			32.00			53.56		
Approach LOS	C			D			C			D		
d_I, Intersection Delay [s/veh]	33.23											
Intersection LOS	C											
Intersection V/C	0.698											

Option 1: Chrysler Dr/Independence Dr: Mitigation Near Term Plus Project PM

Number	213											
Intersection	Chrysler Dr/Independence Dr											
Control Type	All-way stop											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive									Independence Drive		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	37	101	0	1	19	65	2	0	15	244	5	53
Total Analysis Volume [veh/h]	46	124	0	1	26	91	2	0	18	310	6	65

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	696	762	777	749

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	9.83	8.59	7.76	12.67
95th-Percentile Queue Length [veh]	0.96	0.55	0.08	2.92
95th-Percentile Queue Length [ft]	23.89	13.65	1.98	72.98
Approach Delay [s/veh]	9.83	8.59	7.76	12.67
Approach LOS	A	A	A	B
Intersection Delay [s/veh]	11.13			
Intersection LOS	B			

Attachment 3. Intersection Level of Service Results

Cumulative (2040) Plus Project Conditions

Vistro File: H:\...\2040(c)_AM.vistro
Report File: H:\...\Cumulative plus Project AM.pdf

Scenario 16 111 Indep - Cum Plus Proj AM
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	1.044	36.7	D
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.810	32.9	C
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.795	40.0	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	NB Right	0.835	28.6	C
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	EB Left	1.041	81.0	F
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	1.171	101.0	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	1.572	325.5	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	1.068	34.5	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	1.068	101.8	F
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	WB Left	1.120	59.2	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.791	11.9	B
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	SB Right	0.844	80.4	F
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Left	1.451	371.2	F
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.276	46.7	E
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	WB Right	3.811	360.1	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Vistro File: H:\...\2040(c)_PM.vistro
Report File: H:\...\Cumulative plus Project PM.pdf

Scenario 16 111 Indep - Cum Plus Proj PM
9/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.924	41.1	D
2	Marsh Rd/Rolison Rd-Scott Dr	Signalized	HCM 6th Edition	NEB Left	0.667	22.9	C
3	Marsh Rd/Florence St-Bohannon Dr	Signalized	HCM 6th Edition	NB Left	0.836	46.1	D
4	Marsh Rd/Bay Rd	Signalized	HCM 6th Edition	SB Left	0.714	19.9	B
5	Middlefield Rd/Marsh Rd	Signalized	HCM 6th Edition	WB Right	0.975	53.4	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.394	215.2	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	SB Left	1.186	206.3	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.927	17.5	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.939	36.9	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	1.174	67.2	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	NB Left	1.002	58.4	E
207	Chilco St/Constitution Dr	Signalized	HCM 6th Edition	EB Left	1.498	252.2	F
213	Chrysler Dr/Independence Dr	Two-way stop	HCM 6th Edition	SEB Thru	0.011	23.0	C
214	Chrysler Dr/Jefferson Dr	Two-way stop	HCM 6th Edition	NWB Left	0.177	141.0	F
215	Chrysler Dr/Constitution Dr	Signalized	HCM 6th Edition	SB Left	2.540	232.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Attachment 3. Intersection Level of Service Results

Cumulative (2040) Plus Project Conditions, With Modifications

Option 1: Bayfront Expy/Chrysler Drive: Mitigation Cumulative Plus Project AM

Number	196					
Intersection	Bayfront Expy/Chrysler Drive					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Base Volume Input [veh/h]	298	60	1817	156	191	2914
Total Analysis Volume [veh/h]	312	59	1910	160	159	3026

Intersection Settings

Cycle Length [s]	90					
Coordination Type	Free Running					
Actuation Type	Fully actuated					
Lost time [s]	9.00					
Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	7	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	7	10
Maximum Green [s]	25	30	50	0	20	50
Amber [s]	4.1	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	1.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.11	0.11	0.58	0.58	0.11	0.74
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.39	0.11	0.09	0.60
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	3173	1600	4959	1493	1810	5024
c, Capacity [veh/h]	363	183	2878	866	200	3740
X, volume / capacity	0.68	0.68	0.66	0.18	0.80	0.81
d, Delay for Lane Group [s/veh]	34.73	36.91	11.21	7.62	35.89	6.72
Lane Group LOS	C	D	B	A	D	A
Critical Lane Group	No	Yes	No	No	No	Yes

50th-Percentile Queue Length [veh/ln]	2.27	2.40	5.58	0.98	2.82	4.85
50th-Percentile Queue Length [ft/ln]	56.63	60.03	139.58	24.40	70.45	121.26
95th-Percentile Queue Length [veh/ln]	4.08	4.32	9.46	1.76	5.07	8.46
95th-Percentile Queue Length [ft/ln]	101.93	108.06	236.46	43.92	126.81	211.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.18	36.91	11.21	7.62	35.89	6.72
Movement LOS	D	D	B	A	D	A
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	35.46		10.93		8.17	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	10.99					
Intersection LOS	B					
Intersection V/C	0.771					

Option 1: Chrysler Dr/Constitution Dr: Mitigation Cumulative Plus Project AM

Number	215											
Intersection	Chrysler Dr/Constitution Dr											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive			Constitution Drive			Constitution Drive			Chrysler Drive		
Approach	Southbound			Eastbound			Westbound			Northeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	79	417	97	89	250	327	119	74	162	4	230	88
Total Analysis Volume [veh/h]	88	451	79	82	277	414	129	79	180	2	274	97

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Isolated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split
Signal Group	0	6	0	3	8	0	7	4	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	46	0	0	46	0	0	19	0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.08	0.16	0.29	0.41	0.13	0.14	0.14
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3			3		3	
s, saturation flow rate [veh/h]	1461	1543	1006	1699	1414	509	1341	1467	1194
c, Capacity [veh/h]	501	529	88	584	486	242	461	258	210
X, volume / capacity	0.18	1.00	0.93	0.47	0.85	0.86	0.39	0.78	0.82
d, Delay for Lane Group [s/veh]	20.21	66.28	73.92	23.02	38.76	65.41	22.22	39.36	42.33
Lane Group LOS	C	F	E	C	D	E	C	D	D
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes

50th-Percentile Queue Length [veh/ln]	1.24	16.00	2.49	4.40	9.26	6.50	2.77	4.34	3.89
50th-Percentile Queue Length [ft/ln]	31.05	400.03	62.28	110.00	231.43	162.38	69.31	108.49	97.26
95th-Percentile Queue Length [veh/ln]	2.24	22.59	4.48	7.84	14.25	10.67	4.99	7.76	7.00
95th-Percentile Queue Length [ft/ln]	55.89	564.82	112.10	196.01	356.17	266.87	124.75	193.90	175.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.21	66.28	66.28	73.92	23.02	38.76	65.41	65.41	22.22	39.36	40.18	42.33
Movement LOS	C	E	E	E	C	D	E	E	C	D	D	D
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	59.72			36.85			45.37			40.73		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	45.63											
Intersection LOS	D											
Intersection V/C	0.896											

Option 1: Chrysler Dr/Independence Dr: Mitigation Cumulative Plus Project AM_Roundabout

Number	213											
Intersection	Chrysler Dr/Independence Dr											
Control Type	Roundabout											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive			Chrysler Drive						Independence Drive		
Approach	Northbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	53	67	5	31	135	199	29	11	91	169	2	72
Total Analysis Volume [veh/h]	71	106	7	43	194	236	40	15	126	256	3	100

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	345			130			443			389		
Exiting Flow Rate [veh/h]	403			498			97			322		
Demand Flow Rate [veh/h]	51	76	5	31	140	170	29	11	91	184	2	72
Adjusted Demand Flow Rate [veh/h]	71	106	7	43	194	236	40	15	126	256	3	100

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.95	0.85	0.98	1.00
Entry Flow Rate [veh/h]	195	556	185	359
Capacity of Entry and Bypass Lanes [veh/h]	971	1209	879	929
Pedestrian Impedance	0.99	1.00	1.00	0.97
Capacity per Entry Lane [veh/h]	910	1030	859	904
X, volume / capacity	0.20	0.46	0.21	0.40

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	5.97	8.73	6.36	8.58
Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.76	2.46	0.79	1.93
95th-Percentile Queue Length [ft]	18.88	61.56	19.85	48.13
Approach Delay [s/veh]	5.97	8.73	6.36	8.58
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.90			
Intersection LOS	A			

Option 2: Chrysler Dr/Independence Dr: Mitigation Cumulative Plus Project AM_Signal

Number	213											
Intersection	Chrysler Dr/Independence Dr											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive			Chrysler Drive						Independence Drive		
Approach	Northbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	53	67	5	31	135	199	29	11	91	169	2	72
Total Analysis Volume [veh/h]	71	106	7	43	194	236	40	15	126	256	3	100

Intersection Settings

Cycle Length [s]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	0	63	0	0	37	0	0	37	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.49	0.49	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.21	0.45	0.12	0.29
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900
Arrival type	3	3	3	3
s, saturation flow rate [veh/h]	863	1045	1548	1240
c, Capacity [veh/h]	533	599	613	549
X, volume / capacity	0.34	0.79	0.30	0.65
d, Delay for Lane Group [s/veh]	7.06	15.38	11.73	15.30
Lane Group LOS	A	B	B	B
Critical Lane Group	No	Yes	No	Yes

50th-Percentile Queue Length [veh/ln]	0.79	3.79	1.22	3.06
50th-Percentile Queue Length [ft/ln]	19.81	94.73	30.61	76.43
95th-Percentile Queue Length [veh/ln]	1.43	6.82	2.20	5.50
95th-Percentile Queue Length [ft/ln]	35.66	170.51	55.09	137.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.06	7.06	7.06	15.38	15.38	15.38	11.73	11.73	11.73	15.30	15.30	15.30
Movement LOS	A	A	A	B	B	B	B	B	B	B	B	B
Critical Movement	No	No	No	No	No	Yes	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	7.06			15.38			11.73			15.30		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	13.52											
Intersection LOS	B											
Intersection V/C	0.742											

Option 2: Chrysler Dr/Jefferson Dr: Mitigation Cumulative Plus Project AM_Roundabout

Number	214					
Intersection	Chrysler Dr/Jefferson Dr					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Chrysler Drive		Chrysler Drive		Jefferson Drive	
Approach	Southbound		Northeastbound		Northwestbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Base Volume Input [veh/h]	333	298	120	69	25	106
Total Analysis Volume [veh/h]	429	299	118	115	29	145

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	29		441		149	
Exiting Flow Rate [veh/h]	320		359		564	
Demand Flow Rate [veh/h]	390	272	107	105	26	132
Adjusted Demand Flow Rate [veh/h]	429	299	118	115	29	145

Lanes

Overwrite Calculated Critical Headway	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102
HV Adjustment Factor	0.95	0.86	0.87
Entry Flow Rate [veh/h]	770	271	200
Capacity of Entry and Bypass Lanes [veh/h]	1340	881	1186
Pedestrian Impedance	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1268	760	1034
X, volume / capacity	0.57	0.31	0.17

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	9.47	8.36	5.03
Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	3.83	1.30	0.60
95th-Percentile Queue Length [ft]	95.75	32.54	15.10
Approach Delay [s/veh]	9.47	8.36	5.03
Approach LOS	A	A	A
Intersection Delay [s/veh]	8.56		
Intersection LOS	A		

Option 1: Chrysler Dr/Jefferson Dr: Mitigation Cumulative Plus Project AM_Signal

Number	214					
Intersection	Chrysler Dr/Jefferson Dr					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Chrysler Drive		Chrysler Drive		Jefferson Drive	
Approach	Southbound		Northeastbound		Northwestbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Base Volume Input [veh/h]	333	298	120	69	25	106
Total Analysis Volume [veh/h]	429	299	118	115	29	145

Intersection Settings

Cycle Length [s]	70					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	0.00					
Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	0	8	4	0	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	5	5	0	5	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	48	48	0	22	0
Walk [s]	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.67	0.67	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.75	0.19	0.02	0.12
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900
Arrival type	3	3	3	
s, saturation flow rate [veh/h]	965	1249	1629	1245
c, Capacity [veh/h]	776	838	244	187
X, volume / capacity	0.94	0.28	0.12	0.78
d, Delay for Lane Group [s/veh]	31.38	3.15	16.66	25.06
Lane Group LOS	C	A	B	C
Critical Lane Group	Yes	No	No	Yes

50th-Percentile Queue Length [veh/ln]	9.38	0.38	0.25	1.65
50th-Percentile Queue Length [ft/ln]	234.48	9.52	6.19	41.20
95th-Percentile Queue Length [veh/ln]	14.40	0.69	0.45	2.97
95th-Percentile Queue Length [ft/ln]	360.04	17.13	11.15	74.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.38	31.38	3.15	3.15	16.66	25.06
Movement LOS	C	C	A	A	B	C
Critical Movement	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	31.38		3.15		23.66	
Approach LOS	C		A		C	
d_I, Intersection Delay [s/veh]	24.40					
Intersection LOS	C					
Intersection V/C	0.871					

Option 1: Bayfront Expy/Marsh Rd: Mitigation Cumulative Plus Project AM

Number	163											
Intersection	Bayfront Expy/Marsh Rd											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	199	49	1832	10	35	8	9	212	385	2677	407	34
Total Analysis Volume [veh/h]	207	51	1921	10	36	8	9	245	401	2801	439	35

Intersection Settings

Cycle Length [s]	160											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	12.00											
Control Type	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	8	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	10	6	6	0	4	0	4	12	4	0	10	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	0.0	3.6	3.6	3.6	0.0	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	82	11	11	0	32	0	32	35	32	0	82	0
Walk [s]	5	0	0	0	5	0	5	5	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	0	22	26	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.09	0.60	0.18	0.18	0.18	0.18	0.18	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.14	0.47	0.02	0.02	0.15	0.16	0.16	0.55	0.26
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3			3	
s, saturation flow rate [veh/h]	1827	4119	1867	1608	1624	1221	1434	5075	1792
c, Capacity [veh/h]	166	2386	340	293	289	217	255	2534	895
X, volume / capacity	1.55	0.81	0.08	0.09	0.83	0.88	0.88	1.11	0.53
d, Delay for Lane Group [s/veh]	347.89	29.43	54.41	54.46	77.40	89.47	86.63	94.11	29.52
Lane Group LOS	F	C	D	D	E	F	F	F	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No

50th-Percentile Queue Length [veh/ln]	19.59	19.57	0.97	0.88	10.58	9.13	10.53	45.32	13.03
50th-Percentile Queue Length [ft/ln]	489.73	489.28	24.16	21.93	264.51	228.36	263.22	1132.98	325.78
95th-Percentile Queue Length [veh/ln]	30.85	26.83	1.74	1.58	15.91	14.09	15.85	60.99	18.95
95th-Percentile Queue Length [ft/ln]	771.21	670.66	43.49	39.48	397.87	352.28	396.26	1524.85	473.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	347.89	347.89	29.43	54.41	54.43	54.46	77.40	78.11	87.81	94.11	29.52	29.52
Movement LOS	F	F	C	D	D	D	E	E	F	F	C	C
Critical Movement	Yes	No	No	No	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	67.13			54.43			84.08			84.76		
Approach LOS	E			D			F			F		
d_I, Intersection Delay [s/veh]	78.19											
Intersection LOS	E											
Intersection V/C	0.936											

Option 1: Bayfront Expy/Chrysler Drive: Mitigation Cumulative Plus Project PM

Number	196					
Intersection	Bayfront Expy/Chrysler Drive					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Base Volume Input [veh/h]	1249	114	2516	167	65	1716
Total Analysis Volume [veh/h]	1274	80	2567	170	56	1793

Intersection Settings

Cycle Length [s]	90					
Coordination Type	Free Running					
Actuation Type	Fully actuated					
Lost time [s]	9.00					
Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.27	0.27	0.53	0.53	0.04	0.62
(v / s)_i Volume / Saturation Flow Rate	0.26	0.26	0.51	0.11	0.03	0.36
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	3464	1773	5061	1569	1810	4975
c, Capacity [veh/h]	923	472	2694	835	77	3077
X, volume / capacity	0.96	0.98	0.95	0.20	0.73	0.58
d, Delay for Lane Group [s/veh]	37.39	67.44	21.85	11.52	49.27	10.74
Lane Group LOS	D	E	C	B	D	B
Critical Lane Group	No	Yes	Yes	No	Yes	No

50th-Percentile Queue Length [veh/ln]	10.28	14.71	15.20	1.65	1.34	5.98
50th-Percentile Queue Length [ft/ln]	256.88	367.75	379.90	41.16	33.50	149.49
95th-Percentile Queue Length [veh/ln]	15.53	21.00	21.59	2.96	2.41	9.99
95th-Percentile Queue Length [ft/ln]	388.30	525.00	539.72	74.09	60.30	249.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.42	67.44	21.85	11.52	49.27	10.74
Movement LOS	D	E	C	B	D	B
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	47.70		21.21		11.91	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	24.35					
Intersection LOS	C					
Intersection V/C	0.885					

Option 1: Chrysler Dr/Constitution Dr: Mitigation Cumulative Plus Project PM

Number	215											
Intersection	Chrysler Dr/Constitution Dr											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive			Chrysler Drive			Constitution Drive			Constitution Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	3	762	147	334	94	27	538	302	82	15	17	283
Total Analysis Volume [veh/h]	2	790	144	334	95	16	474	299	99	14	16	283

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Isolated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	5	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	0	4	0	4	4	0	0	4	0
Maximum Green [s]	0	26	0	0	46	0	16	26	0	0	21	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	41	0	0	41	0	11	27	0	0	22	0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.25	0.25	0.25	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.29	0.30	0.62	0.07	0.29	0.18	0.08	0.03	0.20
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3			3	
s, saturation flow rate [veh/h]	1705	1467	541	1666	1609	1686	1313	1011	1384
c, Capacity [veh/h]	743	605	159	687	410	429	334	202	277
X, volume / capacity	0.68	0.72	2.10	0.16	1.16	0.70	0.30	0.15	1.02
d, Delay for Lane Group [s/veh]	26.93	29.21	556.13	17.17	126.92	33.51	27.54	30.03	86.51
Lane Group LOS	C	C	F	B	F	C	C	C	F
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	Yes

50th-Percentile Queue Length [veh/ln]	9.43	8.47	26.28	1.50	19.27	6.09	1.73	0.55	9.80
50th-Percentile Queue Length [ft/ln]	235.77	211.84	657.05	37.57	481.74	152.28	43.26	13.70	245.09
95th-Percentile Queue Length [veh/ln]	14.47	13.25	46.46	2.70	28.71	10.14	3.11	0.99	15.11
95th-Percentile Queue Length [ft/ln]	361.68	331.18	1161.55	67.62	717.72	253.47	77.86	24.67	377.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.93	27.77	29.21	556.13	17.17	17.17	126.92	33.51	27.54	30.03	30.03	86.51
Movement LOS	C	C	C	F	B	B	F	C	C	C	C	F
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	27.99			421.69			83.61			81.10		
Approach LOS	C			F			F			F		
d_I, Intersection Delay [s/veh]	121.64											
Intersection LOS	F											
Intersection V/C	1.116											

Option 1: Chrysler Dr/Independence Dr: Mitigation Cumulative Plus Project PM_Roundabout

Number	213											
Intersection	Chrysler Dr/Independence Dr											
Control Type	Roundabout											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive									Independence Drive		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	39	139	0	1	28	84	2	0	15	316	5	67
Total Analysis Volume [veh/h]	46	176	0	1	46	88	2	0	18	320	6	79

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	346			48			566			50		
Exiting Flow Rate [veh/h]	127			538			8			134		
Demand Flow Rate [veh/h]	38	144	0	1	38	72	2	0	15	262	5	65
Adjusted Demand Flow Rate [veh/h]	46	176	0	1	46	88	2	0	18	320	6	79

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	1.00	1.00	0.96
Entry Flow Rate [veh/h]	228	136	20	424
Capacity of Entry and Bypass Lanes [veh/h]	970	1315	776	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	948	1309	775	1256
X, volume / capacity	0.23	0.10	0.03	0.32

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	6.13	3.58	4.90	5.84
Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.91	0.34	0.08	1.41
95th-Percentile Queue Length [ft]	22.74	8.61	1.99	35.24
Approach Delay [s/veh]	6.13	3.58	4.90	5.84
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.51			
Intersection LOS	A			

Option 2: Chrysler Dr/Independence Dr: Mitigation Cumulative Plus Project PM_Signal

Number	213											
Intersection	Chrysler Dr/Independence Dr											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name	Chrysler Drive									Independence Drive		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	39	139	0	1	28	84	2	0	15	316	5	67
Total Analysis Volume [veh/h]	46	176	0	1	46	88	2	0	18	320	6	79

Intersection Settings

Cycle Length [s]	120											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	30	0	0	30	0	0	90	0	0	90	0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.20	0.20	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.08	0.01	0.29
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900
Arrival type	3	3	3	3
s, saturation flow rate [veh/h]	1648	1637	1545	1413
c, Capacity [veh/h]	563	521	779	868
X, volume / capacity	0.39	0.26	0.03	0.47
d, Delay for Lane Group [s/veh]	7.22	6.69	3.75	5.37
Lane Group LOS	A	A	A	A
Critical Lane Group	Yes	No	No	Yes

50th-Percentile Queue Length [veh/ln]	0.36	0.21	0.01	0.27
50th-Percentile Queue Length [ft/ln]	9.12	5.20	0.23	6.68
95th-Percentile Queue Length [veh/ln]	0.66	0.37	0.02	0.48
95th-Percentile Queue Length [ft/ln]	16.42	9.36	0.42	12.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.22	7.22	7.22	6.69	6.69	6.69	3.75	3.75	3.75	5.37	5.37	5.37
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
Critical Movement	No	Yes	No	No	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	7.22			6.69			3.75			5.37		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.08											
Intersection LOS	A											
Intersection V/C	0.421											

Option 2: Chrysler Dr/Jefferson Dr: Mitigation Cumulative Plus Project PM_IRoundabout

Number	214					
Intersection	Chrysler Dr/Jefferson Dr					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name			Chrysler Drive		Jefferson Drive	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Base Volume Input [veh/h]	428	185	151	86	23	371
Total Analysis Volume [veh/h]	428	235	207	93	33	541

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	253		33		431	
Exiting Flow Rate [veh/h]	166		984		656	
Demand Flow Rate [veh/h]	364	200	176	79	28	460
Adjusted Demand Flow Rate [veh/h]	428	235	207	93	33	541

Lanes

Overwrite Calculated Critical Headway	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102
HV Adjustment Factor	0.85	0.78	0.98
Entry Flow Rate [veh/h]	783	384	586
Capacity of Entry and Bypass Lanes [veh/h]	1067	1335	889
Pedestrian Impedance	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	904	1043	871
X, volume / capacity	0.73	0.29	0.66

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	17.80	6.28	15.05
Lane LOS	C	A	C
95th-Percentile Queue Length [veh]	6.76	1.20	5.10
95th-Percentile Queue Length [ft]	168.97	29.90	127.55
Approach Delay [s/veh]	17.80	6.28	15.05
Approach LOS	C	A	C
Intersection Delay [s/veh]	14.52		
Intersection LOS	B		

Option 1: Chrysler Dr/Jefferson Dr: Mitigation Cumulative Plus Project PM_Signal

Number	214					
Intersection	Chrysler Dr/Jefferson Dr					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name			Chrysler Drive		Jefferson Drive	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Base Volume Input [veh/h]	428	185	151	86	23	371
Total Analysis Volume [veh/h]	428	235	207	93	33	541

Intersection Settings

Cycle Length [s]	100					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	0.00					
Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	4	0	3	8	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	5	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	78	0	104	78	22	0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.47	0.47	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.41	0.84	0.02	0.38
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900
Arrival type	3	3	3	
s, saturation flow rate [veh/h]	1599	359	1629	1428
c, Capacity [veh/h]	751	264	660	579
X, volume / capacity	0.88	1.14	0.05	0.94
d, Delay for Lane Group [s/veh]	26.25	122.95	11.57	35.57
Lane Group LOS	C	F	B	D
Critical Lane Group	No	Yes	No	Yes

50th-Percentile Queue Length [veh/ln]	9.69		11.08		0.26	9.47
50th-Percentile Queue Length [ft/ln]	242.36		277.09		6.60	236.80
95th-Percentile Queue Length [veh/ln]	14.80		17.95		0.48	14.52
95th-Percentile Queue Length [ft/ln]	370.01		448.69		11.88	362.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.25	26.25	122.95	122.95	11.57	35.57
Movement LOS	C	C	F	F	B	D
Critical Movement	No	No	Yes	No	No	No
d_A, Approach Delay [s/veh]	26.25		122.95		34.19	
Approach LOS	C		F		C	
d_I, Intersection Delay [s/veh]	48.09					
Intersection LOS	D					
Intersection V/C	1.215					

Option 1: Bayfront Expy/Marsh Rd: Mitigation Cumulative Plus Project PM

Number	163											
Intersection	Bayfront Expy/Marsh Rd											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	180	40	2131	16	31	5	9	518	209	2657	132	14
Total Analysis Volume [veh/h]	188	42	2220	17	32	5	9	540	218	2782	166	15

Intersection Settings

Cycle Length [s]	160											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	12.00											
Control Type	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	8	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	10	6	6	0	4	0	4	12	4	0	10	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	0.0	3.6	3.6	3.6	0.0	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	82	11	11	0	32	0	32	35	32	0	82	0
Walk [s]	5	0	0	0	5	0	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	0	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.08	0.79	0.04	0.04	0.17	0.17	0.17	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.13	0.53	0.02	0.01	0.15	0.16	0.14	0.54	0.11
so, Base Saturation Flow per Lane [pc/h/ln]	1900	1900	1900	1900	1900	1900	1900	1900	1900
Arrival type	3		3		3			3	
s, saturation flow rate [veh/h]	1825	4190	1522	1652	1891	1724	1587	5150	1657
c, Capacity [veh/h]	152	3233	101	72	322	293	270	3311	1066
X, volume / capacity	1.51	0.69	0.30	0.33	0.86	0.92	0.81	0.84	0.17
d, Delay for Lane Group [s/veh]	333.66	10.08	75.29	75.29	78.37	89.60	73.53	24.93	11.79
Lane Group LOS	F	B	E	E	E	F	E	C	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No

50th-Percentile Queue Length [veh/ln]	17.31	11.80	1.23	0.98	12.32	12.89	9.32	26.98	2.74
50th-Percentile Queue Length [ft/ln]	432.74	294.97	30.85	24.57	308.09	322.36	232.91	674.52	68.39
95th-Percentile Queue Length [veh/ln]	27.42	17.43	2.22	1.77	18.08	18.78	14.32	35.50	4.92
95th-Percentile Queue Length [ft/ln]	685.51	435.80	55.53	44.23	452.02	469.58	358.06	887.49	123.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	333.66	333.66	10.08	75.29	75.29	75.29	78.37	84.00	73.53	24.93	11.79	11.79
Movement LOS	F	F	B	E	E	E	E	F	E	C	B	B
Critical Movement	Yes	No	No	No	No	No	No	No	No	No	No	No
d_A, Approach Delay [s/veh]	40.46			75.29			80.96			24.13		
Approach LOS	D			E			F			C		
d_I, Intersection Delay [s/veh]	37.98											
Intersection LOS	D											
Intersection V/C	0.939											

APPENDIX F

AIR QUALITY/GREENHOUSE GAS EMISSIONS DATA

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111 Independence Drive Project

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	115.00	Space	0.02	49,582.00	0
City Park	0.38	Acre	0.38	16,476.00	0
Apartments Mid Rise	105.00	Dwelling Unit	0.50	145,350.00	300
Strip Mall	0.71	1000sqft	0.02	712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E, 2015)

Land Use - The proposed project would include an 144,599-gross-square-foot (gsf), eight-story multi-family apartment building with 106 dwelling units and a 500 -square-foot commercial space, as well as associated open space and parking.

Construction Phase - 21-month construction period

Demolition - The project would include the demolition of the 15,000-square-foot existing building.

Grading - 1,575 cubic yards of soil would be off-hauled and 400 cubic yards of soil would be imported

Vehicle Trips - Based on trip generation prepared for the project.

Energy Use -

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and tier 2 construction equipment

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Assuming compliance with 2019 Title 24 standards, installation of high efficiency lighting, and energy-efficient appliances

Water Mitigation - Assuming low-flow appliances

Waste Mitigation - Consistent with the CalRecycle Waste Diversion and Recycling Mandate which will reduce solid waste production by 75 percent.

Woodstoves - Assuming no hearth as the proposed project would not increase the demand for natural gas as the City's REACH codes would require the buildings to be all electric.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	1.00	30.00
tblFireplaces	NumberGas	15.75	0.00
tblFireplaces	NumberWood	17.85	0.00
tblGrading	MaterialExported	0.00	1,575.00
tblGrading	MaterialImported	0.00	400.00
tblLandUse	LandUseSquareFeet	46,000.00	49,582.00
tblLandUse	LandUseSquareFeet	16,552.80	16,476.00
tblLandUse	LandUseSquareFeet	105,000.00	145,350.00
tblLandUse	LandUseSquareFeet	710.00	712.00
tblLandUse	LotAcreage	1.03	0.02
tblLandUse	LotAcreage	2.76	0.50

tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	6.39	7.27
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	5.86	7.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	6.65	7.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0879	0.8488	0.7550	1.8100e-003	0.0801	0.0367	0.1168	0.0226	0.0341	0.0567	0.0000	163.4714	163.4714	0.0275	0.0000	164.1597
2022	0.8722	0.6003	0.7412	1.4100e-003	0.0320	0.0292	0.0612	8.5700e-003	0.0274	0.0360	0.0000	121.6667	121.6667	0.0244	0.0000	122.2764
2023	0.2431	0.0201	0.0331	7.0000e-005	2.4900e-003	1.0800e-003	3.5700e-003	6.6000e-004	1.0800e-003	1.7400e-003	0.0000	5.7793	5.7793	2.7000e-004	0.0000	5.7860
Maximum	**0.8722**	**0.8488**	**0.7550**	**1.8100e-003**	**0.0801**	**0.0367**	**0.1168**	**0.0226**	**0.0341**	**0.0567**	**0.0000**	**163.4714**	**163.4714**	**0.0275**	**0.0000**	**164.1597**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0607	1.0667	0.8257	1.8100e-003	0.0654	0.0326	0.0980	0.0181	0.0326	0.0506	0.0000	163.4713	163.4713	0.0275	0.0000	164.1596
2022	0.8481	0.8622	0.7457	1.4100e-003	0.0320	0.0306	0.0626	8.5700e-003	0.0306	0.0391	0.0000	121.6665	121.6665	0.0244	0.0000	122.2763
2023	0.2419	0.0358	0.0335	7.0000e-005	2.4900e-003	1.4400e-003	3.9300e-003	6.6000e-004	1.4400e-003	2.1000e-003	0.0000	5.7793	5.7793	2.7000e-004	0.0000	5.7860
Maximum	**0.8481**	**1.0667**	**0.8257**	**1.8100e-003**	**0.0654**	**0.0326**	**0.0980**	**0.0181**	**0.0326**	**0.0506**	**0.0000**	**163.4713**	**163.4713**	**0.0275**	**0.0000**	**164.1596**

111 Independence Drive Project - Bay Area AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.37**	**-33.73**	**-4.94**	**0.00**	**12.83**	**3.51**	**9.40**	**14.18**	**-3.18**	**2.68**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-3-2021**	**8-2-2021**	0.2935	0.3482
2	**8-3-2021**	**11-2-2021**	0.3681	0.4471
3	**11-3-2021**	**2-2-2022**	0.3707	0.4623
4	**2-3-2022**	**5-2-2022**	0.2191	0.2916
5	**5-3-2022**	**8-2-2022**	0.2185	0.2909
6	**8-3-2022**	**11-2-2022**	0.5287	0.5610
7	**11-3-2022**	**2-2-2023**	0.5794	0.6089
8	**2-3-2023**	**5-2-2023**	0.0502	0.0529
		Highest	0.5794	0.6089

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7094	0.0102	0.8559	2.9000e-004		0.0166	0.0166		0.0166	0.0166	1.6377	1.2756	2.9133	8.8900e-003	0.0000	3.1354
Energy	4.9600e-003	0.0424	0.0181	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	130.6674	130.6674	8.1400e-003	2.3900e-003	131.5826
Mobile	0.1736	0.7688	1.9722	7.3300e-003	0.6561	6.0100e-003	0.6621	0.1761	5.6100e-003	0.1817	0.0000	673.9403	673.9403	0.0234	0.0000	674.5254
Waste						0.0000	0.0000		0.0000	0.0000	9.9628	0.0000	9.9628	0.5888	0.0000	24.6824
Water						0.0000	0.0000		0.0000	0.0000	2.1871	8.0678	10.2548	0.2253	5.4500e-003	17.5130
Total	**0.8880**	**0.8215**	**2.8461**	**7.8900e-003**	**0.6561**	**0.0260**	**0.6821**	**0.1761**	**0.0256**	**0.2017**	**13.7875**	**813.9511**	**827.7386**	**0.8546**	**7.8400e-003**	**851.4387**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7094	0.0102	0.8559	2.9000e-004		0.0166	0.0166		0.0166	0.0166	1.6377	1.2756	2.9133	8.8900e-003	0.0000	3.1354
Energy	4.7200e-003	0.0403	0.0172	2.6000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	123.6048	123.6048	7.6800e-003	2.2600e-003	124.4702
Mobile	0.1653	0.7179	1.7757	6.4100e-003	0.5669	5.2900e-003	0.5722	0.1521	4.9400e-003	0.1571	0.0000	589.1849	589.1849	0.0211	0.0000	589.7123
Waste						0.0000	0.0000		0.0000	0.0000	2.4907	0.0000	2.4907	0.1472	0.0000	6.1706
Water						0.0000	0.0000		0.0000	0.0000	1.7497	6.9551	8.7048	0.1803	4.3700e-003	14.5151
Total	**0.8794**	**0.7685**	**2.6488**	**6.9600e-003**	**0.5669**	**0.0251**	**0.5920**	**0.1521**	**0.0248**	**0.1769**	**5.8780**	**721.0204**	**726.8984**	**0.3652**	**6.6300e-003**	**738.0035**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.97**	**6.45**	**6.93**	**11.79**	**13.60**	**3.42**	**13.21**	**13.60**	**3.28**	**12.29**	**57.37**	**11.42**	**12.18**	**57.27**	**15.43**	**13.32**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	5/21/2021	5	15	
2	Site Preparation	Site Preparation	5/24/2021	7/2/2021	5	30	
3	Grading	Grading	7/5/2021	8/13/2021	5	30	
4	Building Construction	Building Construction	8/16/2021	2/11/2022	5	130	
5	Paving	Paving	2/14/2022	8/12/2022	5	130	
6	Architectural Coating	Architectural Coating	8/15/2022	2/10/2023	5	130	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.02

Residential Indoor: 294,334; Residential Outdoor: 98,111; Non-Residential Indoor: 1,068; Non-Residential Outdoor: 356; Striped Parking Area: 2,975 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	68.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	197.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	104.00	22.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.3800e-003	0.0000	7.3800e-003	1.1200e-003	0.0000	1.1200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0544	0.0568	9.0000e-005		3.0600e-003	3.0600e-003		2.9100e-003	2.9100e-003	0.0000	7.8070	7.8070	1.4500e-003	0.0000	7.8434
Total	**5.9700e-003**	**0.0544**	**0.0568**	**9.0000e-005**	**7.3800e-003**	**3.0600e-003**	**0.0104**	**1.1200e-003**	**2.9100e-003**	**4.0300e-003**	**0.0000**	**7.8070**	**7.8070**	**1.4500e-003**	**0.0000**	**7.8434**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.1800e-003	1.9600e-003	3.0000e-005	5.7000e-004	3.0000e-005	6.0000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.5723	2.5723	1.3000e-004	0.0000	2.5755
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.6000e-004	1.6800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5010	0.5010	1.0000e-005	0.0000	0.5013
Total	**5.0000e-004**	**9.3400e-003**	**3.6400e-003**	**4.0000e-005**	**1.1600e-003**	**3.0000e-005**	**1.2000e-003**	**3.2000e-004**	**3.0000e-005**	**3.5000e-004**	**0.0000**	**3.0732**	**3.0732**	**1.4000e-004**	**0.0000**	**3.0768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3200e-003	0.0000	3.3200e-003	5.0000e-004	0.0000	5.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6300e-003	0.0778	0.0595	9.0000e-005		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003	0.0000	7.8070	7.8070	1.4500e-003	0.0000	7.8434
Total	**3.6300e-003**	**0.0778**	**0.0595**	**9.0000e-005**	**3.3200e-003**	**3.0100e-003**	**6.3300e-003**	**5.0000e-004**	**3.0100e-003**	**3.5100e-003**	**0.0000**	**7.8070**	**7.8070**	**1.4500e-003**	**0.0000**	**7.8434**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.1800e-003	1.9600e-003	3.0000e-005	5.7000e-004	3.0000e-005	6.0000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.5723	2.5723	1.3000e-004	0.0000	2.5755
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.6000e-004	1.6800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5010	0.5010	1.0000e-005	0.0000	0.5013
Total	**5.0000e-004**	**9.3400e-003**	**3.6400e-003**	**4.0000e-005**	**1.1600e-003**	**3.0000e-005**	**1.2000e-003**	**3.2000e-004**	**3.0000e-005**	**3.5000e-004**	**0.0000**	**3.0732**	**3.0732**	**1.4000e-004**	**0.0000**	**3.0768**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.9800e-003	0.0000	7.9800e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-003	0.1173	0.0604	1.5000e-004		4.4900e-003	4.4900e-003		4.1300e-003	4.1300e-003	0.0000	12.8265	12.8265	4.1500e-003	0.0000	12.9302
Total	**9.6000e-003**	**0.1173**	**0.0604**	**1.5000e-004**	**7.9800e-003**	**4.4900e-003**	**0.0125**	**8.6000e-004**	**4.1300e-003**	**4.9900e-003**	**0.0000**	**12.8265**	**12.8265**	**4.1500e-003**	**0.0000**	**12.9302**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-004	6.7500e-003	1.4400e-003	2.0000e-005	4.2000e-004	2.0000e-005	4.4000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.8914	1.8914	1.0000e-004	0.0000	1.8938
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.6000e-004	1.6800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5010	0.5010	1.0000e-005	0.0000	0.5013
Total	**4.3000e-004**	**6.9100e-003**	**3.1200e-003**	**3.0000e-005**	**1.0100e-003**	**2.0000e-005**	**1.0400e-003**	**2.8000e-004**	**2.0000e-005**	**3.0000e-004**	**0.0000**	**2.3924**	**2.3924**	**1.1000e-004**	**0.0000**	**2.3950**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5900e-003	0.0000	3.5900e-003	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.1293	0.0879	1.5000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	12.8265	12.8265	4.1500e-003	0.0000	12.9302
Total	**4.6200e-003**	**0.1293**	**0.0879**	**1.5000e-004**	**3.5900e-003**	**3.6100e-003**	**7.2000e-003**	**3.9000e-004**	**3.6100e-003**	**4.0000e-003**	**0.0000**	**12.8265**	**12.8265**	**4.1500e-003**	**0.0000**	**12.9302**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-004	6.7500e-003	1.4400e-003	2.0000e-005	4.2000e-004	2.0000e-005	4.4000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.8914	1.8914	1.0000e-004	0.0000	1.8938
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.6000e-004	1.6800e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5010	0.5010	1.0000e-005	0.0000	0.5013
Total	**4.3000e-004**	**6.9100e-003**	**3.1200e-003**	**3.0000e-005**	**1.0100e-003**	**2.0000e-005**	**1.0400e-003**	**2.8000e-004**	**2.0000e-005**	**3.0000e-004**	**0.0000**	**2.3924**	**2.3924**	**1.1000e-004**	**0.0000**	**2.3950**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	6.2200e-003	0.0000	6.2200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.1088	0.1135	1.8000e-004		6.1100e-003	6.1100e-003		5.8300e-003	5.8300e-003	0.0000	15.6140	15.6140	2.9100e-003	0.0000	15.6868
Total	**0.0120**	**0.1088**	**0.1135**	**1.8000e-004**	**0.0114**	**6.1100e-003**	**0.0175**	**6.2200e-003**	**5.8300e-003**	**0.0121**	**0.0000**	**15.6140**	**15.6140**	**2.9100e-003**	**0.0000**	**15.6868**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.8000e-004	0.0266	5.6600e-003	8.0000e-005	1.6600e-003	8.0000e-005	1.7500e-003	4.6000e-004	8.0000e-005	5.4000e-004	0.0000	7.4520	7.4520	3.8000e-004	0.0000	7.4615
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.3600e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0020	1.0020	2.0000e-005	0.0000	1.0026
Total	**1.2400e-003**	**0.0269**	**9.0200e-003**	**9.0000e-005**	**2.8500e-003**	**9.0000e-005**	**2.9400e-003**	**7.8000e-004**	**9.0000e-005**	**8.6000e-004**	**0.0000**	**8.4539**	**8.4539**	**4.0000e-004**	**0.0000**	**8.4640**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.1200e-003	0.0000	5.1200e-003	2.8000e-003	0.0000	2.8000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2700e-003	0.1555	0.1191	1.8000e-004		6.0300e-003	6.0300e-003		6.0300e-003	6.0300e-003	0.0000	15.6140	15.6140	2.9100e-003	0.0000	15.6867
Total	**7.2700e-003**	**0.1555**	**0.1191**	**1.8000e-004**	**5.1200e-003**	**6.0300e-003**	**0.0112**	**2.8000e-003**	**6.0300e-003**	**8.8300e-003**	**0.0000**	**15.6140**	**15.6140**	**2.9100e-003**	**0.0000**	**15.6867**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.8000e-004	0.0266	5.6600e-003	8.0000e-005	1.6600e-003	8.0000e-005	1.7500e-003	4.6000e-004	8.0000e-005	5.4000e-004	0.0000	7.4520	7.4520	3.8000e-004	0.0000	7.4615
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.3600e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0020	1.0020	2.0000e-005	0.0000	1.0026
Total	**1.2400e-003**	**0.0269**	**9.0200e-003**	**9.0000e-005**	**2.8500e-003**	**9.0000e-005**	**2.9400e-003**	**7.8000e-004**	**9.0000e-005**	**8.6000e-004**	**0.0000**	**8.4539**	**8.4539**	**4.0000e-004**	**0.0000**	**8.4640**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0388	0.3993	0.3632	5.7000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	50.0410	50.0410	0.0162	0.0000	50.4456
Total	**0.0388**	**0.3993**	**0.3632**	**5.7000e-004**		**0.0224**	**0.0224**		**0.0206**	**0.0206**	**0.0000**	**50.0410**	**50.0410**	**0.0162**	**0.0000**	**50.4456**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4900e-003	0.1149	0.0287	3.0000e-004	7.2100e-003	2.5000e-004	7.4600e-003	2.0900e-003	2.4000e-004	2.3300e-003	0.0000	28.5278	28.5278	1.4000e-003	0.0000	28.5629
Worker	0.0160	0.0110	0.1166	3.8000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112	0.0000	34.7355	34.7355	7.8000e-004	0.0000	34.7550
Total	**0.0195**	**0.1259**	**0.1453**	**6.8000e-004**	**0.0483**	**5.2000e-004**	**0.0488**	**0.0130**	**4.9000e-004**	**0.0135**	**0.0000**	**63.2633**	**63.2633**	**2.1800e-003**	**0.0000**	**63.3179**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0235	0.5351	0.3981	5.7000e-004		0.0193	0.0193		0.0193	0.0193	0.0000	50.0410	50.0410	0.0162	0.0000	50.4456
Total	**0.0235**	**0.5351**	**0.3981**	**5.7000e-004**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**50.0410**	**50.0410**	**0.0162**	**0.0000**	**50.4456**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4900e-003	0.1149	0.0287	3.0000e-004	7.2100e-003	2.5000e-004	7.4600e-003	2.0900e-003	2.4000e-004	2.3300e-003	0.0000	28.5278	28.5278	1.4000e-003	0.0000	28.5629
Worker	0.0160	0.0110	0.1166	3.8000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112	0.0000	34.7355	34.7355	7.8000e-004	0.0000	34.7550
Total	**0.0195**	**0.1259**	**0.1453**	**6.8000e-004**	**0.0483**	**5.2000e-004**	**0.0488**	**0.0130**	**4.9000e-004**	**0.0135**	**0.0000**	**63.2633**	**63.2633**	**2.1800e-003**	**0.0000**	**63.3179**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1054	0.1073	1.7000e-004		5.5800e-003	5.5800e-003		5.1300e-003	5.1300e-003	0.0000	15.0222	15.0222	4.8600e-003	0.0000	15.1436
Total	**0.0103**	**0.1054**	**0.1073**	**1.7000e-004**		**5.5800e-003**	**5.5800e-003**		**5.1300e-003**	**5.1300e-003**	**0.0000**	**15.0222**	**15.0222**	**4.8600e-003**	**0.0000**	**15.1436**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8000e-004	0.0326	8.0900e-003	9.0000e-005	2.1600e-003	7.0000e-005	2.2300e-003	6.3000e-004	6.0000e-005	6.9000e-004	0.0000	8.4744	8.4744	4.0000e-004	0.0000	8.4845
Worker	4.4600e-003	2.9600e-003	0.0322	1.1000e-004	0.0123	8.0000e-005	0.0124	3.2800e-003	7.0000e-005	3.3500e-003	0.0000	10.0386	10.0386	2.1000e-004	0.0000	10.0439
Total	**5.4400e-003**	**0.0356**	**0.0402**	**2.0000e-004**	**0.0145**	**1.5000e-004**	**0.0146**	**3.9100e-003**	**1.3000e-004**	**4.0400e-003**	**0.0000**	**18.5130**	**18.5130**	**6.1000e-004**	**0.0000**	**18.5283**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.0600e-003	0.1605	0.1194	1.7000e-004		5.7800e-003	5.7800e-003		5.7800e-003	5.7800e-003	0.0000	15.0221	15.0221	4.8600e-003	0.0000	15.1436
Total	**7.0600e-003**	**0.1605**	**0.1194**	**1.7000e-004**		**5.7800e-003**	**5.7800e-003**		**5.7800e-003**	**5.7800e-003**	**0.0000**	**15.0221**	**15.0221**	**4.8600e-003**	**0.0000**	**15.1436**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8000e-004	0.0326	8.0900e-003	9.0000e-005	2.1600e-003	7.0000e-005	2.2300e-003	6.3000e-004	6.0000e-005	6.9000e-004	0.0000	8.4744	8.4744	4.0000e-004	0.0000	8.4845
Worker	4.4600e-003	2.9600e-003	0.0322	1.1000e-004	0.0123	8.0000e-005	0.0124	3.2800e-003	7.0000e-005	3.3500e-003	0.0000	10.0386	10.0386	2.1000e-004	0.0000	10.0439
Total	**5.4400e-003**	**0.0356**	**0.0402**	**2.0000e-004**	**0.0145**	**1.5000e-004**	**0.0146**	**3.9100e-003**	**1.3000e-004**	**4.0400e-003**	**0.0000**	**18.5130**	**18.5130**	**6.1000e-004**	**0.0000**	**18.5283**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0421	0.3846	0.4573	7.3000e-004		0.0192	0.0192		0.0179	0.0179	0.0000	61.0795	61.0795	0.0178	0.0000	61.5243
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0421**	**0.3846**	**0.4573**	**7.3000e-004**		**0.0192**	**0.0192**		**0.0179**	**0.0179**	**0.0000**	**61.0795**	**61.0795**	**0.0178**	**0.0000**	**61.5243**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3500e-003	2.2200e-003	0.0241	8.0000e-005	9.2500e-003	6.0000e-005	9.3000e-003	2.4600e-003	5.0000e-005	2.5100e-003	0.0000	7.5290	7.5290	1.6000e-004	0.0000	7.5329
Total	**3.3500e-003**	**2.2200e-003**	**0.0241**	**8.0000e-005**	**9.2500e-003**	**6.0000e-005**	**9.3000e-003**	**2.4600e-003**	**5.0000e-005**	**2.5100e-003**	**0.0000**	**7.5290**	**7.5290**	**1.6000e-004**	**0.0000**	**7.5329**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0257	0.5442	0.4487	7.3000e-004		0.0198	0.0198		0.0198	0.0198	0.0000	61.0794	61.0794	0.0178	0.0000	61.5242
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0257**	**0.5442**	**0.4487**	**7.3000e-004**		**0.0198**	**0.0198**		**0.0198**	**0.0198**	**0.0000**	**61.0794**	**61.0794**	**0.0178**	**0.0000**	**61.5242**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3500e-003	2.2200e-003	0.0241	8.0000e-005	9.2500e-003	6.0000e-005	9.3000e-003	2.4600e-003	5.0000e-005	2.5100e-003	0.0000	7.5290	7.5290	1.6000e-004	0.0000	7.5329
Total	**3.3500e-003**	**2.2200e-003**	**0.0241**	**8.0000e-005**	**9.2500e-003**	**6.0000e-005**	**9.3000e-003**	**2.4600e-003**	**5.0000e-005**	**2.5100e-003**	**0.0000**	**7.5290**	**7.5290**	**1.6000e-004**	**0.0000**	**7.5329**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.0704	0.0907	1.5000e-004		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	12.7663	12.7663	8.3000e-004	0.0000	12.7871
Total	**0.8081**	**0.0704**	**0.0907**	**1.5000e-004**		**4.0900e-003**	**4.0900e-003**		**4.0900e-003**	**4.0900e-003**	**0.0000**	**12.7663**	**12.7663**	**8.3000e-004**	**0.0000**	**12.7871**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-003	1.9900e-003	0.0216	7.0000e-005	8.3000e-003	5.0000e-005	8.3500e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	6.7568	6.7568	1.4000e-004	0.0000	6.7603
Total	**3.0000e-003**	**1.9900e-003**	**0.0216**	**7.0000e-005**	**8.3000e-003**	**5.0000e-005**	**8.3500e-003**	**2.2100e-003**	**5.0000e-005**	**2.2600e-003**	**0.0000**	**6.7568**	**6.7568**	**1.4000e-004**	**0.0000**	**6.7603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7000e-003	0.1176	0.0916	1.5000e-004		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	12.7663	12.7663	8.3000e-004	0.0000	12.7870
Total	**0.8036**	**0.1176**	**0.0916**	**1.5000e-004**		**4.7500e-003**	**4.7500e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**12.7663**	**12.7663**	**8.3000e-004**	**0.0000**	**12.7870**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-003	1.9900e-003	0.0216	7.0000e-005	8.3000e-003	5.0000e-005	8.3500e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	6.7568	6.7568	1.4000e-004	0.0000	6.7603
Total	**3.0000e-003**	**1.9900e-003**	**0.0216**	**7.0000e-005**	**8.3000e-003**	**5.0000e-005**	**8.3500e-003**	**2.2100e-003**	**5.0000e-005**	**2.2600e-003**	**0.0000**	**6.7568**	**6.7568**	**1.4000e-004**	**0.0000**	**6.7603**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8700e-003	0.0195	0.0272	4.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	3.8299	3.8299	2.3000e-004	0.0000	3.8356
Total	**0.2422**	**0.0195**	**0.0272**	**4.0000e-005**		**1.0600e-003**	**1.0600e-003**		**1.0600e-003**	**1.0600e-003**	**0.0000**	**3.8299**	**3.8299**	**2.3000e-004**	**0.0000**	**3.8356**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	5.4000e-004	5.9700e-003	2.0000e-005	2.4900e-003	2.0000e-005	2.5000e-003	6.6000e-004	1.0000e-005	6.8000e-004	0.0000	1.9494	1.9494	4.0000e-005	0.0000	1.9503
Total	**8.4000e-004**	**5.4000e-004**	**5.9700e-003**	**2.0000e-005**	**2.4900e-003**	**2.0000e-005**	**2.5000e-003**	**6.6000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**1.9494**	**1.9494**	**4.0000e-005**	**0.0000**	**1.9503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0353	0.0275	4.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	3.8299	3.8299	2.3000e-004	0.0000	3.8356
Total	**0.2411**	**0.0353**	**0.0275**	**4.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**3.8299**	**3.8299**	**2.3000e-004**	**0.0000**	**3.8356**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.4000e-004	5.4000e-004	5.9700e-003	2.0000e-005	2.4900e-003	2.0000e-005	2.5000e-003	6.6000e-004	1.0000e-005	6.8000e-004	0.0000	1.9494	1.9494	4.0000e-005	0.0000	1.9503
Total	**8.4000e-004**	**5.4000e-004**	**5.9700e-003**	**2.0000e-005**	**2.4900e-003**	**2.0000e-005**	**2.5000e-003**	**6.6000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**1.9494**	**1.9494**	**4.0000e-005**	**0.0000**	**1.9503**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

Unbundle Parking Cost

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1653	0.7179	1.7757	6.4100e-003	0.5669	5.2900e-003	0.5722	0.1521	4.9400e-003	0.1571	0.0000	589.1849	589.1849	0.0211	0.0000	589.7123
Unmitigated	0.1736	0.7688	1.9722	7.3300e-003	0.6561	6.0100e-003	0.6621	0.1761	5.6100e-003	0.1817	0.0000	673.9403	673.9403	0.0234	0.0000	674.5254

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	763.35	763.35	763.35	1,763,039	1,523,278
City Park	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	763.35	763.35	763.35	1,763,039	1,523,278

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
City Park	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Strip Mall	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Unenclosed Parking with Elevator	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	76.9207	76.9207	6.7800e-003	1.4000e-003	77.5086
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	81.5742	81.5742	7.1900e-003	1.4900e-003	82.1977
NaturalGas Mitigated	4.7200e-003	0.0403	0.0172	2.6000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	46.6841	46.6841	8.9000e-004	8.6000e-004	46.9616
NaturalGas Unmitigated	4.9600e-003	0.0424	0.0181	2.7000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	49.0931	49.0931	9.4000e-004	9.0000e-004	49.3849

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	916695	4.9400e-003	0.0422	0.0180	2.7000e-004		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	48.9183	48.9183	9.4000e-004	9.0000e-004	49.2090
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	3275.2	2.0000e-005	1.6000e-004	1.3000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1748	0.1748	0.0000	0.0000	0.1758
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.9600e-003**	**0.0424**	**0.0181**	**2.7000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**49.0931**	**49.0931**	**9.4000e-004**	**9.0000e-004**	**49.3849**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	871747	4.7000e-003	0.0402	0.0171	2.6000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	46.5197	46.5197	8.9000e-004	8.5000e-004	46.7962
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	3080.82	2.0000e-005	1.5000e-004	1.3000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1644	0.1644	0.0000	0.0000	0.1654
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.7200e-003**	**0.0403**	**0.0172**	**2.6000e-004**		**3.2600e-003**	**3.2600e-003**		**3.2600e-003**	**3.2600e-003**	**0.0000**	**46.6841**	**46.6841**	**8.9000e-004**	**8.5000e-004**	**46.9616**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	443309	66.1156	5.8300e-003	1.2100e-003	66.6209
City Park	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	7461.76	1.1129	1.0000e-004	2.0000e-005	1.1214
Unenclosed Parking with Elevator	96189.1	14.3458	1.2700e-003	2.6000e-004	14.4554
Total		**81.5742**	**7.2000e-003**	**1.4900e-003**	**82.1977**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	421243	62.8247	5.5400e-003	1.1500e-003	63.3048
City Park	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	7002.66	1.0444	9.0000e-005	2.0000e-005	1.0524
Unenclosed Parking with Elevator	87512.2	13.0517	1.1500e-003	2.4000e-004	13.1514
Total		**76.9207**	**6.7800e-003**	**1.4100e-003**	**77.5086**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7094	0.0102	0.8559	2.9000e-004		0.0166	0.0166		0.0166	0.0166	1.6377	1.2756	2.9133	8.8900e-003	0.0000	3.1354
Unmitigated	0.7094	0.0102	0.8559	2.9000e-004		0.0166	0.0166		0.0166	0.0166	1.6377	1.2756	2.9133	8.8900e-003	0.0000	3.1354

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1037					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5738					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.2600e-003	1.2200e-003	0.0750	2.4000e-004		0.0122	0.0122		0.0122	0.0122	1.6377	0.0000	1.6377	7.6600e-003	0.0000	1.8291
Landscaping	0.0236	9.0000e-003	0.7809	4.0000e-005		4.3200e-003	4.3200e-003		4.3200e-003	4.3200e-003	0.0000	1.2756	1.2756	1.2300e-003	0.0000	1.3064
Total	**0.7094**	**0.0102**	**0.8559**	**2.8000e-004**		**0.0166**	**0.0166**		**0.0166**	**0.0166**	**1.6377**	**1.2756**	**2.9133**	**8.8900e-003**	**0.0000**	**3.1354**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1037					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5738					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.2600e-003	1.2200e-003	0.0750	2.4000e-004		0.0122	0.0122		0.0122	0.0122	1.6377	0.0000	1.6377	7.6600e-003	0.0000	1.8291
Landscaping	0.0236	9.0000e-003	0.7809	4.0000e-005		4.3200e-003	4.3200e-003		4.3200e-003	4.3200e-003	0.0000	1.2756	1.2756	1.2300e-003	0.0000	1.3064
Total	**0.7094**	**0.0102**	**0.8559**	**2.8000e-004**		**0.0166**	**0.0166**		**0.0166**	**0.0166**	**1.6377**	**1.2756**	**2.9133**	**8.8900e-003**	**0.0000**	**3.1354**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.7048	0.1803	4.3700e-003	14.5151
Unmitigated	10.2548	0.2253	5.4500e-003	17.5130

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	6.84117 / 4.31291	9.9426	0.2236	5.4100e-003	17.1435
City Park	0 / 0.452763	0.2363	2.0000e-005	0.0000	0.2382
Strip Mall	0.0525915 / 0.0322335	0.0760	1.7200e-003	4.0000e-005	0.1313
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**10.2548**	**0.2254**	**5.4500e-003**	**17.5130**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.47294 / 4.31291	8.4043	0.1789	4.3300e-003	14.1685
City Park	0 / 0.452763	0.2363	2.0000e-005	0.0000	0.2382
Strip Mall	0.0420732 / 0.0322335	0.0641	1.3800e-003	3.0000e-005	0.1084
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.7048**	**0.1803**	**4.3600e-003**	**14.5151**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.4907	0.1472	0.0000	6.1706
Unmitigated	9.9628	0.5888	0.0000	24.6824

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	48.3	9.8045	0.5794	0.0000	24.2901
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Strip Mall	0.75	0.1522	9.0000e-003	0.0000	0.3772
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**9.9628**	**0.5888**	**0.0000**	**24.6824**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	12.075	2.4511	0.1449	0.0000	6.0725
City Park	0.0075	1.5200e-003	9.0000e-005	0.0000	3.7700e-003
Strip Mall	0.1875	0.0381	2.2500e-003	0.0000	0.0943
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.4907**	**0.1472**	**0.0000**	**6.1706**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

111 Independence Drive Project

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	115.00	Space	0.02	49,582.00	0
City Park	0.38	Acre	0.38	16,476.00	0
Apartments Mid Rise	105.00	Dwelling Unit	0.50	145,350.00	300
Strip Mall	0.71	1000sqft	0.02	712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E, 2015)

Land Use - The proposed project would include an 144,599-gross-square-foot (gsf), eight-story multi-family apartment building with 106 dwelling units and a 500 -square-foot commercial space, as well as associated open space and parking.

Construction Phase - 21-month construction period

Demolition - The project would include the demolition of the 15,000-square-foot existing building.

Grading - 1,575 cubic yards of soil would be off-hauled and 400 cubic yards of soil would be imported

Vehicle Trips - Based on trip generation prepared for the project.

Energy Use -

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and tier 2 construction equipment

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Assuming compliance with 2019 Title 24 standards, installation of high efficiency lighting, and energy-efficient appliances

Water Mitigation - Assuming low-flow appliances

Waste Mitigation - Consistent with the CalRecycle Waste Diversion and Recycling Mandate which will reduce solid waste production by 75 percent.

Woodstoves - Assuming no hearth as the proposed project would not increase the demand for natural gas as the City's REACH codes would require the buildings to be all electric.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	1.00	30.00
tblFireplaces	NumberGas	15.75	0.00
tblFireplaces	NumberWood	17.85	0.00
tblGrading	MaterialExported	0.00	1,575.00
tblGrading	MaterialImported	0.00	400.00
tblLandUse	LandUseSquareFeet	46,000.00	49,582.00
tblLandUse	LandUseSquareFeet	16,552.80	16,476.00
tblLandUse	LandUseSquareFeet	105,000.00	145,350.00
tblLandUse	LandUseSquareFeet	710.00	712.00
tblLandUse	LotAcreage	1.03	0.02
tblLandUse	LotAcreage	2.76	0.50

tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	6.39	7.27
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	5.86	7.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	6.65	7.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.1776	10.4539	10.3544	0.0257	1.1457	0.4578	1.5573	0.4679	0.4214	0.8622	0.0000	2,562.5625	2,562.5625	0.4051	0.0000	2,572.6887
2022	16.2248	9.3557	10.0108	0.0253	1.0033	0.3814	1.3847	0.2695	0.3511	0.6206	0.0000	2,526.8684	2,526.8684	0.4021	0.0000	2,536.9208
2023	16.2077	1.3348	2.2495	4.5100e-003	0.1725	0.0719	0.2444	0.0458	0.0718	0.1175	0.0000	435.5143	435.5143	0.0198	0.0000	436.0102
Maximum	**16.2248**	**10.4539**	**10.3544**	**0.0257**	**1.1457**	**0.4578**	**1.5573**	**0.4679**	**0.4214**	**0.8622**	**0.0000**	**2,562.5625**	**2,562.5625**	**0.4051**	**0.0000**	**2,572.6887**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.8730	13.1708	11.0531	0.0257	1.0033	0.4077	1.3990	0.2695	0.4074	0.6646	0.0000	2,562.5625	2,562.5625	0.4051	0.0000	2,572.6887
2022	16.1342	13.0318	10.8205	0.0253	1.0033	0.3950	1.3983	0.2695	0.3944	0.6639	0.0000	2,526.8684	2,526.8684	0.4021	0.0000	2,536.9208
2023	16.1300	2.3843	2.2708	4.5100e-003	0.1725	0.0961	0.2686	0.0458	0.0960	0.1418	0.0000	435.5143	435.5143	0.0198	0.0000	436.0102
Maximum	**16.1342**	**13.1708**	**11.0531**	**0.0257**	**1.0033**	**0.4077**	**1.3990**	**0.2695**	**0.4074**	**0.6646**	**0.0000**	**2,562.5625**	**2,562.5625**	**0.4051**	**0.0000**	**2,572.6887**

111 Independence Drive Project - Bay Area AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.41**	**-35.20**	**-6.76**	**0.00**	**6.14**	**1.36**	**3.78**	**25.34**	**-6.34**	**8.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782
Energy	0.0272	0.2323	0.0992	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.5255	296.5255	5.6800e-003	5.4400e-003	298.2876
Mobile	1.0976	4.0957	11.2846	0.0427	3.7453	0.0330	3.7783	1.0020	0.0308	1.0328		4,317.3050	4,317.3050	0.1426		4,320.8707
Total	**6.2687**	**4.6012**	**30.6796**	**0.0792**	**3.7453**	**1.8321**	**5.5775**	**1.0020**	**1.8299**	**2.8319**	**255.6951**	**4,629.4539**	**4,885.1489**	**1.3587**	**5.4400e-003**	**4,920.7364**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782
Energy	0.0259	0.2209	0.0944	1.4100e-003		0.0179	0.0179		0.0179	0.0179		281.9750	281.9750	5.4000e-003	5.1700e-003	283.6507
Mobile	1.0506	3.8335	10.0665	0.0373	3.2360	0.0291	3.2651	0.8657	0.0271	0.8928		3,773.6129	3,773.6129	0.1280		3,776.8138
Total	**6.2204**	**4.3276**	**29.4566**	**0.0738**	**3.2360**	**1.8273**	**5.0633**	**0.8657**	**1.8253**	**2.6910**	**255.6951**	**4,071.2113**	**4,326.9064**	**1.3438**	**5.1700e-003**	**4,362.0426**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.77**	**5.95**	**3.99**	**6.88**	**13.60**	**0.26**	**9.22**	**13.60**	**0.25**	**4.97**	**0.00**	**12.06**	**11.43**	**1.09**	**4.96**	**11.35**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	5/21/2021	5	15	
2	Site Preparation	Site Preparation	5/24/2021	7/2/2021	5	30	
3	Grading	Grading	7/5/2021	8/13/2021	5	30	
4	Building Construction	Building Construction	8/16/2021	2/11/2022	5	130	
5	Paving	Paving	2/14/2022	8/12/2022	5	130	
6	Architectural Coating	Architectural Coating	8/15/2022	2/10/2023	5	130	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.02

Residential Indoor: 294,334; Residential Outdoor: 98,111; Non-Residential Indoor: 1,068; Non-Residential Outdoor: 356; Striped Parking Area: 2,975 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	68.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	197.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	104.00	22.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9844	0.0000	0.9844	0.1490	0.0000	0.1490			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.9844**	**0.4073**	**1.3917**	**0.1490**	**0.3886**	**0.5376**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0353	1.1995	0.2529	3.5600e-003	0.0792	3.7600e-003	0.0830	0.0217	3.6000e-003	0.0253		380.7591	380.7591	0.0189		381.2314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0188	0.2456	7.9000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		79.1960	79.1960	1.7700e-003		79.2402
Total	**0.0675**	**1.2183**	**0.4985**	**4.3500e-003**	**0.1614**	**4.2800e-003**	**0.1656**	**0.0435**	**4.0800e-003**	**0.0476**		**459.9550**	**459.9550**	**0.0207**		**460.4716**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4430	0.0000	0.4430	0.0671	0.0000	0.0671			0.0000			0.0000
Off-Road	0.4844	10.3677	7.9381	0.0120		0.4017	0.4017		0.4017	0.4017	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.4844**	**10.3677**	**7.9381**	**0.0120**	**0.4430**	**0.4017**	**0.8447**	**0.0671**	**0.4017**	**0.4688**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0353	1.1995	0.2529	3.5600e-003	0.0792	3.7600e-003	0.0830	0.0217	3.6000e-003	0.0253		380.7591	380.7591	0.0189		381.2314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0188	0.2456	7.9000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		79.1960	79.1960	1.7700e-003		79.2402
Total	**0.0675**	**1.2183**	**0.4985**	**4.3500e-003**	**0.1614**	**4.2800e-003**	**0.1656**	**0.0435**	**4.0800e-003**	**0.0476**		**459.9550**	**459.9550**	**0.0207**		**460.4716**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5318	0.0000	0.5318	0.0575	0.0000	0.0575			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.5318**	**0.2995**	**0.8312**	**0.0575**	**0.2755**	**0.3330**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0130	0.4410	0.0930	1.3100e-003	0.0291	1.3800e-003	0.0305	7.9800e-003	1.3200e-003	9.3000e-003		139.9850	139.9850	6.9500e-003		140.1586
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0161	9.4000e-003	0.1228	4.0000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		39.5980	39.5980	8.9000e-004		39.6201
Total	**0.0291**	**0.4504**	**0.2158**	**1.7100e-003**	**0.0702**	**1.6400e-003**	**0.0718**	**0.0189**	**1.5600e-003**	**0.0204**		**179.5829**	**179.5829**	**7.8400e-003**		**179.7787**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2393	0.0000	0.2393	0.0259	0.0000	0.0259			0.0000			0.0000
Off-Road	0.3079	8.6185	5.8579	9.7300e-003		0.2405	0.2405		0.2405	0.2405	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.3079**	**8.6185**	**5.8579**	**9.7300e-003**	**0.2393**	**0.2405**	**0.4798**	**0.0259**	**0.2405**	**0.2664**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0130	0.4410	0.0930	1.3100e-003	0.0291	1.3800e-003	0.0305	7.9800e-003	1.3200e-003	9.3000e-003		139.9850	139.9850	6.9500e-003		140.1586
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0161	9.4000e-003	0.1228	4.0000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		39.5980	39.5980	8.9000e-004		39.6201
Total	**0.0291**	**0.4504**	**0.2158**	**1.7100e-003**	**0.0702**	**1.6400e-003**	**0.0718**	**0.0189**	**1.5600e-003**	**0.0204**		**179.5829**	**179.5829**	**7.8400e-003**		**179.7787**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7587	0.0000	0.7587	0.4147	0.0000	0.4147			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7587**	**0.4073**	**1.1660**	**0.4147**	**0.3886**	**0.8033**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0512	1.7375	0.3663	5.1500e-003	0.1147	5.4500e-003	0.1202	0.0314	5.2100e-003	0.0367		551.5407	551.5407	0.0274		552.2249
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0188	0.2456	7.9000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		79.1960	79.1960	1.7700e-003		79.2402
Total	**0.0833**	**1.7563**	**0.6119**	**5.9400e-003**	**0.1969**	**5.9700e-003**	**0.2028**	**0.0532**	**5.6900e-003**	**0.0589**		**630.7367**	**630.7367**	**0.0291**		**631.4651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3414	0.0000	0.3414	0.1866	0.0000	0.1866			0.0000			0.0000
Off-Road	0.4844	10.3677	7.9381	0.0120		0.4017	0.4017		0.4017	0.4017	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.4844**	**10.3677**	**7.9381**	**0.0120**	**0.3414**	**0.4017**	**0.7431**	**0.1866**	**0.4017**	**0.5883**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0512	1.7375	0.3663	5.1500e-003	0.1147	5.4500e-003	0.1202	0.0314	5.2100e-003	0.0367		551.5407	551.5407	0.0274		552.2249
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0188	0.2456	7.9000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		79.1960	79.1960	1.7700e-003		79.2402
Total	**0.0833**	**1.7563**	**0.6119**	**5.9400e-003**	**0.1969**	**5.9700e-003**	**0.2028**	**0.0532**	**5.6900e-003**	**0.0589**		**630.7367**	**630.7367**	**0.0291**		**631.4651**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0682	2.2735	0.5361	6.0000e-003	0.1489	4.9300e-003	0.1539	0.0429	4.7100e-003	0.0476		635.7088	635.7088	0.0298		636.4547
Worker	0.3344	0.1954	2.5546	8.2600e-003	0.8543	5.3800e-003	0.8597	0.2266	4.9500e-003	0.2316		823.6379	823.6379	0.0184		824.0982
Total	**0.4026**	**2.4689**	**3.0907**	**0.0143**	**1.0033**	**0.0103**	**1.0136**	**0.2695**	**9.6600e-003**	**0.2791**		**1,459.3467**	**1,459.3467**	**0.0483**		**1,460.5529**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4704	10.7018	7.9624	0.0114		0.3855	0.3855		0.3855	0.3855	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.4704**	**10.7018**	**7.9624**	**0.0114**		**0.3855**	**0.3855**		**0.3855**	**0.3855**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0682	2.2735	0.5361	6.0000e-003	0.1489	4.9300e-003	0.1539	0.0429	4.7100e-003	0.0476		635.7088	635.7088	0.0298		636.4547
Worker	0.3344	0.1954	2.5546	8.2600e-003	0.8543	5.3800e-003	0.8597	0.2266	4.9500e-003	0.2316		823.6379	823.6379	0.0184		824.0982
Total	**0.4026**	**2.4689**	**3.0907**	**0.0143**	**1.0033**	**0.0103**	**1.0136**	**0.2695**	**9.6600e-003**	**0.2791**		**1,459.3467**	**1,459.3467**	**0.0483**		**1,460.5529**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0636	2.1547	0.5042	5.9400e-003	0.1489	4.2700e-003	0.1532	0.0429	4.0800e-003	0.0470		629.5179	629.5179	0.0285		630.2311
Worker	0.3113	0.1753	2.3539	7.9600e-003	0.8543	5.2500e-003	0.8596	0.2266	4.8400e-003	0.2314		793.4112	793.4112	0.0165		793.8245
Total	**0.3749**	**2.3300**	**2.8581**	**0.0139**	**1.0033**	**9.5200e-003**	**1.0128**	**0.2695**	**8.9200e-003**	**0.2784**		**1,422.9291**	**1,422.9291**	**0.0451**		**1,424.0556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4704	10.7018	7.9624	0.0114		0.3855	0.3855		0.3855	0.3855	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.4704**	**10.7018**	**7.9624**	**0.0114**		**0.3855**	**0.3855**		**0.3855**	**0.3855**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0636	2.1547	0.5042	5.9400e-003	0.1489	4.2700e-003	0.1532	0.0429	4.0800e-003	0.0470		629.5179	629.5179	0.0285		630.2311
Worker	0.3113	0.1753	2.3539	7.9600e-003	0.8543	5.2500e-003	0.8596	0.2266	4.8400e-003	0.2314		793.4112	793.4112	0.0165		793.8245
Total	**0.3749**	**2.3300**	**2.8581**	**0.0139**	**1.0033**	**9.5200e-003**	**1.0128**	**0.2695**	**8.9200e-003**	**0.2784**		**1,422.9291**	**1,422.9291**	**0.0451**		**1,424.0556**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**		**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3954	8.3730	6.9028	0.0113		0.3043	0.3043		0.3043	0.3043	0.0000	1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3954**	**8.3730**	**6.9028**	**0.0113**		**0.3043**	**0.3043**		**0.3043**	**0.3043**	**0.0000**	**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**16.1620**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0354	0.4753	1.6100e-003	0.1725	1.0600e-003	0.1736	0.0458	9.8000e-004	0.0467		160.2080	160.2080	3.3400e-003		160.2915
Total	**0.0629**	**0.0354**	**0.4753**	**1.6100e-003**	**0.1725**	**1.0600e-003**	**0.1736**	**0.0458**	**9.8000e-004**	**0.0467**		**160.2080**	**160.2080**	**3.3400e-003**		**160.2915**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**16.0713**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0354	0.4753	1.6100e-003	0.1725	1.0600e-003	0.1736	0.0458	9.8000e-004	0.0467		160.2080	160.2080	3.3400e-003		160.2915
Total	**0.0629**	**0.0354**	**0.4753**	**1.6100e-003**	**0.1725**	**1.0600e-003**	**0.1736**	**0.0458**	**9.8000e-004**	**0.0467**		**160.2080**	**160.2080**	**3.3400e-003**		**160.2915**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**16.1491**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0318	0.4384	1.5400e-003	0.1725	1.0400e-003	0.1736	0.0458	9.6000e-004	0.0467		154.0662	154.0662	3.0000e-003		154.1412
Total	**0.0587**	**0.0318**	**0.4384**	**1.5400e-003**	**0.1725**	**1.0400e-003**	**0.1736**	**0.0458**	**9.6000e-004**	**0.0467**		**154.0662**	**154.0662**	**3.0000e-003**		**154.1412**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**16.0713**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0587	0.0318	0.4384	1.5400e-003	0.1725	1.0400e-003	0.1736	0.0458	9.6000e-004	0.0467		154.0662	154.0662	3.0000e-003		154.1412
Total	**0.0587**	**0.0318**	**0.4384**	**1.5400e-003**	**0.1725**	**1.0400e-003**	**0.1736**	**0.0458**	**9.6000e-004**	**0.0467**		**154.0662**	**154.0662**	**3.0000e-003**		**154.1412**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

Unbundle Parking Cost

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0506	3.8335	10.0665	0.0373	3.2360	0.0291	3.2651	0.8657	0.0271	0.8928		3,773.6129	3,773.6129	0.1280		3,776.8138
Unmitigated	1.0976	4.0957	11.2846	0.0427	3.7453	0.0330	3.7783	1.0020	0.0308	1.0328		4,317.3050	4,317.3050	0.1426		4,320.8707

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	763.35	763.35	763.35	1,763,039	1,523,278
City Park	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	763.35	763.35	763.35	1,763,039	1,523,278

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
City Park	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Strip Mall	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Unenclosed Parking with Elevator	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0259	0.2209	0.0944	1.4100e-003		0.0179	0.0179		0.0179	0.0179		281.9750	281.9750	5.4000e-003	5.1700e-003	283.6507
NaturalGas Unmitigated	0.0272	0.2323	0.0992	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.5255	296.5255	5.6800e-003	5.4400e-003	298.2876

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2511.49	0.0271	0.2315	0.0985	1.4800e-003		0.0187	0.0187		0.0187	0.0187		295.4698	295.4698	5.6600e-003	5.4200e-003	297.2257
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.97315	1.0000e-004	8.8000e-004	7.4000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.0557	1.0557	2.0000e-005	2.0000e-005	1.0619
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0272**	**0.2323**	**0.0992**	**1.4900e-003**		**0.0188**	**0.0188**		**0.0188**	**0.0188**		**296.5255**	**296.5255**	**5.6800e-003**	**5.4400e-003**	**298.2876**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.38835	0.0258	0.2201	0.0937	1.4000e-003		0.0178	0.0178		0.0178	0.0178		280.9820	280.9820	5.3900e-003	5.1500e-003	282.6518
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.00844061	9.0000e-005	8.3000e-004	7.0000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9930	0.9930	2.0000e-005	2.0000e-005	0.9989
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0259**	**0.2209**	**0.0944**	**1.4000e-003**		**0.0179**	**0.0179**		**0.0179**	**0.0179**		**281.9750**	**281.9750**	**5.4100e-003**	**5.1700e-003**	**283.6507**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782
Unmitigated	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1441					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.1693	0.1732	10.6193	0.0347		1.7324	1.7324		1.7324	1.7324	255.6951	0.0000	255.6951	1.1953	0.0000	285.5781
Landscaping	0.2621	0.1000	8.6764	4.6000e-004		0.0480	0.0480		0.0480	0.0480		15.6234	15.6234	0.0151		16.0001
Total	**5.1440**	**0.2732**	**19.2957**	**0.0351**		**1.7804**	**1.7804**		**1.7804**	**1.7804**	**255.6951**	**15.6234**	**271.3185**	**1.2104**	**0.0000**	**301.5782**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1441					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.1693	0.1732	10.6193	0.0347		1.7324	1.7324		1.7324	1.7324	255.6951	0.0000	255.6951	1.1953	0.0000	285.5781
Landscaping	0.2621	0.1000	8.6764	4.6000e-004		0.0480	0.0480		0.0480	0.0480		15.6234	15.6234	0.0151		16.0001
Total	**5.1440**	**0.2732**	**19.2957**	**0.0351**		**1.7804**	**1.7804**		**1.7804**	**1.7804**	**255.6951**	**15.6234**	**271.3185**	**1.2104**	**0.0000**	**301.5782**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

111 Independence Drive Project

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	115.00	Space	0.02	49,582.00	0
City Park	0.38	Acre	0.38	16,476.00	0
Apartments Mid Rise	105.00	Dwelling Unit	0.50	145,350.00	300
Strip Mall	0.71	1000sqft	0.02	712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E, 2015)

Land Use - The proposed project would include an 144,599-gross-square-foot (gsf), eight-story multi-family apartment building with 106 dwelling units and a 500 -square-foot commercial space, as well as associated open space and parking.

Construction Phase - 21-month construction period

Demolition - The project would include the demolition of the 15,000-square-foot existing building.

Grading - 1,575 cubic yards of soil would be off-hauled and 400 cubic yards of soil would be imported

Vehicle Trips - Based on trip generation prepared for the project.

Energy Use -

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and tier 2 construction equipment

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Assuming compliance with 2019 Title 24 standards, installation of high efficiency lighting, and energy-efficient appliances

Water Mitigation - Assuming low-flow appliances

Waste Mitigation - Consistent with the CalRecycle Waste Diversion and Recycling Mandate which will reduce solid waste production by 75 percent.

Woodstoves - Assuming no hearth as the proposed project would not increase the demand for natural gas as the City's REACH codes would require the buildings to be all electric.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	1.00	30.00
tblFireplaces	NumberGas	15.75	0.00
tblFireplaces	NumberWood	17.85	0.00
tblGrading	MaterialExported	0.00	1,575.00
tblGrading	MaterialImported	0.00	400.00
tblLandUse	LandUseSquareFeet	46,000.00	49,582.00
tblLandUse	LandUseSquareFeet	16,552.80	16,476.00
tblLandUse	LandUseSquareFeet	105,000.00	145,350.00
tblLandUse	LandUseSquareFeet	710.00	712.00
tblLandUse	LotAcreage	1.03	0.02
tblLandUse	LotAcreage	2.76	0.50

tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	6.39	7.27
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	5.86	7.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	6.65	7.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.2015	10.5194	10.2699	0.0249	1.1457	0.4580	1.5574	0.4679	0.4216	0.8623	0.0000	2,481.5136	2,481.5136	0.4063	0.0000	2,491.6698
2022	16.2287	9.4131	9.9252	0.0245	1.0033	0.3816	1.3849	0.2695	0.3512	0.6207	0.0000	2,448.2886	2,448.2886	0.4032	0.0000	2,458.3697
2023	16.2116	1.3423	2.2179	4.3900e-003	0.1725	0.0719	0.2444	0.0458	0.0718	0.1175	0.0000	423.3825	423.3825	0.0196	0.0000	423.8729
Maximum	**16.2287**	**10.5194**	**10.2699**	**0.0249**	**1.1457**	**0.4580**	**1.5574**	**0.4679**	**0.4216**	**0.8623**	**0.0000**	**2,481.5136**	**2,481.5136**	**0.4063**	**0.0000**	**2,491.6698**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.8969	13.2363	10.9687	0.0249	1.0033	0.4078	1.3992	0.2695	0.4075	0.6648	0.0000	2,481.5136	2,481.5136	0.4063	0.0000	2,491.6698
2022	16.1381	13.0892	10.7349	0.0245	1.0033	0.3951	1.3984	0.2695	0.3945	0.6640	0.0000	2,448.2886	2,448.2886	0.4032	0.0000	2,458.3697
2023	16.1339	2.3917	2.2392	4.3900e-003	0.1725	0.0961	0.2686	0.0458	0.0960	0.1418	0.0000	423.3825	423.3825	0.0196	0.0000	423.8729
Maximum	**16.1381**	**13.2363**	**10.9687**	**0.0249**	**1.0033**	**0.4078**	**1.3992**	**0.2695**	**0.4075**	**0.6648**	**0.0000**	**2,481.5136**	**2,481.5136**	**0.4063**	**0.0000**	**2,491.6698**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.41**	**-34.98**	**-6.83**	**0.00**	**6.14**	**1.36**	**3.78**	**25.34**	**-6.33**	**8.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782
Energy	0.0272	0.2323	0.0992	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.5255	296.5255	5.6800e-003	5.4400e-003	298.2876
Mobile	0.9445	4.3058	11.3371	0.0399	3.7453	0.0331	3.7785	1.0020	0.0310	1.0329		4,043.3541	4,043.3541	0.1453		4,046.9854
Total	**6.1156**	**4.8113**	**30.7321**	**0.0765**	**3.7453**	**1.8323**	**5.5776**	**1.0020**	**1.8301**	**2.8321**	**255.6951**	**4,355.5030**	**4,611.1981**	**1.3613**	**5.4400e-003**	**4,646.8511**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782
Energy	0.0259	0.2209	0.0944	1.4100e-003		0.0179	0.0179		0.0179	0.0179		281.9750	281.9750	5.4000e-003	5.1700e-003	283.6507
Mobile	0.8982	4.0137	10.2533	0.0349	3.2360	0.0292	3.2652	0.8657	0.0273	0.8930		3,533.0701	3,533.0701	0.1313		3,536.3522
Total	**6.0680**	**4.5079**	**29.6434**	**0.0714**	**3.2360**	**1.8274**	**5.0634**	**0.8657**	**1.8255**	**2.6912**	**255.6951**	**3,830.6685**	**4,086.3636**	**1.3471**	**5.1700e-003**	**4,121.5811**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.78**	**6.31**	**3.54**	**6.68**	**13.60**	**0.26**	**9.22**	**13.60**	**0.25**	**4.97**	**0.00**	**12.05**	**11.38**	**1.05**	**4.96**	**11.30**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	5/21/2021	5	15	
2	Site Preparation	Site Preparation	5/24/2021	7/2/2021	5	30	
3	Grading	Grading	7/5/2021	8/13/2021	5	30	
4	Building Construction	Building Construction	8/16/2021	2/11/2022	5	130	
5	Paving	Paving	2/14/2022	8/12/2022	5	130	
6	Architectural Coating	Architectural Coating	8/15/2022	2/10/2023	5	130	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.02

Residential Indoor: 294,334; Residential Outdoor: 98,111; Non-Residential Indoor: 1,068; Non-Residential Outdoor: 356; Striped Parking Area: 2,975 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	68.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	197.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	104.00	22.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9844	0.0000	0.9844	0.1490	0.0000	0.1490			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.9844**	**0.4073**	**1.3917**	**0.1490**	**0.3886**	**0.5376**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0363	1.2276	0.2715	3.5000e-003	0.0792	3.8300e-003	0.0830	0.0217	3.6600e-003	0.0254		374.3221	374.3221	0.0198		374.8174
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0341	0.0232	0.2298	7.3000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		72.9537	72.9537	1.6500e-003		72.9949
Total	**0.0703**	**1.2508**	**0.5013**	**4.2300e-003**	**0.1614**	**4.3500e-003**	**0.1657**	**0.0435**	**4.1400e-003**	**0.0476**		**447.2758**	**447.2758**	**0.0215**		**447.8124**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4430	0.0000	0.4430	0.0671	0.0000	0.0671			0.0000			0.0000
Off-Road	0.4844	10.3677	7.9381	0.0120		0.4017	0.4017		0.4017	0.4017	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.4844**	**10.3677**	**7.9381**	**0.0120**	**0.4430**	**0.4017**	**0.8447**	**0.0671**	**0.4017**	**0.4688**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0363	1.2276	0.2715	3.5000e-003	0.0792	3.8300e-003	0.0830	0.0217	3.6600e-003	0.0254		374.3221	374.3221	0.0198		374.8174
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0341	0.0232	0.2298	7.3000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		72.9537	72.9537	1.6500e-003		72.9949
Total	**0.0703**	**1.2508**	**0.5013**	**4.2300e-003**	**0.1614**	**4.3500e-003**	**0.1657**	**0.0435**	**4.1400e-003**	**0.0476**		**447.2758**	**447.2758**	**0.0215**		**447.8124**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5318	0.0000	0.5318	0.0575	0.0000	0.0575			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.5318**	**0.2995**	**0.8312**	**0.0575**	**0.2755**	**0.3330**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0133	0.4513	0.0998	1.2900e-003	0.0291	1.4100e-003	0.0305	7.9800e-003	1.3500e-003	9.3300e-003		137.6184	137.6184	7.2800e-003		137.8005
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0170	0.0116	0.1149	3.7000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		36.4768	36.4768	8.3000e-004		36.4975
Total	**0.0304**	**0.4629**	**0.2147**	**1.6600e-003**	**0.0702**	**1.6700e-003**	**0.0719**	**0.0189**	**1.5900e-003**	**0.0205**		**174.0953**	**174.0953**	**8.1100e-003**		**174.2980**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2393	0.0000	0.2393	0.0259	0.0000	0.0259			0.0000			0.0000
Off-Road	0.3079	8.6185	5.8579	9.7300e-003		0.2405	0.2405		0.2405	0.2405	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.3079**	**8.6185**	**5.8579**	**9.7300e-003**	**0.2393**	**0.2405**	**0.4798**	**0.0259**	**0.2405**	**0.2664**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0133	0.4513	0.0998	1.2900e-003	0.0291	1.4100e-003	0.0305	7.9800e-003	1.3500e-003	9.3300e-003		137.6184	137.6184	7.2800e-003		137.8005
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0170	0.0116	0.1149	3.7000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		36.4768	36.4768	8.3000e-004		36.4975
Total	**0.0304**	**0.4629**	**0.2147**	**1.6600e-003**	**0.0702**	**1.6700e-003**	**0.0719**	**0.0189**	**1.5900e-003**	**0.0205**		**174.0953**	**174.0953**	**8.1100e-003**		**174.2980**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7587	0.0000	0.7587	0.4147	0.0000	0.4147			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7587**	**0.4073**	**1.1660**	**0.4147**	**0.3886**	**0.8033**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0525	1.7782	0.3932	5.0700e-003	0.1147	5.5400e-003	0.1203	0.0314	5.3000e-003	0.0367		542.2166	542.2166	0.0287		542.9341
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0341	0.0232	0.2298	7.3000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		72.9537	72.9537	1.6500e-003		72.9949
Total	**0.0866**	**1.8014**	**0.6230**	**5.8000e-003**	**0.1969**	**6.0600e-003**	**0.2029**	**0.0532**	**5.7800e-003**	**0.0590**		**615.1703**	**615.1703**	**0.0304**		**615.9290**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3414	0.0000	0.3414	0.1866	0.0000	0.1866			0.0000			0.0000
Off-Road	0.4844	10.3677	7.9381	0.0120		0.4017	0.4017		0.4017	0.4017	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.4844**	**10.3677**	**7.9381**	**0.0120**	**0.3414**	**0.4017**	**0.7431**	**0.1866**	**0.4017**	**0.5883**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0525	1.7782	0.3932	5.0700e-003	0.1147	5.5400e-003	0.1203	0.0314	5.3000e-003	0.0367		542.2166	542.2166	0.0287		542.9341
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0341	0.0232	0.2298	7.3000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		72.9537	72.9537	1.6500e-003		72.9949
Total	**0.0866**	**1.8014**	**0.6230**	**5.8000e-003**	**0.1969**	**6.0600e-003**	**0.2029**	**0.0532**	**5.7800e-003**	**0.0590**		**615.1703**	**615.1703**	**0.0304**		**615.9290**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0723	2.2931	0.6162	5.8500e-003	0.1489	5.1000e-003	0.1540	0.0429	4.8700e-003	0.0477		619.5797	619.5797	0.0323		620.3867
Worker	0.3543	0.2414	2.3900	7.6100e-003	0.8543	5.3800e-003	0.8597	0.2266	4.9500e-003	0.2316		758.7181	758.7181	0.0172		759.1473
Total	**0.4265**	**2.5345**	**3.0063**	**0.0135**	**1.0033**	**0.0105**	**1.0137**	**0.2695**	**9.8200e-003**	**0.2793**		**1,378.2978**	**1,378.2978**	**0.0495**		**1,379.5340**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4704	10.7018	7.9624	0.0114		0.3855	0.3855		0.3855	0.3855	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.4704**	**10.7018**	**7.9624**	**0.0114**		**0.3855**	**0.3855**		**0.3855**	**0.3855**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0723	2.2931	0.6162	5.8500e-003	0.1489	5.1000e-003	0.1540	0.0429	4.8700e-003	0.0477		619.5797	619.5797	0.0323		620.3867
Worker	0.3543	0.2414	2.3900	7.6100e-003	0.8543	5.3800e-003	0.8597	0.2266	4.9500e-003	0.2316		758.7181	758.7181	0.0172		759.1473
Total	**0.4265**	**2.5345**	**3.0063**	**0.0135**	**1.0033**	**0.0105**	**1.0137**	**0.2695**	**9.8200e-003**	**0.2793**		**1,378.2978**	**1,378.2978**	**0.0495**		**1,379.5340**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0674	2.1709	0.5793	5.7900e-003	0.1489	4.4300e-003	0.1534	0.0429	4.2300e-003	0.0471		613.4456	613.4456	0.0308		614.2165
Worker	0.3306	0.2164	2.1932	7.3300e-003	0.8543	5.2500e-003	0.8596	0.2266	4.8400e-003	0.2314		730.9037	730.9037	0.0154		731.2880
Total	**0.3980**	**2.3874**	**2.7725**	**0.0131**	**1.0033**	**9.6800e-003**	**1.0129**	**0.2695**	**9.0700e-003**	**0.2785**		**1,344.3493**	**1,344.3493**	**0.0462**		**1,345.5044**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4704	10.7018	7.9624	0.0114		0.3855	0.3855		0.3855	0.3855	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.4704**	**10.7018**	**7.9624**	**0.0114**		**0.3855**	**0.3855**		**0.3855**	**0.3855**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0674	2.1709	0.5793	5.7900e-003	0.1489	4.4300e-003	0.1534	0.0429	4.2300e-003	0.0471		613.4456	613.4456	0.0308		614.2165
Worker	0.3306	0.2164	2.1932	7.3300e-003	0.8543	5.2500e-003	0.8596	0.2266	4.8400e-003	0.2314		730.9037	730.9037	0.0154		731.2880
Total	**0.3980**	**2.3874**	**2.7725**	**0.0131**	**1.0033**	**9.6800e-003**	**1.0129**	**0.2695**	**9.0700e-003**	**0.2785**		**1,344.3493**	**1,344.3493**	**0.0462**		**1,345.5044**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**		**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3954	8.3730	6.9028	0.0113		0.3043	0.3043		0.3043	0.3043	0.0000	1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3954**	**8.3730**	**6.9028**	**0.0113**		**0.3043**	**0.3043**		**0.3043**	**0.3043**	**0.0000**	**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**16.1620**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0437	0.4429	1.4800e-003	0.1725	1.0600e-003	0.1736	0.0458	9.8000e-004	0.0467		147.5863	147.5863	3.1000e-003		147.6639
Total	**0.0668**	**0.0437**	**0.4429**	**1.4800e-003**	**0.1725**	**1.0600e-003**	**0.1736**	**0.0458**	**9.8000e-004**	**0.0467**		**147.5863**	**147.5863**	**3.1000e-003**		**147.6639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**16.0713**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0437	0.4429	1.4800e-003	0.1725	1.0600e-003	0.1736	0.0458	9.8000e-004	0.0467		147.5863	147.5863	3.1000e-003		147.6639
Total	**0.0668**	**0.0437**	**0.4429**	**1.4800e-003**	**0.1725**	**1.0600e-003**	**0.1736**	**0.0458**	**9.8000e-004**	**0.0467**		**147.5863**	**147.5863**	**3.1000e-003**		**147.6639**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**16.1491**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0625	0.0393	0.4067	1.4200e-003	0.1725	1.0400e-003	0.1736	0.0458	9.6000e-004	0.0467		141.9344	141.9344	2.7800e-003		142.0039
Total	**0.0625**	**0.0393**	**0.4067**	**1.4200e-003**	**0.1725**	**1.0400e-003**	**0.1736**	**0.0458**	**9.6000e-004**	**0.0467**		**141.9344**	**141.9344**	**2.7800e-003**		**142.0039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.9574					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**16.0713**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0625	0.0393	0.4067	1.4200e-003	0.1725	1.0400e-003	0.1736	0.0458	9.6000e-004	0.0467		141.9344	141.9344	2.7800e-003		142.0039
Total	**0.0625**	**0.0393**	**0.4067**	**1.4200e-003**	**0.1725**	**1.0400e-003**	**0.1736**	**0.0458**	**9.6000e-004**	**0.0467**		**141.9344**	**141.9344**	**2.7800e-003**		**142.0039**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

Unbundle Parking Cost

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8982	4.0137	10.2533	0.0349	3.2360	0.0292	3.2652	0.8657	0.0273	0.8930		3,533.0701	3,533.0701	0.1313		3,536.3522
Unmitigated	0.9445	4.3058	11.3371	0.0399	3.7453	0.0331	3.7785	1.0020	0.0310	1.0329		4,043.3541	4,043.3541	0.1453		4,046.9854

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	763.35	763.35	763.35	1,763,039	1,523,278
City Park	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	763.35	763.35	763.35	1,763,039	1,523,278

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
City Park	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Strip Mall	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Unenclosed Parking with Elevator	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0259	0.2209	0.0944	1.4100e-003		0.0179	0.0179		0.0179	0.0179		281.9750	281.9750	5.4000e-003	5.1700e-003	283.6507
NaturalGas Unmitigated	0.0272	0.2323	0.0992	1.4800e-003		0.0188	0.0188		0.0188	0.0188		296.5255	296.5255	5.6800e-003	5.4400e-003	298.2876

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2511.49	0.0271	0.2315	0.0985	1.4800e-003		0.0187	0.0187		0.0187	0.0187		295.4698	295.4698	5.6600e-003	5.4200e-003	297.2257
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.97315	1.0000e-004	8.8000e-004	7.4000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.0557	1.0557	2.0000e-005	2.0000e-005	1.0619
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0272**	**0.2323**	**0.0992**	**1.4900e-003**		**0.0188**	**0.0188**		**0.0188**	**0.0188**		**296.5255**	**296.5255**	**5.6800e-003**	**5.4400e-003**	**298.2876**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.38835	0.0258	0.2201	0.0937	1.4000e-003		0.0178	0.0178		0.0178	0.0178		280.9820	280.9820	5.3900e-003	5.1500e-003	282.6518
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.00844061	9.0000e-005	8.3000e-004	7.0000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9930	0.9930	2.0000e-005	2.0000e-005	0.9989
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0259**	**0.2209**	**0.0944**	**1.4000e-003**		**0.0179**	**0.0179**		**0.0179**	**0.0179**		**281.9750**	**281.9750**	**5.4100e-003**	**5.1700e-003**	**283.6507**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782
Unmitigated	5.1440	0.2732	19.2957	0.0351		1.7804	1.7804		1.7804	1.7804	255.6951	15.6234	271.3185	1.2104	0.0000	301.5782

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1441					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.1693	0.1732	10.6193	0.0347		1.7324	1.7324		1.7324	1.7324	255.6951	0.0000	255.6951	1.1953	0.0000	285.5781
Landscaping	0.2621	0.1000	8.6764	4.6000e-004		0.0480	0.0480		0.0480	0.0480		15.6234	15.6234	0.0151		16.0001
Total	**5.1440**	**0.2732**	**19.2957**	**0.0351**		**1.7804**	**1.7804**		**1.7804**	**1.7804**	**255.6951**	**15.6234**	**271.3185**	**1.2104**	**0.0000**	**301.5782**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1441					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.1693	0.1732	10.6193	0.0347		1.7324	1.7324		1.7324	1.7324	255.6951	0.0000	255.6951	1.1953	0.0000	285.5781
Landscaping	0.2621	0.1000	8.6764	4.6000e-004		0.0480	0.0480		0.0480	0.0480		15.6234	15.6234	0.0151		16.0001
Total	**5.1440**	**0.2732**	**19.2957**	**0.0351**		**1.7804**	**1.7804**		**1.7804**	**1.7804**	**255.6951**	**15.6234**	**271.3185**	**1.2104**	**0.0000**	**301.5782**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX G

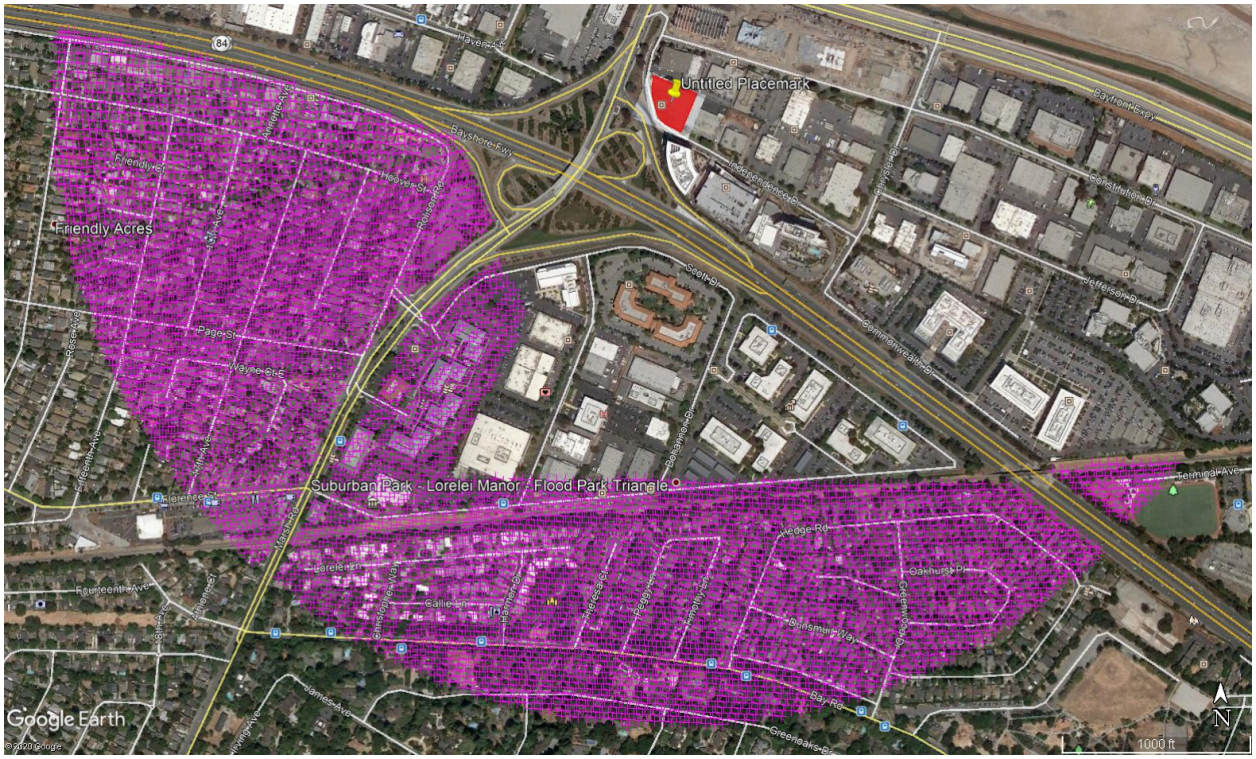
HEALTH RISK ASSESSMENT DATA

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Project Site



Sensitive Receptors within 1,000 meters



Construction Cancer Risk



Construction Chronic Hazard Index



Construction $PM_{2.5}$ Concentrations



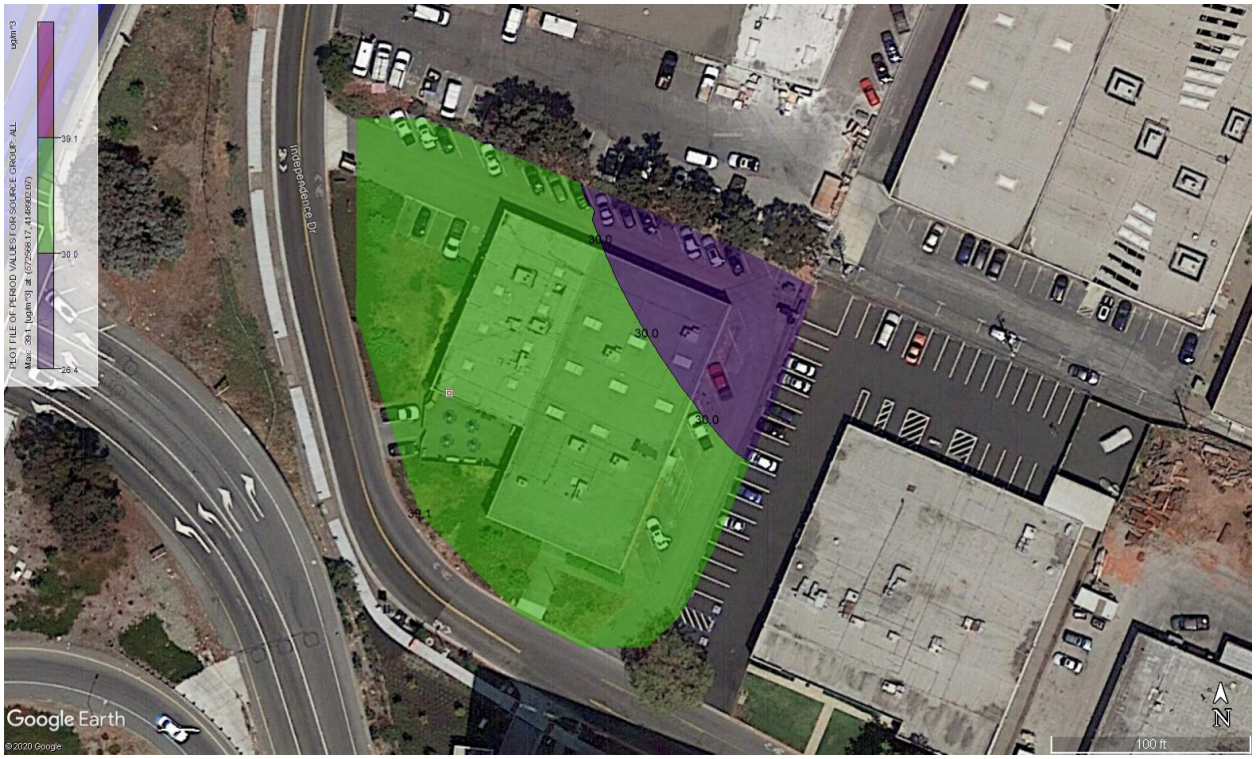
Operational Sensitive Receptors



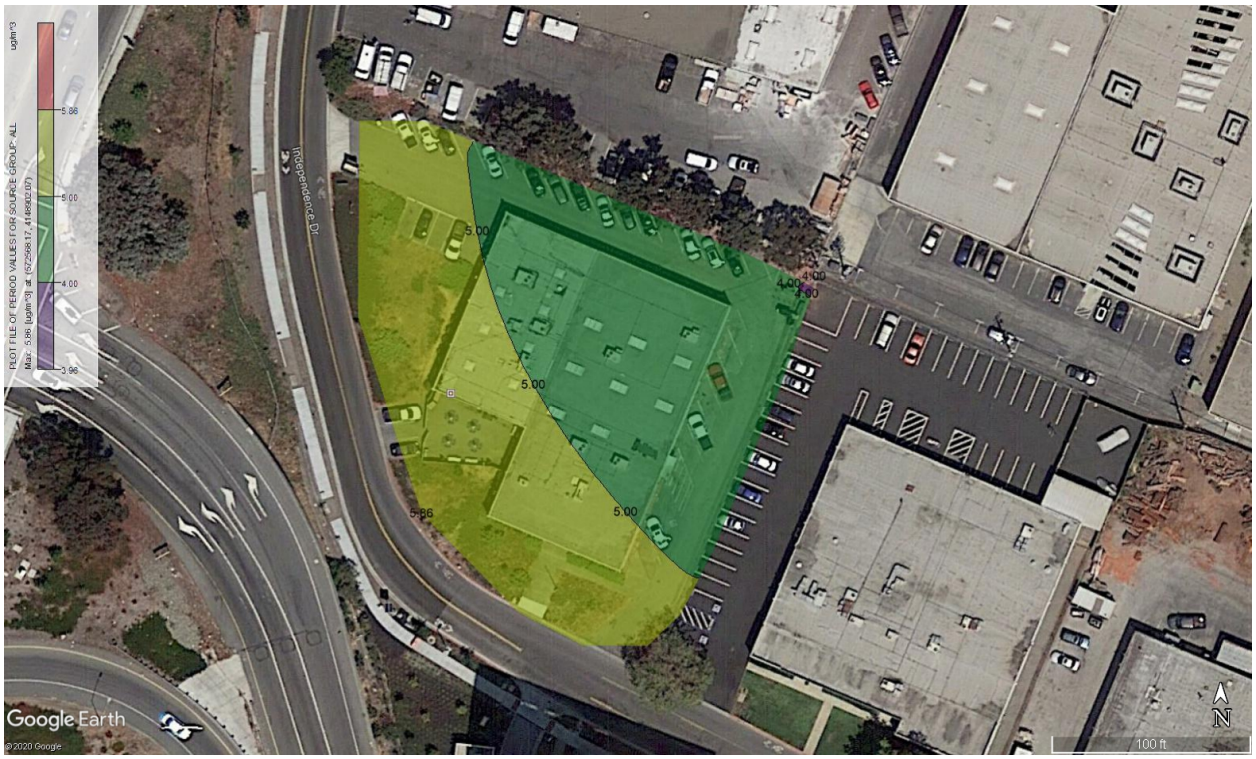
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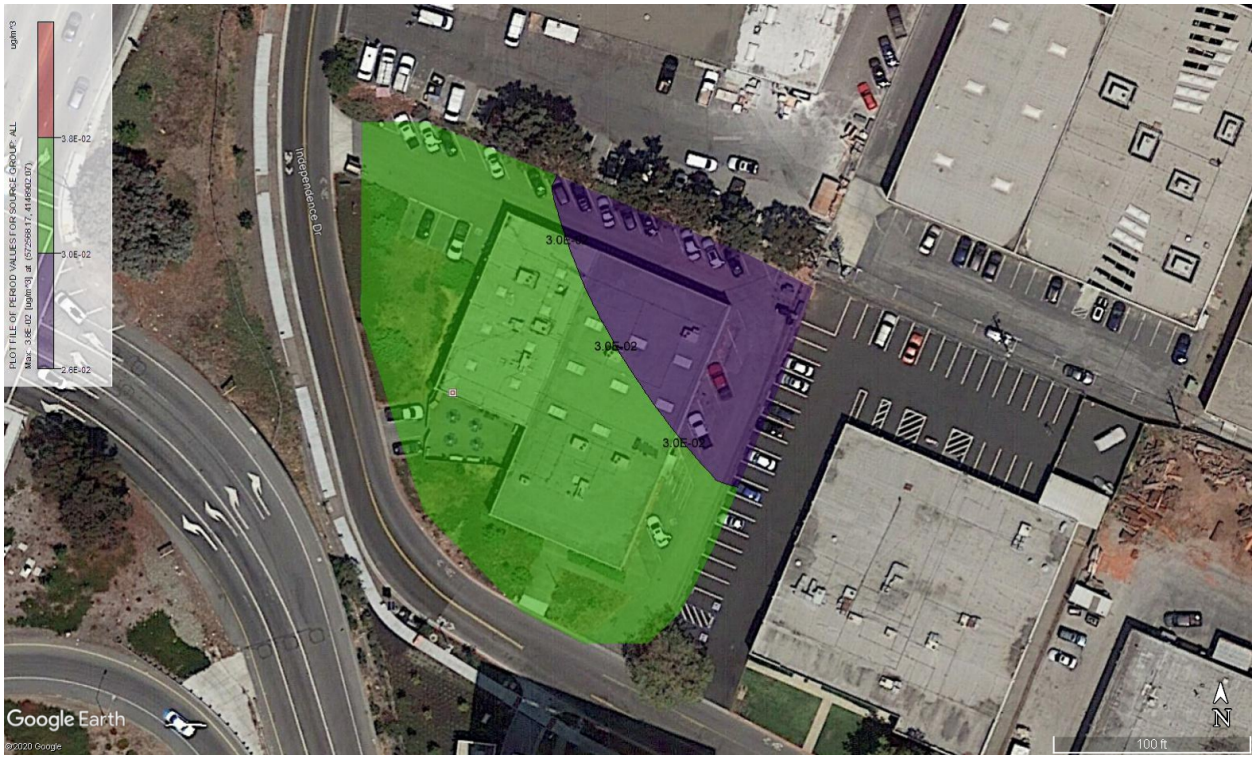
Operational Unmitigated Cancer Risk



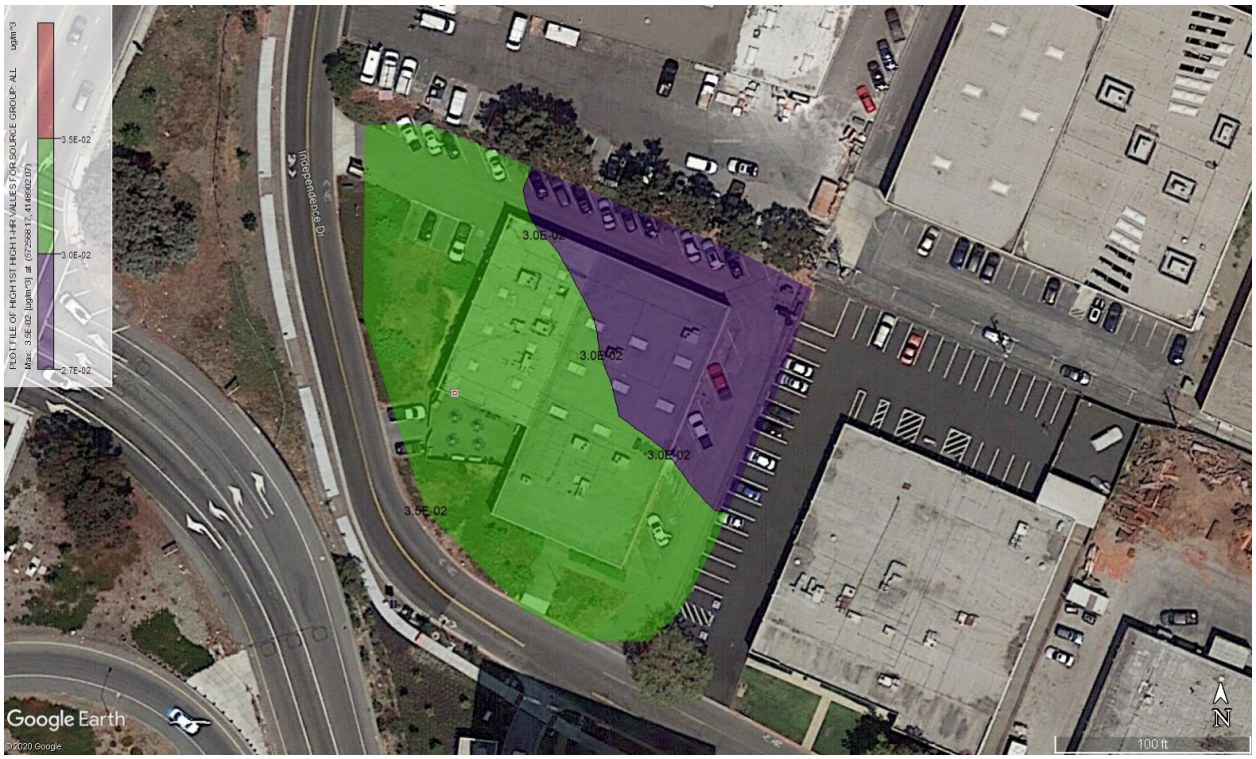
Operational Mitigated Cancer Risk



Operational Chronic Hazard Index



Operational Acute Hazard Index



Operational $PM_{2.5}$ Concentrations



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APPENDIX H

NOISE DATA

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TABLE Existing-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43060 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	67.3	133.2	281.2	603.1

TABLE Existing-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Marsh Road
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41140 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
111.4	229.8	490.3	1053.8

TABLE Existing-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30860 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 74.77

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
137.5	294.1	632.6	1362.2

TABLE Existing-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp west of Marsh Road
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 32360 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
141.3	303.4	653.2	1406.8

TABLE Existing-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road north of US-101 SB Off-Ramp
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14720 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	70.2	140.0	296.1

TABLE Existing-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 SB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31350 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
138.3	297.1	639.6	1377.4

TABLE Existing-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41920 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	75.3	161.8	348.4

TABLE Existing-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35590 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	67.6	145.1	312.4

TABLE Existing-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Chrystler Drive
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8270 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	85.8	171.6	363.3

TABLE Existing-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Constitution Drive
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3970 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	72.7

TABLE Existing-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10130 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	107.0	230.3

TABLE Existing-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive west of Chrystler Drive
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6560 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	80.2	172.4

TABLE Existing-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive east of Chyrstler Drive
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5950 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	95.0

TABLE Existing-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive west of Chyrstler Drive
NOTES: 111 Independence Drive - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5030 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	85.0

TABLE Existing-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Independence Drive
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4040 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.5

TABLE Existing-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Independence Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4450 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	78.4

TABLE Existing-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 36330 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.2	116.7	250.4	538.9

TABLE Existing-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35670 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL 70 CNEL	65 CNEL	60 CNEL	55 CNEL
54.6	115.3	247.4	532.3

TABLE Existing-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30180 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL 70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.9	129.7	275.6	591.8

TABLE Existing-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48170 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
84.3	175.7	375.7	808.0

TABLE Existing-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43650 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.4	133.3	283.4	608.6

TABLE Existing-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 64390 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.4	171.5	366.6	788.4

TABLE Existing with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43130 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.4	133.4	281.5	603.7

TABLE Existing with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Marsh Road
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41190 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
111.4	230.0	490.7	1054.6

TABLE Existing with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31000 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 74.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
137.9	295.0	634.5	1366.4

TABLE Existing with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp west of Marsh Road
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 32460 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
141.6	304.1	654.6	1409.7

TABLE Existing with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road north of US-101 SB Off-Ramp
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14780 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	70.4	140.4	296.9

TABLE Existing with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 SB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 31440 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.34

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
138.6	297.7	640.8	1380.0

TABLE Existing with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41990 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	75.4	162.0	348.8

TABLE Existing with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35670 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	67.7	145.3	312.9

TABLE Existing with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Chrystler Drive
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8420 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	86.7	173.6	367.6

TABLE Existing with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Constitution Drive
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3980 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	72.8

TABLE Existing with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10280 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	50.5	108.1	232.5

TABLE Existing with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive west of Chrystler Drive
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6710 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	81.4	175.0

TABLE Existing with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive east of Chyrstler Drive
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6100 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	96.6

TABLE Existing with Project-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive west of Chyrstler Drive
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5180 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	86.7

TABLE Existing with Project-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Independence Drive
NOTES: 111 Independence Drive - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4200 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	75.4

TABLE Existing with Project-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Independence Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4600 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	80.1

TABLE Existing with Project-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 36410 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.3	116.9	250.8	539.7

TABLE Existing with Project-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35750 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
54.7	115.5	247.7	533.1

TABLE Existing with Project-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30260 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.9	129.9	276.1	592.9

TABLE Existing with Project-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48230 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
84.4	175.9	376.0	808.6

TABLE Existing with Project-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University north of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43710 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.5	133.4	283.6	609.2

TABLE Existing with Project-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University south of Bayfront Expressway
NOTES: 111 Independence Drive - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 64440 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.5	171.6	366.8	788.8

TABLE Near Term -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 49450 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
72.6	145.5	308.1	661.2

TABLE Near Term -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Marsh Road
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 47470 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
121.4	252.3	539.1	1159.2

TABLE Near Term -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 36430 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
153.3	328.4	706.6	1521.5

TABLE Near Term -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp west of Marsh Road
NOTES: 111 Independence Drive - Near Term

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 37500 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
155.8	334.7	720.6	1552.1

TABLE Near Term -05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road north of US-101 SB Off-Ramp
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15090 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.2	142.2	301.0

TABLE Near Term -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 SB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34850 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
148.4	318.8	686.3	1478.1

TABLE Near Term -07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48310 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.7	177.9	382.9

TABLE Near Term -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38480 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.2	152.9	329.1

TABLE Near Term -09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Chrystler Drive
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11970 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.0	217.7	463.9

TABLE Near Term -10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Constitution Drive
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8640 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	56.8	121.7

TABLE Near Term -11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13830 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.3	131.6	283.3

TABLE Near Term -12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive west of Chrystler Drive
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6810 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	82.2	176.8

TABLE Near Term -13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive east of Chyrstler Drive
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6200 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	97.6

TABLE Near Term -14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive west of Chyrstler Drive
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5110 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	85.9

TABLE Near Term -15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Independence Drive
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4090 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	74.1

TABLE Near Term -16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Independence Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4530 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	79.3

TABLE Near Term -17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39220 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.0	122.8	263.5	567.1

TABLE Near Term -18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39720 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.5	123.8	265.7	571.9

TABLE Near Term -19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35860 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
70.6	145.0	308.9	663.8

TABLE Near Term -20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 51140 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.5	182.7	390.9	840.8

TABLE Near Term -21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 46620 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
68.0	139.0	296.0	635.9

TABLE Near Term -22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 67400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
84.8	176.7	377.9	812.8

TABLE Near Term with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 49520 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
72.6	145.6	308.4	661.8

TABLE Near Term with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Marsh Road
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 47520 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
121.5	252.5	539.5	1160.0

TABLE Near Term with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 36570 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
153.7	329.2	708.4	1525.4

TABLE Near Term with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp west of Marsh Road
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 37600 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
156.0	335.3	721.9	1554.9

TABLE Near Term with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road north of US-101 SB Off-Ramp
NOTES: 111 Independence Drive - Near Term with Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15150 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.3	142.6	301.8

TABLE Near Term with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 SB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34940 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
148.6	319.3	687.5	1480.6

TABLE Near Term with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48380 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.8	178.0	383.3

TABLE Near Term with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38560 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.3	153.1	329.5

TABLE Near Term with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Chrystler Drive
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12120 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.8	219.5	467.8

TABLE Near Term with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Constitution Drive
NOTES: 111 Independence Drive - Near Term with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8650 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	56.8	121.8

TABLE Near Term with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Near Term with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13980 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.8	132.6	285.3

TABLE Near Term with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive west of Chrystler Drive
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6960 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	83.4	179.3

TABLE Near Term with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive east of Chyrstler Drive
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6350 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	99.2

TABLE Near Term with Project-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive west of Chyrstler Drive
NOTES: 111 Independence Drive - Near Term with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5260 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	87.6

TABLE Near Term with Project-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Independence Drive
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4250 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	76.0

TABLE Near Term with Project-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Independence Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4680 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	81.0

TABLE Near Term with Project-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39300 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.1	122.9	263.8	567.9

TABLE Near Term with Project-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39800 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.5	124.0	266.1	572.7

TABLE Near Term with Project-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35940 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
70.7	145.2	309.4	664.8

TABLE Near Term with Project-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 51200 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.5	182.9	391.2	841.5

TABLE Near Term with Project-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University north of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 46680 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
68.0	139.2	296.2	636.4

TABLE Near Term with Project-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University south of Bayfront Expressway
NOTES: 111 Independence Drive - Near Term with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 67450 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
84.8	176.8	378.1	813.2

TABLE Cumulative without Project -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 55020 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
77.0	155.8	330.6	709.9

TABLE Cumulative without Project -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Marsh Road
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 52570 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 73.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
129.2	269.7	576.9	1240.7

TABLE Cumulative without Project -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41280 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
166.4	356.9	767.9	1653.7

TABLE Cumulative without Project -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp west of Marsh Road
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 42180 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
168.4	362.0	779.4	1678.7

TABLE Cumulative without Project -05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road north of US-101 SB Off-Ramp
NOTES: 111 Independence Drive - Cumulative without Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19620 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.5	168.3	358.0

TABLE Cumulative without Project -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 SB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38890 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
159.6	342.9	738.3	1590.2

TABLE Cumulative without Project -07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 56820 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	92.1	198.2	426.7

TABLE Cumulative without Project -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43980 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	77.7	167.1	359.7

TABLE Cumulative without Project -09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15340 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	65.4	123.0	255.8	546.8

TABLE Cumulative without Project -10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Constitution Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9050 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.29

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	58.5	125.5

TABLE Cumulative without Project -11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19770 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	77.7	167.0	359.5

TABLE Cumulative without Project -12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive west of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11290 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.7	115.0	247.5

TABLE Cumulative without Project -13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive east of Chyrstler Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10660 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.00

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	65.2	140.0

TABLE Cumulative without Project -14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive west of Chyrstler Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6580 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	101.6

TABLE Cumulative without Project -15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Independence Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4290 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	76.5

TABLE Cumulative without Project -16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Independence Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5200 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES			
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	86.9

TABLE Cumulative without Project -17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43300 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.8	131.1	281.4	605.7

TABLE Cumulative without Project -18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 45300 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.6	135.1	290.0	624.2

TABLE Cumulative without Project -19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 51490 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.8	183.6	392.7	844.7

TABLE Cumulative without Project -20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 64340 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
100.9	212.5	455.4	979.8

TABLE Cumulative without Project -21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 59780 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
78.8	163.4	349.0	750.4

TABLE Cumulative without Project -22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 82170 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
95.8	201.3	431.1	927.5

TABLE Cumulative with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 55090 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
77.1	155.9	330.9	710.5

TABLE Cumulative with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Marsh Road
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 52620 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 73.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
129.3	269.9	577.2	1241.5

TABLE Cumulative with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 41420 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
166.8	357.7	769.7	1657.5

TABLE Cumulative with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 NB Off-Ramp west of Marsh Road
NOTES: 111 Independence Drive - Cumulative with Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 42280 SPEED (MPH): 65 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.63

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
168.7	362.6	780.6	1681.3

TABLE Cumulative with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Marsh Road north of US-101 SB Off-Ramp
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19680 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.7	168.6	358.7

TABLE Cumulative with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: US-101 SB Off-Ramp east of Marsh Road
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38980 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
159.8	343.5	739.5	1592.7

TABLE Cumulative with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 56890 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	92.2	198.3	427.0

TABLE Cumulative with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 44060 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	77.8	167.3	360.1

TABLE Cumulative with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Bayfront Expressway west of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15490 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 36 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	65.7	123.7	257.5	550.3

TABLE Cumulative with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Constitution Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9060 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	58.6	125.6

TABLE Cumulative with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19920 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	78.1	167.8	361.3

TABLE Cumulative with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Constitution Drive west of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11440 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	54.1	116.0	249.7

TABLE Cumulative with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive east of Chyrstler Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10820 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	65.8	141.4

TABLE Cumulative with Project-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Jefferson Drive west of Chyrstler Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6740 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	103.2

TABLE Cumulative with Project-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chrystler Drive north of Independence Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4450 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	78.4

TABLE Cumulative with Project-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Independence Drive east of Chrystler Drive
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5350 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	88.5

TABLE Cumulative with Project-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 43380 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	61.8	131.2	281.8	606.5

TABLE Cumulative with Project-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Chilco Street south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 45380 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.7	135.2	290.3	625.0

TABLE Cumulative with Project-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 51570 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.9	183.7	393.1	845.5

TABLE Cumulative with Project-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: Willow Road south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 64400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
101.0	212.6	455.7	980.4

TABLE Cumulative with Project-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University north of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 59840 SPEED (MPH): 35 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
78.8	163.5	349.2	750.9

TABLE Cumulative with Project-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 09/23/2020
ROADWAY SEGMENT: University south of Bayfront Expressway
NOTES: 111 Independence Drive - Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 82220 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	95.9	201.3	431.3	927.9
