Environmental Assessment 25-01

Initial Study and Mitigated Negative Declaration for the proposed Ridge Estates (Tentative Subdivision Map 25-01) proposing to subdivide approximately 20.76 acres into 141 single-family residential lots. The Project also includes General Plan Amendment 25-01 and Rezoning 25-01. For the subdivision to be consistent with the General Plan, the General Plan Land Use Element is proposed to be revised for approximately 4.21 acres of the Project area from the existing Office/Office Park land use designation to the Medium Density Residential designation. The rezoning includes the entire Project area, proposing to revise the property's zoning from Multiple-Family Residential combined with the X_{24} Zone District (R-3X_{24}) and the Commercial-Office Zone District also combined with the X_{24} Zone (C-OX_{24}) District to Planned Development (PD_{21}) Zone District. There is also a proposed development agreement, the primary reason being a request for an extended 10-year life for the tentative subdivision map in exchange for additional neighborhood park fees. The property is located at 602 and 658 El Margarita Road on the west side of El Margarita Road, about one-third mile (approximately 1,850 feet) south of State Route 20 (Colusa Highway).

Prepared for:

City of Yuba City
1201 Civic Center Blvd.
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City of Yuba City
Development Services Department
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August 2025

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Table of Contents

1. Introduction 4

1.1. Introduction 4

1.2. Regulatory Information 5

1.3. Document Format 5

1.4. Purpose of Document 6

1.5. Intended Uses of this Document 6

2. Project Description 8

2.1. Project Title 8

2.2. Lead Agency Name and Address 8

2.3. Contact Person and Phone Number 8

2.4. Project Location 8

2.5. Project Applicant 8

2.6. Property owner 8

2.7. General Plan Designation 8

2.8. Zoning 9

2.9. Project description ..... **Error! Bookmark not defined.**

2.10. Surrounding Land Uses and Setting ..... **Error! Bookmark not defined.**

2.11. Other Public Agencies Whose Approval May be Required 15

2.12. Native American Tribe Consultation 12

2.13. Environmental Factors Potentially Affected: 15

2.14. Evaluation of Environmental Impacts: 17

3. Environmental Checklist and Impact Evaluation 19

3.1. Aesthetics 19

3.2. Agricultural and Forestry Resources 22

3.3. Air Quality 26

3.4. Biological Resources 33

3.5. Cultural Resources 37

3.6. Energy 40

3.7. Geology and Soils 42

3.8. Greenhouse Gas Emissions 48

3.9. Hazards and Hazardous Materials 51

3.10. Hydrology and Water Quality 56

3.11. Land Use and Planning 60

3.12. Mineral Resources 62

3.13. Noise 63
3.14. Population and Housing 69
3.15. Public Services 71
3.16. Recreation 73
3.17. Transportation/Traffic 75
3.18. Tribal Cultural Resources 78
3.19. Utilities and Service Systems 83
3.20. Wildfire 87
3.21. Mandatory Findings of Significance 89
4. Section References and/or Incorporated by Reference 91

CITY OF YUBA CITY
Development Services Department
Planning Division
1201 Civic Center Blvd. Yuba City, CA 95993 Phone (530) 822-4700

1. Introduction

1.1. Introduction

This Initial Study/Mitigated Negative Declaration (IS/MND) assesses the potential environmental impacts of proposed Tentative Subdivision Map (TSM) 25-01, Ridge Estates, which would create 141 single-family residential lots on approximately 20.76 acres. Also included is General Plan Amendment (GPA) 25-01, Rezoning (RZ) 25-01 and a development agreement (collectively "Project"). The proposed subdivision is located at 602 and 658 El Margarita Road, on the west side of El Margarita Road, approximately 1,850 feet south of State Route 20.

TSM 25-01: proposes to create Ridge Estates, a small lot 141 single-family residence subdivision on the 20.76 acres. The proposal includes all necessary public improvements including streets, curb, gutter, and sidewalks, extending sewer, water, and all other utilities and widening El Margarita Road. Excluding the El Margarita Road right-of-way dedication, the residential density will be approximately 7.1 residences per acre.

GPA 25-01: proposes to amend the General Plan designation currently applied to 4.21 acres of the Project property, from the Office and Office Park (O) land use designation to the Medium Density Residential (MDR) General Plan designation. The remaining 16.21 acres is already designated MDR.

RZ 25-01-PD_{21}: proposes to match the zoning to the proposed MDR General Plan land use designation for the entire 20.76-acre Project site. The rezoning would unify the zoning for the Project site that is currently under two zone districts. For approximately 16.23 acres it would be revised from the Multiple-Family Residential Zone District combined with the X_{24} Zone District (R-3X_{24}) and for approximately 4.21 acres the Office-Commercial Zone District combined with the X_{24} Zone District (C-OX_{24}), with all 20.76 acres rezoned to the Planned Development (PD_{21}) Zone District. The PD_{21} Zone District is proposed as smaller lots than provided for in the residential zone districts are requested.

Development Agreement: The substantive parts of the agreement that vary from standard City requirements are for a longer (10-year) life for the tentative subdivision map in exchange for additional per new residence neighborhood park fees to be paid to the City.

Property/Project history: This environmental assessment utilizes as background information a previously prepared environmental assessment prepared for this same property for another proposed project (Environmental Assessment 10-06 was prepared for Unity Estates and Office Park), as well as the EIR prepared for the General Plan update. These previously prepared documents are available from the Development Services Department.

This TSM/GPA/RZ is considered a project under the California Environmental Quality Act (CEQA), as the City has discretionary authority over the Project. The Project requires discretionary review and a recommendation by the City of Yuba City Planning Commission to the City Council followed by the City Council review and their decision.

This IS/MND has been prepared in conformance with CEQA Guidelines Section 15070. The purpose of the IS/MND is to determine the potential significant impacts associated with the proposed single-family residential development and provide an environmental assessment for consideration by the Planning Commission and City Council. In addition, this document is intended to provide the basis for input from public agencies, organizations, and interested members of the public.

1.2. Regulatory Information

An Initial Study (IS) is an environmental assessment document prepared by a lead agency to determine if a project may have a significant effect on the environment. In accordance with the California Code of Regulations Title 14 (Chapter 3, §15000 et seq.), commonly referred to as the CEQA Guidelines - Section 15064(a)(1) states an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that a proposed project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant. A negative declaration may be prepared instead; if the lead agency finds that there is no substantial evidence, in light of the whole record that a project may have a significant effect on the environment. A negative declaration is a written statement describing the reasons why a proposed project, not exempt from CEQA pursuant to §15300 et seq. of Article 19 of the Guidelines, would not have a significant effect on the environment and, therefore, why it would not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a negative declaration shall be prepared for a project subject to CEQA when either:

a) The IS shows there is no substantial evidence, in light of the whole record before the agency, that the proposed project may have a significant effect on the environment, or

b) The IS identified potentially significant effects, but:

    a. Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed negative declaration and initial study is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur is prepared, and

    b. There is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment. If revisions are adopted by the Lead Agency into the proposed project in accordance with the CEQA Guidelines Section 15070(b), a Mitigated Negative Declaration (MND) is prepared.

1.3. Document Format

This IS/MND contains four chapters. Chapter 1, Introduction, provides an overview of the proposed Project and the CEQA environmental documentation process. Chapter 2, Project Description, provides a detailed description of proposed Project objectives and components. Chapter 3, Impact Analysis, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible measures. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why the impacts will be less than significant. If the proposed Project could have a potentially significant impact on a resource, the issue

area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Chapter 4, List of Preparers, provides a list of key personnel involved in the preparation of the IS/MND.

1.4. Purpose of Document

The proposed TSM/GPA/RZ will undergo a public review process by the Planning Commission that will result in a recommendation to the City Council followed by a decision. The Project would result in the construction of 141 single-family residences. This public review process is needed to assure that the Project will be compatible with existing or expected neighboring uses and that adequate public facilities are available to serve the Project.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Pub. Res. Code, Section 21000 et seq.) and the State CEQA Guidelines (Title 14 CCR §15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The initial study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of a project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to use a previously prepared EIR and supplement that EIR, or prepare a subsequent EIR to analyze at hand. If the agency finds no substantial evidence that a project or any of its aspects may cause a significant effect on the environment, a negative declaration shall be prepared. If in the course of the analysis, it is recognized that a project may have a significant impact on the environment, but that with specific recommended mitigation measures incorporated into the project, these impacts shall be reduced to less than significant, a mitigated negative declaration shall be prepared.

In reviewing all of the available information for the above referenced proposal, the City of Yuba City Planning Division has analyzed the potential environmental impacts created by this Project and a mitigated negative declaration has been prepared.

1.5. Intended Uses of this Document

In accordance with CEQA, a good-faith effort has been made during preparation of this IS/MND to contact affected public agencies, organizations, and persons who may have an interest in the proposed project. In reviewing the Draft IS/MND, affected and interested parties should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the effects of the proposed Project would be avoided or mitigated.

The Draft IS/MND and associated appendices will be available for review on the City of Yuba City website at http://www.yubacity.net. The Draft IS/MND and associated appendixes also will be available for review during regular business hours at the City of Yuba City Development Services Department (1201 Civic Center Boulevard, Yuba City, California 95993). The 30-day review period will commence on August 26, 2025, and end on September 24, 2025 at the conclusion of the Planning Commission hearing.

Written comments on the Draft IS/MND should be sent to the following address:

City of Yuba City
Development Services Department
1201 Civic Center Boulevard

Yuba City, CA 95993
e-mail: developmentservices@yubacity.net
Phone: 530.822.4700

2. Project Description

2.1. Project Title

The Ridge Estates: Tentative Subdivision Map (TSM) 25-01, General Plan Amendment (GPA) 25-01, Rezoning (RZ) 25-01 for PD_{21}.

2.2. Lead Agency Name and Address

City of Yuba City
Development Services Department, Planning Division
1201 Civic Center Blvd.
Yuba City, CA 95993

2.3. Contact Person and Phone Number

Doug Libby, AICP
Director of Development Services
(530) 822-3231
developmentservices@yubacity.net

2.4. Project Location

The approximately 20.76-acre site is located at 602 and 658 El Margarita Road, on the west side of El Margarita Road approximately one-third mile (approximately 1,850 feet) south of its intersection with State Route 20 (Colusa Highway). The Project includes Assessor's Parcel Numbers (APNs) 63-010-136, and 63-010-137.

2.5. Project Applicant

Westmark Partner, LP
4624 Duckhorn Drive
Sacramento, CA 95834

2.6. Property Owner

Unity Health Care, LLC
469 Century Park Drive
Yuba City, CA 95991

2.7. General Plan Designation

Existing: The Project site is currently split by two land use designations. The Medium Density Residential (MDR) land use designation is applied to 16.23 acres, and the Office and Office Park (O) designation for remaining 4.21-acres.

Proposed: The Medium Density Residential (MDR) designation is proposed for the entire property. The allowed residential density for this designation is 6 to 14 residences per acre. The Project would result in a residential density of approximately 7.1 residences per acre.

2.8. Zoning

Existing: The Project is currently within two zone districts - the Multiple Family Residential Zone District combined with the X_{24} Zone District (R-3X_{24}) and the Office Commercial Zone District combined with the X_{24} Zone District (C-OX_{24}). This zoning was utilized for a previous proposed development that was not built.

Proposed: Planned Development (PD_{21}) Zone District.

2.9. Project Description

The Ridge Estates – Tentative Subdivision Map (TSM) 25-01 proposes to create 141 single-family residential lots on 20.76 acres. Also included as part of the proposal is General Plan Amendment (GPA) 25-01, Rezoning (RZ) 25-01 (PD_{21}), and a development agreement (collectively "Project").

TSM 25-01: The Ridge Estates is a small-lot single-family residential subdivision. The proposal is to subdivide the approximately 20.76-acre parcel into 141 single-family residential lots, and an 0.95-acre offer of right-of-way dedication for El Margarita Road. Lot sizes range in size between 4,450 square feet and 5,400 square feet. A copy of the tentative subdivision is provided in Figure 2, below.

Access to the new residences will be by a three new local east-west street connections to El Margarita Road, although one of those will be right-in/right-out only. A north-south local residential street on the west side of the Project is proposed to connect to neighboring vacant properties to the north and south that will provide internal local street connections if and when those properties are developed. All City services including water, sewer, and drainage will be provided to the development.

The property currently has one residence on it and associated out-buildings. All will be removed as part of this project. The remainder of the property is vacant.

GPA 25-01: proposes to amend the General Plan designation currently applied to 4.21 acres of the Project property, from the Office and Office Park (O) land use designation to the Medium Density Residential (MDR) General Plan designation. The remaining 16.21 acres is already designated MDR. The MDR designation primarily provides for residential development at a density range of 6 to 14 residences per acre. The Project as proposed would result in a residential density of approximately 7.1 residences per acre, excluding the El Margarita Road right-of-way dedication.

RZ 25-01: proposes to match the zoning to the proposed MDR General Plan land use designation for the entire Project site. The rezoning would unify the zoning for the Project site that is currently under two zone districts. For approximately 16.23 acres the zoning would be revised from the Multiple-Family Residential Zone District combined with the X_{24} Zone District (R-3X_{24}) and for approximately 4.21 acres the Office-Commercial Zone District combined with the X_{24} Zone District (C-OX_{24}), with all 20.76 acres is in rezoned to the Planned Development (PD_{21}) Zone District. The PD_{21} Zone District is proposed to accommodate the requested smaller lots than provided for in the residential zone districts.

Table 1: Proposed PD_{21} Development Standards*		
Development Standard	**Existing Two-family residential Standards**	**Proposed PD Zone District**
Minimum Lot size: Interior lot: Corner lot:	 3,500 sq. ft. 4,500 sq. ft.	 4,300 sq. ft. 5,000 sq. ft.
Minimum Lot width: Interior lots: Corner lots:	 60 ft. 50 ft.	 45 ft. 50 ft.
Minimum lot depth	None	75 ft.
Maximum percent lot coverage: One-story: Two-story:	 45% 45%	 60% 50%
Yards: Front: Garage entrance setback: Rear	 15 feet 20 feet 25 ft. or 20%	 15 ft. 18 ft. 10 ft.

*If an item is not listed above, the standards of the City of Yuba City Zoning Code for development in the Two-Family Residence (R-2) District shall apply.

The rezoning will also remove the existing X_{24} Combining Zone District. This combining zone district was applied to the properties in this area as part of the area's original annexation into the City approximately 20 years ago to ensure certain improvements are required when the area developed. The X_{24} standards required making improvements or paying fair share in-lieu fees for sewer, water, drainage, road, and levee improvements. It also required for adequate funding for police, fire, and park improvements, school expansion and requirements for affordable housing. Since that time the City has created policies, ordinances and programs for all of these improvements on a citywide basis, eliminating the need for this combining zone district.

Development Agreement: The substantive parts of the agreement that vary from standard City requirements are for a longer (10-year) life for the tentative subdivision map in exchange for additional per new residence neighborhood park fees to be paid to the City.

Figure 1: Location Map

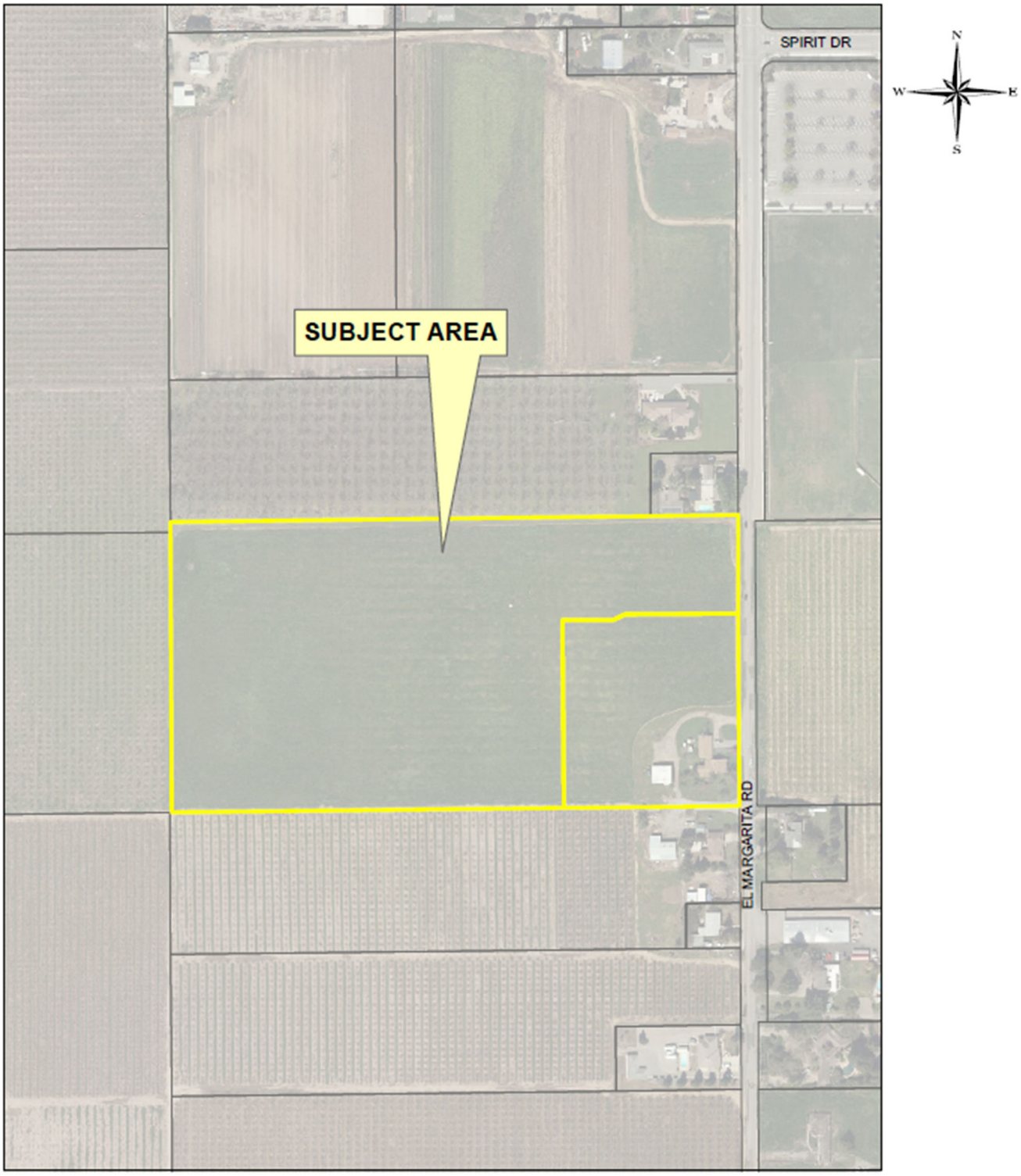


Figure 2: TSM 25-01

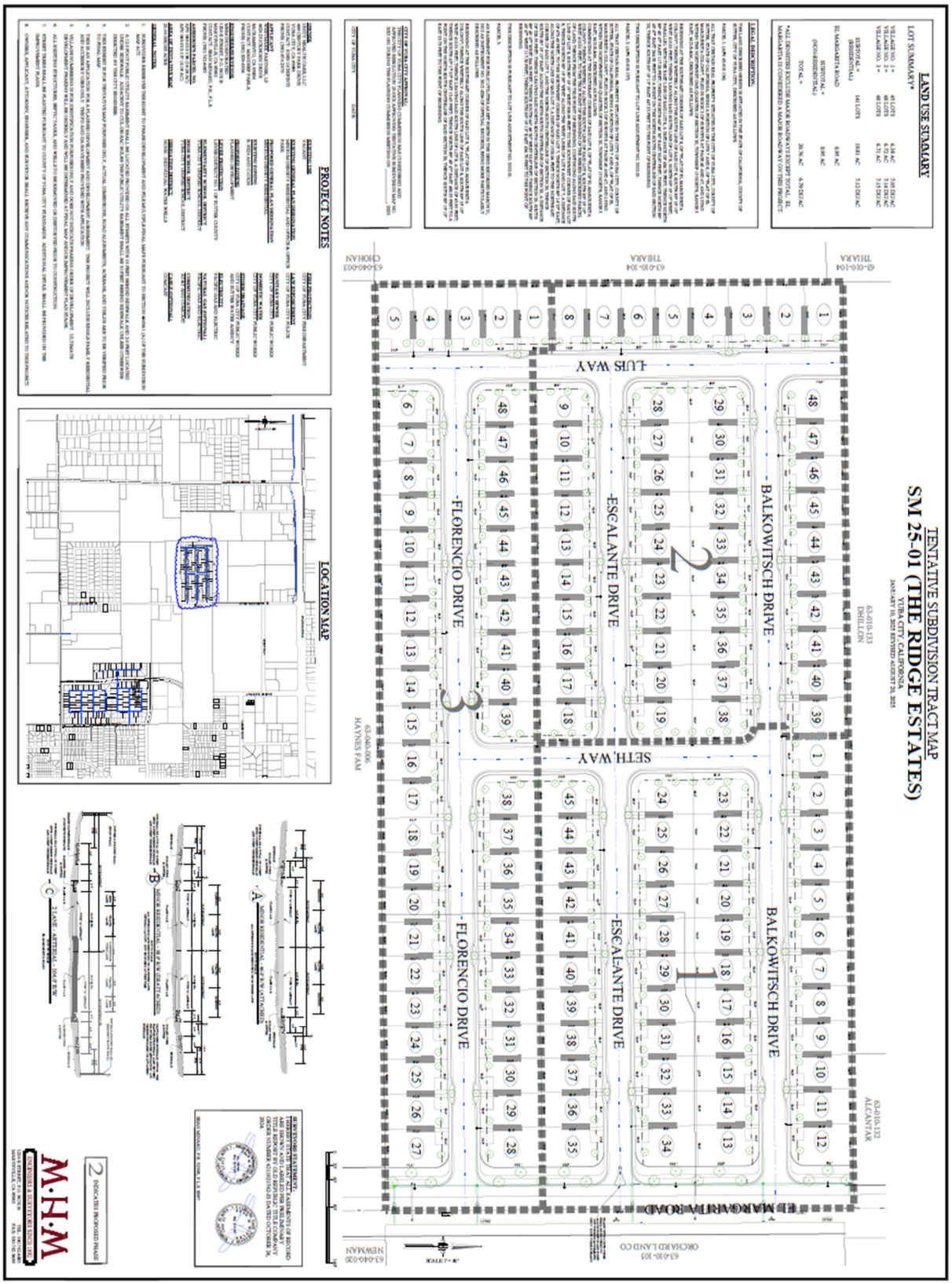


Figure 3: General Plan Amendment 25-01 - Existing and proposed GP maps

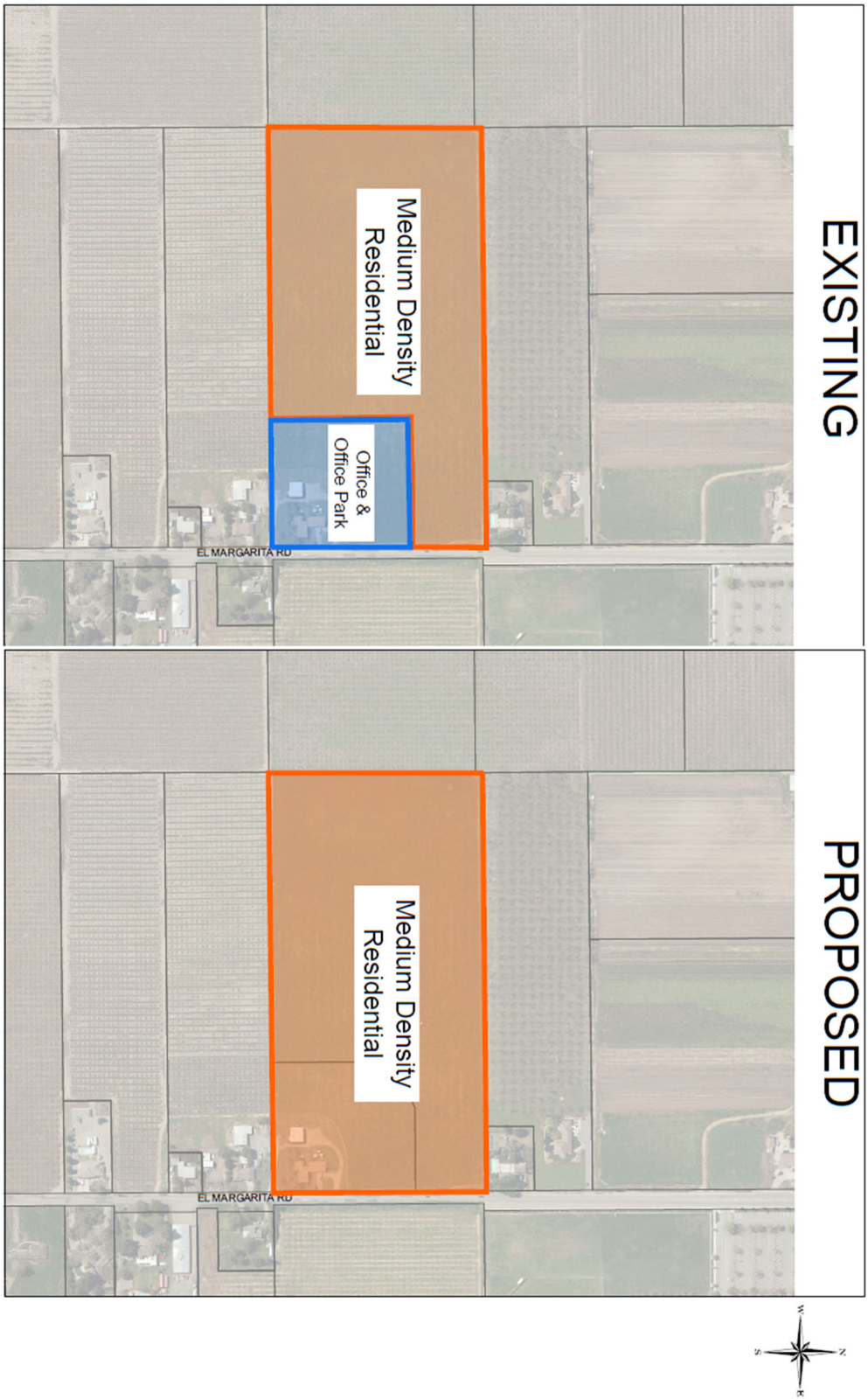
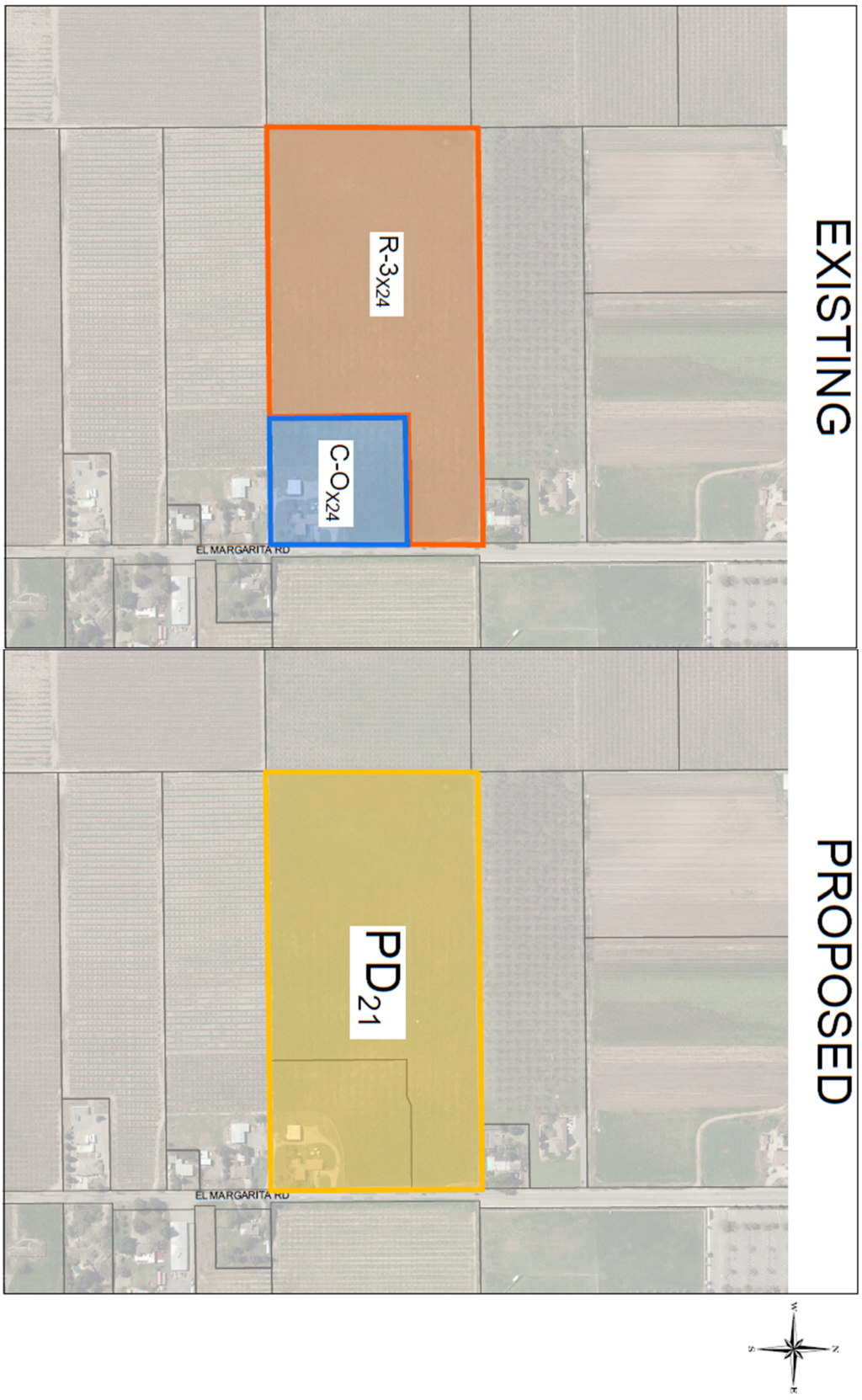


Figure 4: Rezoning 25-01: Existing and proposed zoning maps



2.10. Surrounding Land Uses and Setting

Setting: The approximately 20.76-acre property consists of two parcels. There is a single-family residence on the 4.21-acre parcel, and the 16.23-acre parcel is vacant and appears to have not been recently farmed.

Table 2: Bordering Uses	
North:	A single-family residence and orchard
South:	A single-family residence and orchard
East:	Orchard
West:	El Margarita Road and across El Margarita Road is a River Valley High School sports fields to the northeast, an orchard to the east, and a single-family residence on the southeast.

2.11. Other Public Agencies Whose Approval May be Required

Feather River Air Quality Management District, Dust Control Plan, Indirect Source Review.
Sutter County Water Agency (Live Oak Canal).

2.12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources 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.?

All geographically relevant Native American tribes were timely notified of the Project, and consultation was not requested.

2.13 Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

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

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 the 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Doug Libby
Signature

[August 26] 2025
Date

Doug Libby, AICP, Director of Development Services

2.14 Evaluation of Environmental Impacts:

A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

"Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analysis," as described below, may be cross referenced). A Mitigated Negative Declaration also requires preparation and adoption of a Mitigation Monitoring and Reporting Program (MMRP)

Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. In this case, a brief discussion should identify the following:

Earlier Analysis Used: Identify and state where they are available for review.

Impacts Adequately Addressed: Identify which effects from the above checklist were within the scope and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

Mitigation Measures: For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they addressed site-specific conditions for the project.

Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts. Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

Impacts from rezoning the property to the PD_{21} Zone District: After reviewing the proposed rezoning, it was concluded that there are no additional environmental impacts from the rezoning that are not addressed in the review of the subdivision. All of the various environmental categories, including biological resources, traffic, noise, air quality, etc., are addressed in the analysis of the impacts caused by the proposed 141 residences. Adjusting the minimum lots sizes, percent lot coverage, and other standards

may be important to the neighborhood or even the larger community, but they typically are not environmental issues. As such, there is no further discussion regarding the development criteria in the following discussions.

Impacts from the Development Agreement: The substantive part of the development agreement would be to extend the life of the tentative subdivision map to 10 years in exchange for the city receiving $3,206 per new single-family residence for neighborhood parks. After reviewing the proposed development agreement, it was concluded that there are no additional environmental impacts that are not addressed in the review of the subdivision. All of the various environmental categories, including biological resources, traffic, noise, air quality, etc., are addressed in the analysis of the impacts caused by the proposed 141 residences. There is no further discussion regarding the development criteria in the following discussions.

Environmental Checklist and Impact Evaluation

The following section presents the initial study checklist recommended by the California Environmental Quality Act (CEQA; Appendix G) to determine potential impacts of a project. Explanations of all answers are provided following each question, as necessary.

3.1 Aesthetics

Table 3-1: Aesthetics				
Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
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 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.			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

3.1.1 Environmental Setting/Affected Environment

Background views are generally considered to be long-range views in excess of 3 to 5 miles from a vantage point. Background views surrounding the Project site are limited due to the flat nature of the site and the surrounding urban landscape. Overall, the vast majority of Sutter County is relatively flat, with the Sutter Buttes being the exception. The Sutter Buttes, located approximately 7 miles northwest of the project site, are visible from much of Yuba City and Sutter County. The Sutter Buttes comprise the long-range views to the northwest and are visible from the much of the City, except in areas where trees or intervening structures block views of the mountain range.

The City's General Plan, more specifically the Community Design Element "establishes policies to ensure the creation of public and private improvements that will maintain and enhance the image, livability, and aesthetics of Yuba City in the years to come."

The following principles and policies are applicable:

- Maintain the identity of Yuba City as a small-town community, commercial hub, and residential community, surrounded by agricultural land and convey, through land uses and design amenities, Yuba City's character and place in the Sacramento Valley.

- Recognizing the livability and beauty of peer communities with highly designed visual landscapes, commit to a focus on the visual landscape of Yuba City.
- Maintain, develop, and enhance connections between existing and planned neighborhoods.
- Create and build upon a structured open space and parks network.
- Strive for lush, landscaped public areas marked by extensive tree plantings.
- Design commercial and industrial centers to be visually appealing, to serve both pedestrians and automobiles, and to integrate into the adjacent urban fabric.

In addition to the City's General Plan, the City provides Design Guidelines. The goal of the City's design guidelines is to ensure the highest quality of building design: designs that are aesthetically pleasing; designs that are compatible with the surroundings in terms of scale, mass, detailing, and building patterns; designs that accommodate the pedestrian, automobile, bicycle, and transit circulation; and designs that consider public safety, public interaction, and historic resources. However, the Design Guidelines do not apply to single-family residences, as is proposed by this subdivision.

3.1.2 Federal Regulatory Setting

Federal regulations relating to aesthetics include Organic Administration Act (1897), Multiple Use – Sustained Yield Act (1960), Wilderness Act (1964), Federal Lands Policy and Management Act (1976), Wild and Scenic Rivers Act. The proposed Project is not subject to these regulations since there are no federally designated lands or rivers in the vicinity.

3.1.3 State Regulatory Setting

The California State Scenic Highway Program was created by the California Legislature in 1963 to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code.

A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. When a city or county nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway. A scenic corridor is the land generally adjacent to and visible from the highway. A scenic corridor is identified using a motorist's line of vision. A reasonable boundary is selected when the view extends to the distant horizon. The corridor protection program does not preclude development but seeks to encourage quality development that does not degrade the scenic value of the corridor. Jurisdictional boundaries of the nominating agency are also considered. The agency must also adopt ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes. These ordinances make up the scenic corridor protection program. County roads can also become part of the Scenic Highway System. To receive official designation, the county must follow the same process required for official designation of state scenic highways. There are no designated state scenic highways in the vicinity of the Project site.

California Building Code Title 24 Outdoor Lighting Standards: The requirements vary according to which "Lighting Zone" the equipment is in. The Standards contain lighting power allowances for newly installed

equipment and specific alterations that are dependent on which Lighting Zone the project is located in. Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50 percent of the existing luminaires, for each outdoor lighting application that is regulated by the Standards, must meet the lighting power allowances for newly installed equipment.

An important part of the Standards is to base the lighting power that is allowed on how bright the surrounding conditions are. The eyes adapt to darker surrounding conditions, and less light is needed to properly see; when the surrounding conditions get brighter, more light is needed to see. The least power is allowed in Lighting Zone 1 and increasingly more power is allowed in Lighting Zones 2, 3, and 4. By default, government designated parks, recreation areas and wildlife preserves are Lighting Zone 1; rural areas are Lighting Zone 2; and urban areas are Lighting Zone 3. Lighting Zone 4 is a special use district that may be adopted by a local government. The proposed Project is located in an urban area; thereby, it is in Lighting Zone 3.

3.1.4 Impact Assessment/Environmental Consequences:

a) Have a substantial adverse effect on a scenic vista?

The Sutter Buttes, located northwest of the Project site, provides the most prominent vista. But the ground level view of the Buttes is mostly obscured by orchards and buildings. As a result, impacts on a scenic vista will be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Except for the existing residence, the remainder of the 20.76 acres appears to have been fallow for a number of years and it was previously cleared of all vegetation to accommodate an approved project. There are no trees or rock outcroppings. A portion of the property has a residence on it and associated outbuildings and landscaping. The residence will be removed as part of this Project, but it is not a historic building as it is of more recent vintage. As such, the impact of this subdivision on the aesthetics related to historic buildings and other scenic resources is less than significant.

c) In non-urbanized areas, substantially degrade the existing visual character of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

The site is within the urbanized area. The immediate vicinity is transitioning from agricultural and rural residential uses and a mix of single-family subdivision homes, ranchette type properties, and orchards. With the inclusion of the PD_{21} Zone District the homes constructed in the subdivision will be required to meet all General Plan and Zoning standards. As such, the impacts on the visual character of the area will be less than significant.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

The City requires new public streets to have streetlights, thereby providing street lighting within this

Project. However, street lighting is not typically considered a significant impact unless there are nearby special circumstances, which there is not. In this case the lighting will be similar to other developments near this proposal. Further, the City requires that the lighting be shielded to screen its direct view from a distance. Therefore, since there are no unique circumstances, the impacts from new street and home lighting will be less than significant.

3.2 Agricultural 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 prepared (1997) by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

Table 3-2: Agricultural and Forestry Resources				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

3.2.1 Environmental Setting/Affected Environment

Sutter County is located within the northern portion of California's Central Valley in the area known as the Sacramento Valley. It contains some of the richest soils in the State. These soils, combined with abundant surface and subsurface water supplies and a long, warm growing season, make Sutter County's agricultural resources very productive. Sutter County is one of California's leading agricultural counties, with 83 percent of the County's total land acreage currently being used for agricultural purposes. However, while Sutter County provides rich agricultural opportunities, the subject site is within an urban area and has been designated for urban uses for many years.

3.2.2 Federal Regulatory Setting

Farmland Protection Policy Act: The Natural Resources Conservation Service (NRCS), a federal agency within the U.S. Department of Agriculture (USDA), is the agency primarily responsible for implementation of the Farmland Protection Policy Act (FPPA). The FPPA was enacted after the 1981 Congressional report, Compact Cities: Energy-Saving Strategies for the Eighties indicated that a great deal of urban sprawl was the result of programs funded by the federal government. The purpose of the FPPA is to minimize federal programs' contribution to the conversion of farmland to non-agricultural uses by ensuring that federal programs are administered in a manner that is compatible with state, local, and private programs designed to protect farmland. Federal agencies are required to develop and review their policies and procures to implement the FPPA every two years (USDA-NRCS, 2011).

2014 Farm Bill: The Agricultural Act of 2014 (the Act), also known as the 2014 Farm Bill, was signed by President Obama on Feb. 7, 2014. The Act repeals certain programs, continues some programs with modifications, and authorizes several new programs administered by the Farm Service Agency (FSA). Most of these programs are authorized and funded through 2018.

The Farm Bill builds on historic economic gains in rural America over the past five years, while achieving meaningful reform and billions of dollars in savings for the taxpayer. It allows USDA to continue record accomplishments on behalf of the American people, while providing new opportunity and creating jobs across rural America. Additionally, it enables the USDA to further expand markets for agricultural products at home and abroad, strengthen conservation efforts, create new opportunities for local and regional food systems and grow the bio-based economy. It provides a dependable safety net for America's farmers, ranchers and growers and maintains important agricultural research, and ensure access to safe and nutritious food for all Americans.

Forestry Resources: Federal regulations regarding forestry resources are not relevant to the proposed Project because no forestry resources exist on the Project site or in the vicinity.

3.2.3 State Regulatory Setting

California Environmental Quality Act (CEQA) Definition of Agricultural Lands: Public Resources Code Section 21060.1 defines "agricultural land" for the purposes of assessing environmental impacts using the Farmland Mapping & Monitoring Program (FMMP). The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California.

California Department of Conservation, Division of Land Resource Protection: The California Department of Conservation (DOC) applies the NRCS soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. Pursuant to the DOC's FMMP, these designated agricultural lands are included in the Important Farmland Maps (IFM) used in planning for the present and future of California's agricultural land resources. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a comprehensive description of all the categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland is referred to as Farmland.

- *Prime Farmland.* Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Farmland of Statewide Importance.* Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Unique Farmland.* Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- *Farmland of Local Importance.* Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- *Grazing Land.* Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.
- *Urban and Built-up Land.* Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- *Other Land.* Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act): The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Section 51200-51297.4, and therefore is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. However, an agricultural preserve must consist of no less than 100 acres. In order to meet this requirement two or more parcels may be combined if they are contiguous, or if they are in common ownership.

The Williamson Act program is administered by the Department of Conservation (DOC), in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period, or a 20-year period for property restricted by a Farmland Security Zone Contract, wherein no conversion out of agricultural use is permitted. Each year the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the

landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on county adoption and implementation of the program and is voluntary for landowners.

Farmland Security Zone Act: The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35% reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

Forestry Resources: State regulations regarding forestry resources are not relevant to the proposed Project because no forestry resources exist on the project site or in the vicinity.

3.2.4 Impact Assessment/Environmental Consequences:

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?

The approximately 20.76-acre site is within the urban area. It is designated by the 2018 Department of Conservation Important Farmland Map for Sutter County as "Other Land" (non-agricultural). Therefore, the Project site is not considered to be Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The property has urban uses around it, including a high school, that are typically not considered to be compatible with agricultural uses. For these reasons there will be no impacts from this proposal on the conversion of agricultural land to non-agricultural uses.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The proposed Project site and surrounding area is currently zoned for urban type uses, none of which is under a Williamson Act contract. There will be no impact related to a Williamson Act contract. See discussion above under item 3.2.4.a.

c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4256), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

There is no forested land on the Project site or within the vicinity of the Project; therefore, there will be no impact on forest land.

d) Result in the loss of forestland or conversion of forest land to non-forest use?

There is no forested land on the Project site or within the vicinity of the Project. Therefore there will be no impact on forest land.

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?

As provided in Part a) above there will be no loss of agricultural land. There are no forestlands on the Project site or in the vicinity. The proposed Project is within an area long planned for urban growth and is served by City services. For these reasons there will be no impact on conversion of farmland to non-farming uses or conversion of timberland to non-timberland uses.

3.3 Air Quality

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

Table 3-3: Air Quality				
Would the project?	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
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?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?			X	

3.3.1 Environmental Setting/Affected Environment

Yuba City is located within the Sacramento Valley Air Basin (SVAB), which consists of the northern half of the Central Valley and approximates the drainage basin for the Sacramento River and its tributaries. The SVAB is bounded on the west by the Coast Range, on the north by the Cascade Range, on the east by the Sierra Nevada, and on the south by the San Joaquin Valley Air Basin. The intervening terrain is flat, and approximately 70 feet above sea level. The SVAB consists of the counties of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba and portions of Placer and Solano Counties.

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the Sacramento Valley. The climate of the SVAB is dominated by the strength and position of the semi-permanent high-pressure cell over the Pacific Ocean north of Hawaii. In summer, when the high-pressure cell is strongest and farthest north, temperatures are high and humidity is low, although the incursion of the sea breeze into the Central Valley helps moderate the summer heat. In winter, when the high-pressure cell is weakest and farthest south, conditions are characterized by occasional rainstorms interspersed with stagnant and sometimes foggy weather. Throughout the year, daily temperatures may range from summer highs often exceeding 100 degrees Fahrenheit and winter lows occasionally below freezing. Average annual rainfall

is about 20 inches with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

In addition to prevailing wind patterns that control the rate of dispersion of local pollutant emissions, the region experiences two types of inversions that affect the vertical depth of the atmosphere through which pollutants can be mixed. In the warmer months in the SVAB (May through October), sinking air forms a "lid" over the region. These subsidence inversions contribute to summer photochemical smog problems by confining pollution to a shallow layer near the ground. These warmer months are characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually, the evening breeze transports the airborne pollutants to the north and out of the SVAB. During about half of the day from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south. This phenomenon exacerbates the pollution levels in the area and increases the likelihood of violating federal or State standards. The Schultz Eddy normally dissipates around noon when the Delta sea breeze begins. In the second type of inversion, the mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants in the valley. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The air near the ground cools by radiative processes, while the air aloft remains warm. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. These inversions typically occur during winter nights and can cause localized air pollution "hot spots" near emission sources because of poor dispersion. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air and pollutants near the ground. Although these subsidence and radiative inversions are present throughout much of the year, they are much less dominant during spring and fall, and the air quality during these seasons is generally good."

Local Climate: The climate of Sutter County is subject to hot dry summers and mild rainy winters, which characterize the Mediterranean climate of the SVAB. Summer temperatures average approximately 90 degrees Fahrenheit during the day and 50 degrees Fahrenheit at night. Winter daytime temperatures average in the low 50s and nighttime temperatures are mainly in the upper 30s. During summer, prevailing winds are from the south. This is primarily because of the north- south orientation of the valley and the location of the Carquinez Straits, a sea-level gap in the coast range that is southwest of Sutter County.

Criteria Air Pollutants: Criteria air pollutants are a group of pollutants for which federal or State regulatory agencies have adopted ambient air quality standards. Criteria air pollutants are classified in each air basin, county, or in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with State and federal standards. If a pollutant concentration is lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "non-attainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

Ambient Air Quality Standards: Both the federal and State government have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health. The federal and State ambient air quality standards have been set at levels whose concentrations could be generally harmful to human health and welfare and to protect the most sensitive persons from experiencing health impacts with a margin of safety. Applicable ambient air quality standards are identified later in this section. The air pollutants for which federal and State standards have been

promulgated and which are most relevant to air quality planning and regulation in the air basins include ozone, carbon monoxide, nitrogen oxides, suspended particulate matter, sulfur dioxide, and lead. In addition, toxic air contaminants are of concern in Sutter County. Each of these pollutants is briefly described below.

Ozone (O3): is a gas that is formed when reactive organic gases (ROGs) and nitrogen oxides (NOX), both byproducts of internal combustion engine exhaust and other processes undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

Carbon Monoxide (CO): is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the SVAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

Nitrogen Oxides (NOX): is the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Many of the nitrogen oxides are colorless and odorless. However, one common pollutant, nitrogen dioxide (NO2) along with particles in the air can often be seen as a reddish-brown layer over many urban areas. Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOX are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels.

Nitrogen oxides can also be formed naturally.

Respirable Particulate Matter (PM10) and Fine Particulate Matter (PM2.5): consist of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter. Some sources of suspended particulate matter, like pollen and windstorms, occur naturally. However, in populated areas, most fine suspended particulate matter is caused by road dust, diesel soot, and combustion products, abrasion of tires and brakes, and construction activities.

Sulfur Dioxide (SO2): is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of the burning of high sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries.

Lead: occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead. Since the use of leaded gasoline is no longer permitted for on-road motor vehicles, lead is not a pollutant of concern in the SVAB.

Toxic Air Contaminants (TACs): are known to be highly hazardous to health, even in small quantities. TACs are airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness). TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations.

TAC impacts are assessed using a maximum individual cancer risk (MICR) that estimates the probability of a potential maximally exposed individual (MEI) contracting cancer as a result of sustained exposure to toxic air contaminants over a constant period of 24 hours per day for 70 years for residential receptor locations. The CARB and local air districts have determined that any stationary source posing an incremental cancer risk to the general population (above background risk levels) equal to or greater than 10 people out of 1 million to be excessive. For stationary sources, if the incremental risk of exposure to

project-related TAC emissions meets or exceeds the threshold of 10 excess cancer cases per 1 million people, the CARB and local air district require the installation of best available control technology (BACT) or maximum available control technology (MACT) to reduce the risk threshold. To assess risk from ambient air concentrations, the CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. The CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. According to the map prepared by the CARB showing the estimated inhalation cancer risk for TACs in the State of California, Sutter County has an existing estimated risk that is between 50 and 500 cancer cases per 1 million people. A significant portion of Sutter County is within the 100 to 250 cancer cases per 1 million people range. There is a higher risk around Yuba City where the cancer risk is as high as 500 cases per 1 million people. There are only very small portions of the County where the cancer risk is between 50 and 100 cases. This represents the lifetime risk that between 50 and 500 people in 1 million may contract cancer from inhalation of toxic compounds at current ambient concentrations under an MEI scenario.

3.3.2 Federal Regulatory Setting

Clean Air Act: The federal Clean Air Act of 1970 (as amended in 1990) required the U.S. Environmental Protection Agency (EPA) to develop standards for pollutants considered harmful to public health or the environment. Two types of National Ambient Air Quality Standards (NAAQS) were established. Primary standards protect public health, while secondary standards protect public welfare, by including protection against decreased visibility, and damage to animals, crops, landscaping and vegetation, or buildings. NAAQS have been established for six "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), particulate matter (PM10 and PM2.5), and lead (Pb).

3.3.3 State Regulatory Setting

California Air Resources Board: The California Air Resources Board (CARB) is the state agency responsible for implementing the federal and state Clean Air Acts. CARB has established California Ambient Air Quality Standards (CAAQS), which include all criteria pollutants established by the NAAQS, but with additional regulations for Visibility Reducing Particles, sulfates, hydrogen sulfide (H2S), and vinyl chloride. The proposed Project is located within the Sacramento Valley Air Basin, which includes Butte, Colusa, Glenn, Tehama, Shasta, Yolo, Sacramento, Yuba Sutter and portions of Placer, El Dorado and Solano counties. Air basins are classified as attainment, nonattainment, or unclassified. The FRAQMD is comprised Sutter and Yuba Counties. Attainment is achieved when monitored ambient air quality data is in compliance with the standards for a specified pollutant. Non-compliance with an established standard will result in a nonattainment designation and an unclassified designation indicates insufficient data is available to determine compliance for that pollutant.

California Clean Air Act: The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO2, and NO2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

CARB Portable Equipment Registration Program: This program was designed to allow owners and operators of portable engines and other common construction or farming equipment to register their

equipment under a statewide program so they may operate it statewide without the need to obtain a permit from the local air district.

U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program: The California Clean Air Act (CCAA) requires CARB to achieve a maximum degree of emissions reductions from off-road mobile sources to attain State Ambient Air Quality Standards (SAAQS); off-road mobile sources include most construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996. These standards, along with ongoing rulemaking, address emissions of nitrogen oxides (NOX) and toxic particulate matter from diesel engines. CARB is currently developing a control measure to reduce diesel PM and NOX emissions from existing off-road diesel equipment throughout the state.

California Global Warming Solutions Act: Established in 2006, Assembly Bill 32 (AB 32) requires that California's GHG emissions be reduced to 1990 levels by the year 2020. This will be implemented through a statewide cap on GHG emissions, which will be phased in beginning in 2012. AB 32 requires CARB to develop regulations and a mandatory reporting system to monitor global warming emissions level.

3.3.4 Regional Regulatory Setting

Feather River Air Quality Management District (FRAQMD): The FRAQMD is a bi-county district formed in 1991 to administer local, state, and federal air quality management programs for Yuba and Sutter Counties within the Sacramento Valley Air Basin. The goal of the FRAQMD is to improve air quality in the region through monitoring, evaluation, education and implementing control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations and by supporting and implementing measures to reduce emissions from motor vehicles.

FRAQMD updated its Indirect Source Review Guidelines to reflect the most recent methods recommended to evaluate air quality impacts and mitigation measures for land use development projects in June 2010. The guidelines contain criteria and thresholds for determining whether a project may have a significant adverse impact on air quality, and methods available to mitigate impacts on air quality. This analysis uses guidance and thresholds of significance from the 2010 FRAQMD Indirect Source Review Guidelines to evaluate the proposed Project's air quality impacts.

According to FRAQMD's 2010 Indirect Source Review Guidelines, a project would be considered to have a significant impact on air quality if it would:

- Generate daily construction or operational emissions that would exceed 25 pounds per day for reactive organic gases (ROG), 25 pounds per day for oxides of nitrogen (NOX), or 80 pounds per day for PM10; or generate annual construction or operational emissions of ROG or NOX that exceed 4.5 tons per year.

Northern Sacramento Valley Planning Area 2015 Air Quality Attainment Plan: As specified in the California Clean Air Act of 1988 (CCAA), Chapters 1568-1588, it is the responsibility of each air district in California to attain and maintain the state's ambient air quality standards. The CCAA requires that an Attainment Plan be developed by all nonattainment districts for O3, CO, SOx, and NOx that are either receptors or contributors of transported air pollutants. The purpose of the Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan (TAQAP) is to comply with the requirements of the CCAA as implemented through the California Health and Safety Code. Districts in the NSVPA are required to update the Plan every three years. The TAQAP is formatted to reflect the 1990 baseline emissions year with a planning horizon of 2020. The Health and Safety Code, sections 40910 and 40913, require the Districts to

achieve state standards by the earliest practicable date to protect the public health, particularly that of children, the elderly, and people with respiratory illness.

Health and Safety Code Section 41503(b): Requires that control measures for the same emission sources are uniform throughout the planning area to the extent that is feasible. To meet this requirement, the NSVPA has coordinated the development of an Attainment Plan and has set up a specific rule adoption protocol. The protocol was established by the Technical Advisory Committee of the Sacramento Valley Basin-wide Air Pollution Control Council and the Sacramento Valley Air Quality Engineering and Enforcement Professionals, which allow the Districts in the Basin to act and work as a united group with the CARB as well as with industry in the rule adoption process. Section 40912 of the Health and Safety Code states that each District responsible for, or affected by, air pollutant transport shall provide for attainment and maintenance of the state and federal standards in both upwind and downwind Districts. This section also states that each downwind District's Plan shall contain sufficient measures to reduce emissions originating in each District to below levels which violate state ambient air quality standards, assuming the absence of transport contribution.

3.3.5 Impact Assessment/Environmental Consequences:

a) Conflict with or obstruct implementation of the applicable air quality plan?

If approved, constructing the subdivision will involve site grading, construction of the infrastructure, and construction of 141 single-family residences. This activity would temporarily create both equipment exhaust and fugitive dust from the site grading. There will also be ongoing air quality impacts from the auto use generated by the 141 residences. The Feather River Air Quality Management District (FRAQMD) adopted "*Indirect Source Review Guidelines"* (Guidelines) sets standards for what are typically acceptable threshold levels of pollutants for a project's operational phase and construction phase. The thresholds are provided in Table 3, below. If a project generates any of these pollutants in excess of the numbers provided, the impact is considered significant if without further mitigation.

Table 3: FRAQMD Thresholds of Significance

Project Phase	Nitrogen Oxides (NOx)	Reactive Organic Gases (ROG)	Particulate Matter
Operational	25 lbs./day	25 lbs./day	80 lbs./day
Construction	25 lbs./day multiplied by proj. length, not to exceed 4.5 tons/yr.*	25 lbs./day multiplied by proj. length, not to exceed 4.5 tons/yr.*	80 lbs./day

*NOx and ROG construction emissions may be averaged over the life of the Project, not to exceed 4.5 tons/yr.

FRAQMD's Indirect Source Review Guidelines provides Screening Criteria that estimates project sizes that would be expected to exceed the operational thresholds provided above. Per the Screening Criteria provided in Table 5-1 of the Guidelines, the proposed 141 lots will exceed the FRAQMD adopted operational threshold criteria of 130 homes. As such, the Project submittal included an air quality study titled "Ridge Estates Detailed Report, updated June 2025, prepared by MHM Engineering (See Appendix A). The study showed that with proposed mitigations, the project's construction and operational emissions would not exceed the thresholds of significance.

In a response to the request for comments on this proposal, which included the air quality study, FRAQMD responded that if the recommended mitigation measures are applied to the Project, the impacts would be considered less than significant:

- Apply the mitigation measures provided in the air quality analysis.
- No wood stoves or fireplaces may be utilized.
- Water the construction site twice daily with a water truck.
- Submit a Fugitive Dust Control Plan to FRAQMD prior to beginning grading and construction.

With the application of the FRAQMD recommended mitigation measures, air quality impacts from the Project would be less than significant.

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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

As discussed in a) above the proposed 141 single-family residences would generate criteria pollutants during its construction and from ongoing vehicle traffic generated by the new development. However, with the FRAQMD recommended mitigations a applied to the Project, the cumulative impacts are considered to be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

The FRAQMD defines sensitive receptors as facilities that house or attract children, the elderly, and people with illnesses, or others who are especially sensitive to the effects of air pollutants. FRAQMD Guidelines state that if a project is located within 1,000 feet of a sensitive receptor, the impact of diesel particulate matter shall be evaluated. According to the FRAQMD's Indirect Source Review Guidelines, "Construction activity can result in emissions of particulate matter from the diesel exhaust (diesel PM) of construction equipment.

River Valley High School, which is located immediately northeast of the Project site, is a sensitive receptor. The nearest point of the construction site to school property is less than 100 feet. Distance to the nearest building is approximately 700 feet. Since site construction is temporary, and based on FRAQMD comments and recommended mitigations, and adopted standards for operation of diesel powered equipment, the high school students would not be exposed to substantial amounts of diesel particulate matter. Therefore, any exposure of students to pollutant concentrations would be less than significant.

d) Result in other emissions such as those leading to odors adversely affecting a substantial number of people?

Single-family residential uses typically do not generate objectionable odors. As such, the potential impact of the Project creating local offensive odors would be less than significant.

3.3.6 Air Quality Mitigation Measures

Air Quality Mitigation Measure 1:

Apply the following air quality criteria:

1. Prepare and implement the Fugitive Dust Control Plan.
2. No wood burning stoves or fireplaces are permitted in any of the homes.
3. Water the grading and construction sites twice daily with a water truck.
4. Apply any other mitigation measures provided in the air quality analysis.

3.4 Biological Resources

Table 3.4: Biological Resources				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Game or U.S. Fish and Wildlife Service?			X	
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 Game or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on states or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?				X

3.4.1 Environmental Setting/Affected Environment

The level approximately 20.76 acres are within the Yuba City urbanized area. The Yuba City General Plan in 2004 comprehensively planned this vicinity for urbanization. An environmental impact report was prepared for the General Plan, including a review of local biological resources. As an implementation of the General Plan, City transportation, water, wastewater, and drainage plans have also comprehensively planned for these services to be provided in this area. As a result, the site is in an area that is transitioning

between agricultural uses and urban development. There are remaining orchards on three sides of the Project but a modern high school immediately northeast of the site and there is a suburban subdivision just south of the site, beyond the orchard.

3.4.2. Federal & State Regulatory Setting

Threatened and Endangered Species: State and federal "endangered species" legislation has provided California Department of Fish & Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Migratory Birds: State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Birds of Prey: Birds of prey are also protected in California under provisions of the California Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

Wetlands and Other Jurisdictional Waters: Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts.

Waters of the U.S. generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters, which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce.

- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified in the bulleted items above.

As determined by the United States Supreme Court in its 2001 Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated Carabell/Rapanos decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable, and therefore, jurisdictional water.

The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

CEQA Guidelines Section 15380: Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specific criteria that define "endangered" and "rare" as specified in CEQA Guidelines section 15380(b).

3.4.3. Local Regulatory Setting

The General Plan provides the following policies for the protection of biological resources within the project area:

8.4-G-1 Protect special status species, in accordance with State regulatory requirements.

8.4-G-2 Protect and enhance the natural habitat features of the Feather River and new open space corridors within and around the urban growth area.

8.4-G-3 Preserve and enhance heritage oaks in the Planning Area.

8.4-G-4 Where appropriate, incorporate natural wildlife habitat features into public landscapes, parks, and other public facilities

8.4-I-1 Require protection of sensitive habitat area and special status species in new development site designs in the following order: 1) avoidance; 2) onsite mitigation; 3) offsite mitigation. Require assessments of biological resources prior to approval of any development within 300 feet of any creeks, sensitive habitat areas, or areas of potential sensitive status species.

8.4-I-2 Require preservation of oak trees and other native trees that are of a significant size, by requiring site designs to incorporate these trees to the maximum extent feasible.

8.4-I-3 Require to the extent feasible, use of drought tolerant plants in landscaping for new development, including private and public projects.

3.4.5 Impact Assessment/Environmental Consequences:

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 Game or U.S. Fish and Wildlife Service?

A review of the approximately 20.76-acre site identified no native trees or orchard trees remain on the property. There are no wetland areas or creek corridors or areas that appear to be sensitive habitat areas. The site is several miles from the Feather River. Per the EIR prepared for the General Plan update, there were no known special status species identified within by the General Plan in the vicinity. Therefore, the impact on biological resources would be less than significant.

According to the Yuba City General Plan EIR, the only designated special status vegetation species within Yuba City and its Sphere of Influence is the Golden Sunburst, a flowering plant that occurs primarily in non-native grasslands and is threatened mostly by the conversion of habitat to urban uses. The habitat area for this particular species occurs at the extreme eastern boundary of the Planning Area at the confluence of the Feather and Yuba Rivers. This property does not fall within this area, therefore there would a less than significant impact to special status species as a result of this project.

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 Game or U.S. Fish and Wildlife Service?

See a) above.

c) Have a substantial adverse effect on states or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No wetlands or federal jurisdictional waters of the U.S. are present within the proposed Project area or general vicinity. There would be no impact on any wetland areas or waterways.

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?

The proposed Project would not disturb any waterways, as the nearest waterway is the Feather River several miles east. Therefore, migratory fish would not be affected. Nor are there any trees proposed to be removed that could be potential nesting habitat for raptors and migratory birds that may choose to nest on the property. As such the impacts on fish or wildlife habitat would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No native trees or other known biological resources that would be protected by local policies or ordinances exist on the Project site. The EIR prepared for the General Plan did not identify any critical species in the vicinity. Therefore, the impacts on biological resources caused by this Project would be less than significant.

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?

There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or any other approved local, regional, or state habitat conservation plans in the vicinity of this Project.

3.5 Cultural Resources

Table 3.5: Cultural Resources				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.			X	
b) Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5.		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

3.5.1 Federal Regulatory Setting

National Historic Preservation Act of 1966 (as amended), Section 106: The significance of cultural resources is evaluated under the criteria for inclusion in the National Register of Historic Places (NRHP), authorized under the National Historic Preservation Act of 1966, as amended. The criteria defined in 36 CFR 60.4 are as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That have yielded, or may be likely to yield, information important to prehistory or history.

Sites listed or eligible for listing on the NRHP are considered to be historic properties. Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

3.5.2 State Regulatory Setting

CEQA requires consideration of project impacts on archaeological or historical sites deemed to be "historical resources." Under CEQA, a substantial adverse change in the significant qualities of a historical resource is considered a significant effect on the environment. For the purposes of CEQA, a "historical resource" is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (Title 14 CCR §15064.5[a][1]-[3]). Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC §5020.1[j]).

The eligibility criteria for the California Register are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation). Generally, a resource is considered "historically significant" if it meets one or more of the following criteria for listing on the California Register:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1[c])

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (CCR Title 14, § 4852(c)).

Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC §5020.1[j]).

California Health and Safety Code Section 7050.5: Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

3.5.3 Native American Consultation

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the PRC regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (PRC § 21074; 21083.09). AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC § 21080.3.1, 21080.3.2, 21082.3).

Effective March 2005, Senate Bill 18 requires city and county governments to consult with California Native American tribes early in the planning process with the intent of protecting traditional tribal cultural places. The purpose of involving the tribes at the early stage of planning efforts is to allow consideration of tribal cultural places in context of broad local land use policy before project-level land use decisions are made by a local government. As such, SB 18 applies to the adoption or substantial amendment of general or specific plans. As the later adopted AB 52 provides for a similar review process for all discretionary reviews including general plan amendments and specific plan amendments, the provisions of SB 18 fall within the SB 52 review process for purposes of this document.

In response to AB 52 and SB 18, the City sent letters on January 29th and 31st to the following Native American tribes with a Project description and map of the proposed Project area and a request for comments:

- United Auburn Indian Community of the Auburn Rancheria
- Yocha Dehe Wintun Nation
- Estom Yomeka Maidu Tribe of the Enterprise Rancheria
- Mechoopda Indian Tribe
- Pakan'yani Maidu of Strawberry Valley
- Mooretown Rancheria of Maidu Indians
- Ione Band of Miwok Indians

Additional details on tribal comments are provided in Section 3.18, Tribal Cultural Resources.

3.5.4 Impact Assessment/Environmental Consequences:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.

The site is fallow except for a single-family residence and associated out buildings located at the southeast corner of the Project area. The residence is of a more recent vintage. Therefore, the impacts on any historical resources, directly or indirectly, are less than significant.

b) Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5.

There are no known archaeological resources located on the site. The site was cleared many years ago and utilized for agriculture. Because of the past ground disturbance and human occupation, it is unlikely that any archaeological resources exist. As such the impacts on archaeological resources will be less than significant.

c) Disturb any human remains, including those interred outside of formal cemeteries?

The site was cleared many years ago and utilized for agriculture. No formal cemeteries or other places of human internment are known to exist on the proposed Project site. However, there still remains the potential for previously unknown sub-surface resources to be present. As such the "Unanticipated Discoveries" mitigation will be utilized since there still remains the potential for previously unknown sub-

surface resources to be present. In order to avoid potential significant impacts to unknown remains, the mitigation measure is provided in Section 3.18.

3.6 Energy

Table 3-6: Energy				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

3.6.1 State Regulatory Setting

California has implemented numerous energy efficiency and conservation programs that have resulted in substantial energy savings. The State has adopted comprehensive energy efficiency standards as part of its Building Standards Code, California Codes of Regulations, Title 24. In 2009, the California Building Standards Commission adopted a voluntary Green Building Standards Code, also known as CALGreen, which became mandatory in 2011. Both Title 24 and CALGreen are implemented by the City of Yuba City in conjunction with its processing of building permits.

CALGreen sets forth mandatory measures, applicable to new residential and nonresidential structures as well as additions and alterations, on water efficiency and conservation, building material conservation, interior environmental quality, and energy efficiency. California has adopted a Renewables Portfolio Standard, which requires electricity retailers in the state to generate 33% of electricity they sell from renewable energy sources (i.e., solar, wind, geothermal, hydroelectric from small generators, etc.) by the end of 2020. In 2018, SB 100 was signed into law, which increases the electricity generation requirement from renewable sources to 60% by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

3.6.2. Impact Assessment/Environmental Consequences

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Project construction would involve fuel consumption and use of other non-renewable resources. Construction equipment used for such improvements typically runs on diesel fuel or gasoline. The same fuels typically are used for vehicles that transport equipment and workers to and from a construction site. However, construction-related fuel consumption would be finite, short-term, and consistent with

construction activities of a similar character. This energy use would not be considered wasteful, inefficient, or unnecessary.

Electricity may be used for equipment operation during construction activities. It is expected that more electrical construction equipment would be used in the future, as it would generate fewer air pollutant and GHG emissions. This electrical consumption would be consistent with construction activities of a similar character; therefore, the use of electricity in construction activities would not be considered wasteful, inefficient, or unnecessary, especially since fossil fuel consumption would be reduced. Moreover, as it is expected that over time a greater share of electricity would be provided from renewable energy sources so less fossil fuel consumption to generate electricity would occur.

The Project would be required to comply with CALGreen and with the building energy efficiency standards of California Code of Regulations Title 24, Part 6 in effect at the time of Project approval. Compliance with these standards would reduce energy consumption associated with Project operations, although reductions from compliance cannot be readily quantified. Overall, Project construction would typically not consume energy resources in a manner considered wasteful, inefficient, or unnecessary. As such the impact on energy resources is considered to be less than significant.

Project impacts related to energy consumption are considered less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The Project would be required to be consistent with applicable state and local plans for energy efficiency. Assuming the standards are met, the Project's impacts on energy consumption would be less than significant.

3.7 Geology and Soils

Table 3.7: Geology and Soils				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly create 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			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geological 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?				X
d) Be located on expansive soil, as defined in the California Building Code creating substantial direct or indirect risks to life or property?				X
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?				X
f) Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature?		X		

3.7.1 Environmental Setting/Affected Environment

Topography and Geology: According to the Sutter County General Plan, Sutter County is located in the flat surface of the Great Valley geomorphic province of California. The Great Valley is an alluvial plain approximately 50 miles wide and 400 miles long in the central portion of California. The Great Valley's northern portion is the Sacramento Valley, drained by the Sacramento River, and its southern portion is the San Joaquin Valley, drained by the San Joaquin River. The geology of the Great Valley is typified by thick sequences of alluvial sediments derived primarily from erosion of the mountains of the Sierra Nevada to the east, and to a lesser extent, erosion of the Klamath Mountains and Cascade Range to the

north. These sediments were transported downstream and subsequently laid down as a river channel, floodplain deposits, and alluvial fans.

Seismic Hazards: Earthquakes are due to a sudden slip of plates along a fault. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks such as water, power, gas, communication, and transportation lines. Other damage-causing effects of earthquakes include surface rupture, fissuring, settlement, and permanent horizontal and vertical shifting of the ground. Secondary impacts can include landslides, seiches, liquefaction, and dam failure.

Seismicity: Although all of California is typically regarded as seismically active, the Central Valley region does not commonly experience strong ground shaking resulting from earthquakes along known and previously unknown active faults. Though no active earthquake faults are known to exist in Yuba City, active faults in the region could generate ground motion felt within the County. Numerous earthquakes of magnitude 5.0 or greater on the Richter scale have occurred on regional faults, primarily those within the San Andreas Fault System in the region. There are several potentially active faults underlying the Sutter Buttes, which are associated with deep-seated volcanism.

The faults identified in Sutter County include the Quaternary Faults, located in the northern section of the County within the Sutter Buttes, and the Pre-Quaternary Fault, located in the southeast of the City, just east of where Highway 70 enters into the County. Both Faults are listed as non-active faults but have the potential for seismic activity.

Ground Shaking: As stated in the Sutter County Multi-Hazard Mitigation Plan, although the County has felt ground shaking from earthquakes with epicenters located elsewhere, no major earthquakes or earthquake related damage has been recorded within the County. Based on historic data and known active or potentially active faults in the region, parts of Sutter County have the potential to experience low to moderate ground shaking. The intensity of ground shaking at any specific site depends on the characteristics of the earthquake, the distance from the earthquake fault, and on the local geologic and soils conditions. Fault zone maps are used to identify where such hazards are more likely to occur based on analyses of faults, soils, topography, groundwater, and the potential for earthquake shaking sufficiently strong to trigger landslide and liquefaction.

Liquefaction: Liquefaction, which can occur in earthquakes with strong ground shaking, is mostly found in areas with sandy soil or fill and a high-water table located 50 feet or less below the ground surface. Liquefaction can cause damage to property with the ground below structures liquefying making the structure unstable causing sinking or other major structural damage. Evidence of liquefaction may be observed in "sand boils," which are expulsions of sand and water from below the surface due to increased pressure below the surface.

Liquefaction during an earthquake requires strong shaking and is not likely to occur in the city due to the relatively low occurrence of seismic activity in the area; however, the clean sandy layers paralleling the Sacramento River, Feather River, and Bear River have lower soil densities and high overall water table are potentially a higher risk area if major seismic activity were to occur. Areas of bedrock, including the Sutter Buttes have high density compacted soils and contain no liquefaction potential, although localized areas of valley fill alluvium can have moderate to high liquefaction potential.

Landslides: Landslides are downward and outward movements of slope forming materials which may be rock, soil, artificial fill, or combinations of such materials. The size of landslides varies from those containing less than a cubic yard of material to massive ones containing millions of cubic yards. Large landslides may move down slope for hundreds of yards or even several miles. A landslide may move rapidly or so slow that a change of position can be noted only over a period of weeks or years. A similar,

but much slower movement is called creep. The susceptibility of a given area to landslides depends on a great many variables. With the exception of the Sutter Buttes, Yuba City is located in a landslide-free zone due to the flat topography. The Sutter Buttes are considered to be in a low landslide hazard zone as shown in Bulletin 198 by the California Division of Mines and Geology.

Soil Erosion: Erosion is a two-step process by which soils and rocks are broken down or fragmented and then transported. The breakdown processes include mechanical abrasion, dissolution, and weathering. Erosion occurs naturally in most systems but is often accelerated by human activities that disturb soil and vegetation. The rate at which erosion occurs is largely a function of climate, soil cover, slope conditions, and inherent soil properties such as texture and structure. Water is the dominant agent of erosion and is responsible for most of the breakdown processes as well as most of the transport processes that result in erosion. Wind may also be an important erosion agent. The rate of erosion depends on many variables including the soil or rock texture and composition, soil permeability, slope, extent of vegetative cover, and precipitation amounts and patterns. Erosion increases with increasing slope, increasing precipitation, and decreasing vegetative cover. Erosion can be extremely high in areas where vegetation has been removed by fire, construction, or cultivation. High rates of erosion may have several negative impacts including degradation and loss of agricultural land, degradation of streams and other water habitats, and rapid silting of reservoirs.

Subsidence: Subsidence is the sinking of a large area of ground surface in which the material is displaced vertically downward, with little or no horizontal movement. Subsidence is usually a direct result of groundwater, oil, or gas withdrawal. These activities are common in several areas of California, including parts of the Sacramento Valley and in large areas of the San Joaquin Valley. Subsidence is a greater hazard in areas where subsurface geology includes compressible layers of silt and clay. Subsidence due to groundwater withdrawal generally affects larger areas and presents a more serious hazard than does subsidence due to oil and gas withdrawal. In portions of the San Joaquin Valley, subsidence has exceeded 20 feet over the past 50 years. In the Sacramento Valley, preliminary studies suggest that much smaller levels of subsidence, up to two feet may have occurred. In most of the valley, elevation data are inadequate to determine positively if subsidence has occurred. However, groundwater withdrawal in the Sacramento Valley has been increasing and groundwater levels have declined in some areas. The amount of subsidence caused by groundwater withdrawal depends on several factors, including: (1) the extent of water level decline, (2) the thickness and depth of the water bearing strata tapped, (3) the thickness and compressibility of silt-clay layers within the vertical sections where groundwater withdrawal is occurring, (4) the duration of maintained groundwater level decline, (5) the number and magnitude of water withdrawals in a given area, and (6) the general geology and geologic structure of the groundwater basin. The damaging effects of subsidence include gradient changes in roads, streams, canals, drains, sewers, and dikes. Many such systems are constructed with slight gradients and may be significantly damaged by even small elevation changes. Other effects include damage to water wells resulting from sediment compaction and increased likelihood of flooding of low-lying areas.

Expansive Soils: Expansive soils are prone to change in volume due to the presence of moisture. Soft clay soils have the tendency to increase in volume when moisture is present and shrink when it is dry (shrink/swell). Swelling soils contain high percentages of certain kinds of clay particles that are capable of absorbing large quantities of water, expanding up to 10 percent or more as the clay becomes wet. The force of expansion is capable of exerting pressure on foundations, slabs, and other confining structures.

Soils: The Natural Resources Conservation Service has mapped over 40 individual soil units in the county. The predominant soil series in the county are the Capay, Clear Lake, Conejo, Oswald, and Olashes soils, which account for over 60 percent of the total land area. The remaining soil units each account for smaller percentages the total land area. The Capay and Clear Lake soils are generally present in the western and

southern parts of the county. The Conejo soils occur in the eastern part closer to the incorporated areas of the county. Oswald and Olashes soils are located in the central portion of the county extending north to south, with scattered areas along the southeastern edge of the county. Soil descriptions for the principal soil units in the county are provided below. These descriptions, which were developed by the NRCS, are for native, undisturbed soils and are primarily associated with agricultural suitability. Soil characteristics may vary considerably from the mapped locations and descriptions due to development and other uses. Geotechnical studies are required to identify actual engineering properties of soils at specific locations to determine whether there are specific soil characteristics that could affect foundations, drainage, infrastructure, or other structural features.

3.7.2 Federal Regulatory Setting

Historic Sites Act of 1935: This Act became law on August 21, 1935 (49 Stat. 666; 16 U.S.C. 461-467) and has been amended eight times. This Act establishes as a national policy to preserve for public use historic sites, buildings, and objects, including geologic formations.

National Earthquake Hazards Reduction Program: The National Earthquake Hazards Reduction Program (NEHRP), which was first authorized by Congress in 1977, coordinates the earthquake-related activities of the Federal Government. The goal of NEHRP is to mitigate earthquake losses in the United States through basic and directed research and implementation activities in the fields of earthquake science and engineering. Under NEHRP, FEMA is responsible for developing effective earthquake risk reduction tools and promoting their implementation, as well as supporting the development of disaster-resistant building codes and standards. FEMA's NEHRP activities are led by the FEMA Headquarters (HQ), Federal Insurance and Mitigation Administration, Risk Reduction Division, Building Science Branch, in strong partnership with other FEMA HQ Directorates, and in coordination with the FEMA Regions, the States, the earthquake consortia, and other public and private partners.

3.7.3 State Regulatory Setting

California Alquist-Priolo Earthquake Fault Zoning Act: The Alquist-Priolo Earthquake Fault Zoning Act (originally enacted in 1972 and renamed in 1994) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The statute prohibits the location of mot types of structures intended for human occupancy across the traces of active faults and regulates construction in the corridors along active faults.

California Seismic Hazards Mapping Act: The Seismic Hazards Mapping Act is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Earthquake Fault Zoning Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Uniform Building Code: The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the Uniform Building Code with necessary California amendments. The Uniform Building Code is a widely adopted model building code in the United States published by the International Conference of Building Officials. About one-third of the text within the California Building Code has been tailored for California earthquake conditions.

Paleontological Resources: Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources. CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) Section 15126.4 (a)(1)). California Public Resources Code Section 5097.5 (see above) also applies to paleontological resources.

3.7.4 Impact Assessment/Environmental Consequences:

a) Directly or indirectly create 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.

According to the Yuba City General Plan, no active earthquake faults are known to exist in Sutter County, although active faults in the region could produce ground motion in Yuba City (Dyett & Bhatia, 2004). The closest known fault zone is the Bear Mountain Fault Zone, located approximately 20 miles northeast of Yuba City (California Geological Survey [CGS], 2015). Potentially active faults do exist in the Sutter Buttes, but those faults are considered small and have not exhibited activity in recent history. Because the distance from the City to the closest known active fault zone is large, the potential for exposure of people or structures to substantial adverse effects from fault rupture is low. Considering that the Building Code incorporates construction standards for minimizing earthquake damage to buildings, and the low potential for a significant earthquake activity in the vicinity, the potential for adverse impacts from an earthquake is less than significant.

ii. Strong seismic ground shaking?

In the event of a major regional earthquake, fault rupture or seismic ground shaking could potentially injure people and cause collapse or structural damage to existing and proposed structures. Ground shaking could potentially expose people and property to seismic-related hazards, including localized liquefaction and ground failure. However, all new structures are required to adhere to current California Building Code standards. These standards require adequate design, construction, and maintenance of structures to prevent exposure of people and structures to major geologic hazards. General Plan Implementing Policies 9.2-I-1 through 9.2-I-8 and the building codes reduce the potential impacts to less than significant.

iii. Seismic-related ground failure, including liquefaction?

The proposed Project is not located within a liquefaction zone according to the California Department of Conservation's California Geologic Survey regulatory maps. Regardless, all new structures are required to adhere to current California Building Code standards. These standards require adequate design, construction, and maintenance of structures to prevent exposure of people and structures to major geologic hazards. Therefore, the potential impact from ground failure is less than significant.

iv. Landslides?

According to the Environmental Impact Report prepared for the General Plan, due to the flat topography, erosion, landslides, and mudflows are not considered to be a significant risk in the City limits or within the City's Sphere of Influence.

b) Result in substantial soil erosion or the loss of topsoil?

Development of the site would result in approximately 20.76 acres of ground being disturbed during site grading. Even though the area is relatively flat, during site grading a large storm could result in the loss of topsoil into the City/Sutter County drainage system. However, as part of the grading and construction, the applicant will be required to follow Best Management Practices (BMP's) and provide erosion control measures to minimize soil runoff during the construction process. Therefore, impacts from soil erosion will be less than significant.

c) Be located on a geological 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 the California Building Code creating substantial direct or indirect risks to life or property?

The extreme southwest corner of the Yuba City Sphere of Influence is the only known area with expansive soils. The Project area is not located within that area and therefore will not be impacted by the presence of expansive soils.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

All of the 141 single-family residences will be connected to the City's wastewater collection and treatment system. No new septic systems will be utilized. As such, there will be no new impacts from septic systems.

f) Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature?

Due to prior ground disturbances including land clearing and agricultural uses, it is unlikely that any paleontological resources exist on the site. However, the following mitigation measure shall apply if any paleontological resources are discovered:

3.7.5 Paleontological Mitigation Measure

Paleontological Mitigation Measure 1: This Mitigation Measure shall be placed as a note on the Demolition and Grading Plans. If paleontological resources are found, the construction manager shall halt all activity and immediately contact the Development Services Department @ 530-822-4700.

Mitigation shall be conducted as follows:

1. Identify and evaluate paleontological resources by intense field survey in the vicinity that potential paleontological resource was found, as determined by the paleontologist;
2. Assess effects on identified sites;

3. Consult with the institutional/academic paleontologists conducting research investigations within the geological formations that are slated to be impacted;
4. Obtain comments from the researchers; and
5. Comply with researchers' recommendations to address any significant adverse effects were determined by the City to be feasible.

In considering any suggested mitigation proposed by the consulting paleontologist, the City's Community Development Department staff shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, Specific or General Plan policies and land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project site while mitigation for paleontological resources is carried out.

3.8 Greenhouse Gas Emissions

Table 3.8: Greenhouse Gas Emissions				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?		X		

3.8.1 Federal Regulatory Setting

The United States Environmental Protection Agency (USEPA) Mandatory Reporting Rule (40 CFR Part 98), which became effective December 29, 2009, requires that all facilities that emit more than 25,000 metric tons CO2-equivalent per year beginning in 2010, report their emissions on an annual basis. On May 13, 2010, the USEPA issued a final rule that established an approach to addressing GHG emissions from stationary sources under the Clean Air Act (CAA) permitting programs. The final rule set thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration and title V Operating Permit programs are required for new and existing industrial facilities.

In addition, the Supreme Court decision in Massachusetts v. EPA (Supreme Court Case 05-1120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of greenhouse gases (GHG) under the CAA. On April 17, 2009, the USEPA found that CO2, CH4, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. This finding may result in the USEPA regulating GHG emissions; however, to date the USEPA has not propose regulations based on this finding.

3.8.2 State & Local Regulatory Setting

The City's Resource Efficiency Plan as designed under the premise that the City, and the community it represents, is uniquely capable of addressing emissions associated with sources under the City's jurisdiction and that the City's emission reduction efforts should coordinate with the state strategies of reducing emissions in order to accomplish these reductions in an efficient and cost-effective manner. The City developed this document with the following purposes in mind:

- Local Control: The Yuba City Efficiency Plan allows the City to identify strategies to reduce resource consumption, costs, and GHG emissions in all economic sectors in a way that maintains local control over the issues and fits the character of the community. It also may position the City for funding to implement programs tied to climate goals.
- Energy and Resource Efficiency: The Efficiency Plan identifies opportunities for the City to increase energy efficiency and lower GHG emissions in a manner that is most feasible within the community. Reducing energy consumption through increasing the efficiency of energy technologies, reducing energy use, and using renewable sources of energy are effective ways to reduce GHG emissions. Energy efficiency also provides opportunities for cost-savings.
- Improved Public Health: Many of the GHG reduction strategies identified in the Efficiency Plan also have local public health benefits. Benefits include local air quality improvements; creating a more active community through implementing resource-efficient living practices; and reducing health risks, such as heat stroke, that would be otherwise elevated by climate change impacts such as increased extreme heat days.

Demonstrating Consistency with State GHG Reduction Goals—A GHG reduction plan may be used as GHG mitigation in a General Plan to demonstrate that the City is aligned with State goals for reducing GHG emissions to a level considered less than cumulatively considerable.

3.8.3 Impact Assessment/Environmental Consequences:

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?

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, similar to a greenhouse. The accumulation of GHGs has been implicated as a driving force for Global Climate Change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the climate caused by natural fluctuations and the impact of human activities that alter the composition of the global atmosphere. Both natural processes and human activities emit GHGs. Global Climate Change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, the vast majority of the scientific community now agrees that there is a direct link between increased emission of GHGs and long-term global temperature. Potential global warming impacts in California may include, but are not limited to, loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise

in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA).

The construction of the 141 single-family residences would generate GHG emissions from construction equipment. Once the subdivision is developed, vehicle traffic generated by auto use from the new residences will also contribute GHG gases. Due to the small size of the Project, it is not expected to create significant greenhouse gas emissions. However, on a cumulative scale, possible reasonable reductions could be applied to the Project in order to further minimize those impacts. Specifically addressing this proposal, the City's Resource Efficiency Plan addresses greenhouse gas concerns and provides a description of greenhouse gas reduction measures. A mitigation measure is included that requires the Project to incorporate the relevant greenhouse gas reduction measures. With this mitigation the impacts from greenhouse gases will be less than significant.

3.8.4 Greenhouse Mitigation Measure

Greenhouse Gas Mitigation Measure 1: The site grading process shall comply with the GHG Reduction Measures provided in the adopted Yuba City Resource Efficiency Plan.

3.9 Hazards and Hazardous Materials

Table 3.9: Hazards and Hazardous Materials				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
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 create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.			X	

3.9.1 Federal Regulatory Setting

U.S. Environmental Protection Agency (USEPA): The USEPA was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard setting, and enforcement activities to ensure environmental protection. USEPA's mission is to protect human health and to safeguard the natural environment — air, water, and land — upon which life depends. USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act: The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery

Act of 1976 (RCRA) established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law (U.S. Code Title 42, Chapter 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulation [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Clean Water Act/SPCC Rule: The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. As part of the Clean Water Act, the U.S. EPA oversees and enforces the Oil Pollution Prevention regulation contained in Title 40 of the CFR, Part 112 (Title 40 CFR, Part 112) which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend and implement Spill Prevention, Control, and

Countermeasure (SPCC) Plans: A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "Navigable Waters" of the United States. Other federal regulations overseen by the U.S. EPA relevant to hazardous materials and environmental contamination include Title 40, CFR, Chapter 1, Subchapter D – Water Programs and Subchapter I – Solid Wastes. Title 40, CFR, Chapter 1, Subchapter D, Parts 116 and 117 designate hazardous substances under the Federal Water Pollution Control Act: Title 40, CFR, Part 116 sets forth a determination of the reportable quantity for each substance that is designated as hazardous. Title 40, CFR, Part 117 applies to quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

The NFPA 70®: National Electrical Code® is adopted in all 50 states. Any electrical work associated with the Proposed Project is required to comply with the standards set forth in this code. Several federal regulations govern hazards as they are related to transportation issues. They include:

Title 49, CFR, Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.

49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

3.9.2 State Regulatory Setting

California Environmental Protection Agency (CalEPA): The California Environmental Protection Agency (CalEPA) was created in 1991 by Governor's Executive Order. The six boards, departments, and office were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources. The mission of CalEPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality under Title 22 of the California Code of Regulations (CCR).

Department of Toxic Substances Control (DTSC): DTSC is a department of Cal/EPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC listed hazardous waste facilities and sites, DHS lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Unified Program: The Unified Program (codified CCR Title 27, Division 1, Subdivision 4, Chapter 1, Sections 15100- 15620) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency response programs:

- Hazardous Waste Generator (HWG) program and Hazardous Waste On-site Treatment activities;
- Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements;
- Underground Storage Tank (UST) program;
- Hazardous Materials Release Response Plans and Inventory (HMRRP) program;
- California Accidental Release Prevention (CalARP) program;
- Hazardous Materials Management Plans and Hazardous Materials Inventory Statement (HMMP/HMIS) requirements.

The Secretary of CalEPA is directly responsible for coordinating the administration of the Unified Program. The Unified Program requires all counties to apply to the CalEPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements in the county. Most CUPAs have been established as a function of a local environmental health or fire department.

Hazardous Waste Management Program: The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement, and Unified Program activities in accordance with California Health and Safety Code Section 25135 et seq. The main focus of HWMP is to ensure the safe storage, treatment, transportation, and disposal of hazardous wastes.

State Water Resources Control Board (SWRCB): The State Water Resources Control Board (SWRCB) was created by the California legislature in 1967. The mission of SWRCB is to ensure the highest reasonable

quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables SWRCB to provide comprehensive protection for California's waters.

California Department of Industrial Relations – Division of Occupational Safety and Health (Cal OSHA): In California, every employer has a legal obligation to provide and maintain a safe and healthful workplace for employees, according to the California Occupational Safety and Health Act of 1973 (per Title 8 of the CCR). The Division of Occupational Safety and Health (Cal/OSHA) program is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. Cal/OSHA regulations are administered through Title 8 of the CCR. The regulations require all manufacturers or importers to assess the hazards of substances that they produce or import and all employers to provide information to their employees about the hazardous substances to which they may be exposed.

California Fire Code: The California Fire Code is Part 9 of the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. The California Fire Code incorporates the Uniform Fire Code with necessary California amendments. This Code prescribes regulations consistent with nationally recognized good practice for the safeguarding to a reasonable degree of life and property from the hazards of fire explosion, and dangerous conditions arising from the storage, handling and use of hazardous materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises and provisions to assist emergency response personnel.

3.9.3 Local Regulatory Setting

Sutter County Airport Comprehensive Land Use Plan: The SCACLUP was adopted in April 1994 by the Sacramento Area Council of Governments (SACOG). SACOG is the designated Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo, and Yuba Counties under the provisions of the California Public Utilities Code, Chapter 4, Article 3.5, Section 21670.1 Airport Land Use Commission Law. The purpose of the ALUC law is to (1) protect public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive levels of noise, and (2) Prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utilities of these airports into the future.

3.9.4 Impact Assessment/Environmental Consequences:

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?

The hazardous materials associated with the development of the subdivision followed by construction of the residences will be those materials associated with grading and construction equipment, which typically includes solvents, oil, and fuel. Provided that these materials are legally and properly used and stored, the proposed Project will not create a significant hazard to the public or the environment. On an ongoing basis the only anticipated hazardous waste would be household hazardous waste. Assuming proper and legal disposal of those wastes there should not be a significant impact from hazardous materials.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

River Valley High School is located near this site. The nearest point of the high school campus is just under 100 feet. The shortest distance from the construction site to a school building is approximately 700 feet. The development of the subdivision followed by construction of the residences will be those materials associated with grading and construction equipment, which typically includes solvents, oil, and fuel. On an ongoing basis the only anticipated hazardous waste would be household hazardous waste. The construction of the subdivision and its 141 residences would generate construction equipment emissions that could impact the school. Considering that time for operating equipment on the Project site is limited, and assuming proper use of the fuels, solvents, and oil for the grading and paving equipment, the impacts to the school students would be less than significant. Construction related emissions, discussed under Sec. 3.3, would also be less than significant. Similarly, for household hazardous waste generated by the 141 new residences, assuming proper and legal use and disposal, household hazardous waste will have a less than a significant impact on the school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section and, as a result, would create a significant hazard to the public or the environment?

The property is not on any listings of sites that are contaminated by hazardous wastes. As a result, the potential for a significant impact from any pre-existing hazardous materials is less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

The Project is not located within the Sutter County Airport Comprehensive Land Use Plan, nor is it within two miles of a public use airport.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The Yuba City Fire Department and Police Department serve this area. Neither agency has expressed concern over impacts the Project may have on any emergency response plans. Accordingly, the impacts on emergency response or emergency evacuations plans will be less than significant.

g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The Project site is located within the Yuba City urban area. The urban area is surrounded by miles of irrigated agricultural lands, which are not typically subject to wildland fires. There are no wildlands on the site or in the vicinity. Accordingly, the potential impacts from wildland fires are less than significant.

3.10 Hydrology and Water Quality

Table 3.10: Hydrology and Water Quality				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impeded sustainable groundwater management of the basin?			X	
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?			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
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			X	
iv)impede or redirect flood flows?				X
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

3.10.1 Federal Regulatory Setting

Clean Water Act: The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Federal Emergency Management Agency (FEMA) Flood Zones: The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed

Flood Insurance Rate Maps (FIRM) that can be used for planning purposes. Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).

3.10.2 State Regulatory Setting

State Water Resources Control Board: The State Water Resources Control Board (SWRCB) is the agency with jurisdiction over water quality issues in the State of California. The WRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter- Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The Project site is located within the Central Valley Regional Water Quality Control board.

Central Valley Regional Water Quality Control Board (CVRWQCB): administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). Additionally, CVRWQCB is responsible for issuing Waste Discharge Requirements Orders under California Water Code Section 13260, Article 4, Waste Discharge Requirements.

State Department of Water Resources: California Water Code (Sections 10004 et seq.) requires that the State Department of Water Resources update the State Water Plan every five years. The 2013 update is the most current review and included (but is not limited to) the following conclusions:

- The total number of wells completed in California between 1977 and 2010 is approximately 432,469 and ranges from a high of 108,346 wells for the Sacramento River Hydrologic Region to a low of 4,069 wells for the North Lahontan Hydrologic Region.
- Based on the June 2014 California Statewide Groundwater Elevation Monitoring (CASGEM) basin prioritization for California's 515 groundwater basins, 43 basins are identified as high priority, 84 basins as medium priority, 27 basins as low priority, and the remaining 361 basins as very low priority.
- The 127 basins designated as high or medium priority account for 96 percent of the average annual statewide groundwater use and 88 percent of the 2010 population overlying the groundwater basin area.
- Depth-to-groundwater contours were developed for the unconfined aquifer system in the Central Valley. In the Sacramento Valley, the spring 2010 groundwater depths range from less than 10 feet below ground surface (bgs) to approximately 50 feet bgs, with local areas showing maximum depths of as much as 160 feet bgs.

- The most prevalent groundwater contaminants affecting California's community drinking water wells are arsenic, nitrate, gross alpha activity, and perchlorate.

California Government Code 65302 (d): The General Plan must contain a Conservation Element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, river and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. That portion of the conservation element including waters shall be developed in coordination with any County-wide water agency and with all district and city agencies which have developed, served, controlled, or conserved water for any purpose for the County or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5 if that information has been submitted by the water agency to the city or County. The conservation element may also cover:

- The reclamation of land and waters.
- Prevention and control of the pollution of streams and other waters.
- Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
- Prevention, control, and correction of the erosion of soils, beaches, and shores.
- Protection of watersheds.
- The location, quantity, and quality of the rock, sand, and gravel resources.
- Flood control.

Sustainable Groundwater Management Act: On September 16, 2014, Governor Edmund G. Brown Jr. signed historic legislation to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The three bills, SB 1168 (Pavley) SB 1319 (Pavley) and AB 1739 (Dickinson) together makeup the Sustainable Groundwater Management Act. The Sustainable Groundwater Management Act comprehensively reforms groundwater management in California. The intent of the Act is to place management at the local level, although the state may intervene to manage basins when local agencies fail to take appropriate responsibility. The Act provides authority for local agency management of groundwater and requires creation of groundwater sustainability agencies and implementation of plans to achieve groundwater sustainability within basins of high and medium priority.

3.10.3 Impact Assessment/Environmental Consequences:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Most of the City's public water supply comes from the Feather River. The water is pumped from the river to the Water Treatment Plant located in northern Yuba City. The plant also sometimes utilizes a groundwater well to supplement to surface water supplies due to prior drought conditions. Since the residences will only receive water through the City system, it is unlikely that the Project could impact the water quality in the City system.

All of the wastewater generated by the Project will flow into the City wastewater treatment facility which is in compliance with all state water discharge standards. Residential wastewater is not expected to generate any unique type of waste that would cause the system to become out of compliance with state standards.

All storm water runoff associated with the Project will drain into the Live Oak Canal and ultimately into the Feather River. The quality of the stormwater runoff is addressed through General Plan Implementing Policies 8.5-I-1 through 8.5-I-10 which require a wide range of developer and City actions involving coordination with the State Regional Water Quality Control Board, protecting waterways, and following Yuba City's adopted Best Management Practices for new construction. With the level of oversight on the City's water supply, and enforcement of Best Management Practices at construction sites, the impacts from the 141 single-family residences on the City's water and waste-water systems or storm water drainage system will be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impeded sustainable groundwater management of the basin?

All of the residences will be connected to the City's water system. City water will also be provided for common landscaping. While consumer consumption of City water will increase with the Project, very little groundwater will be utilized as the City primarily utilizes surface water supplies in its system. As a result, the impacts on groundwater will be less than significant.

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?

i) As noted above, all new construction must involve use of Best Management Practices. Assuming all required standards are met, the erosion and siltation impacts from additional storm water drainage from the site are expected to be less than significant.

ii) There will be increased stormwater drainage caused by new impermeable surfaces within the Project area, which will ultimately drain into the Feather River. The Project will be required to construct the local collection facilities and pay the appropriate fees to the Sutter County Water Agency for its fair share of improvements and expansion to the existing drainage system that it will be connected too. The impact from flooding will be less than significant.

iii) See ii, above.

Iv) According to the Federal Emergency Management Agency this portion of the City is outside of the 100-year flood plain. This is due to the existing levee system that contains seasonally high-water flows from the nearby Feather River from flooding areas outside of the levee system. Additional construction within the City that is outside of the levee system does not impact the levee system and therefore does not increase, impede, or otherwise have any effect on the highwater flows within the levee system. Therefore, there is no impact on the high-water flows within the Feather River levee system.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

According to the Federal Emergency Management Agency, this portion of the City is outside of the 100-year flood plain. The City is not close to the ocean or any big lakes so a seiche is unlikely to happen in or near the City. The City is located inland from the Pacific Ocean, so people or structures in the City would not be exposed to inundation by tsunami. Mudflows and landslides are unlikely to happen due to the relatively flat topography within the Project area. Thus, it is unlikely that the Project site would be subject to inundation by a seiche, tsunami, or mudflow or landslide. Therefore, the potential for significant impacts from any of these types of events is less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Regarding water quality, as noted in Part a) above, all new construction is required to utilize Best Management Practices for stormwater drainage. Regarding impacts on a groundwater management plan, the City primarily utilizes surface water from the Feather River for its water supply, so any impact on groundwater would be less than significant. As such the impacts on water quality and groundwater management from the 141 new single-family residences will be less than significant.

3.11 Land Use and Planning

Table 3:11: Land Use and Planning					
Would the project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Physically divide an established community?				X
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?				X

3.11.1 Environmental Setting/Affected Environment

The level 20.76 acres are within the Yuba City urbanized area. The area was comprehensively planned in 2004 as part of the Yuba City General Plan. As an implementation of the General Plan, City transportation, water, wastewater, and drainage plans have also comprehensively planned for these services to be provided in this area. The site is in an area that is transitioning between agricultural uses and planned urban development. There are remaining orchards on three sides of the Project but a modern high school immediately northeast of the site and there is a suburban subdivision just south of the site, beyond the orchard.

3.11.2 Federal Regulatory Setting

There are no federal regulations pertaining to land use and planning relevant to the proposed Project.

3.11.3 Local Regulatory Setting

Yuba City General Plan, Land Use Element: The Land Use Element of the General Plan establishes guidance for the ultimate pattern of growth in the City's Sphere of Influence. It provides direction regarding how lands are to be used, where growth will occur, the density/intensity and physical form of that growth, and key design considerations.

3.11.4 Impact Assessment/Environmental Consequences:

a) Physically divide an established community?

The proposed single-family residential subdivision will not physically divide an established community. From the broader perspective, the proposal is within the El Margarita area which has been planned for many years in the General Plan for conversion from agricultural/rural residential uses to urbanization. From a geographic perspective, the area is south of S.R. 20, having little relationship to the community on the north side of SR 20. East of the site, across El Margarita Road, is primarily developed with or planned for non-residential uses, which, from a community standpoint, this subdivision would not impact. South and west of the site there is existing and proposed residential development for which this Project would be compatible. As such, the development of the property will expand, but not divide, the local residential community. Therefore the impacts of this proposal on dividing a community will be less than significant.

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?

The revision of the General Plan and Zoning regulations from anticipating medium density residential uses and office type uses to providing small-lot single-family residential uses is in itself a change in regulations. Comparing this proposed TSM/GPA/RZ to existing policies and programs, this environmental study has not identified any land use plans or policies that will be violated by this proposal. Since the proposed change in land use designations in itself is not in conflict with any land use policies, the impacts from any conflicts with environmental plans, policies, and regulations will be less than significant.

3.12 Mineral Resources

Table 3-12: Mineral Resources				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				X
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?				X

3.12.1 Federal Regulatory Setting

There are no federal regulations pertaining to mineral resources relevant to the proposed Project.

3.12.2 State Regulatory Setting

California Surface Mining and Reclamation Act of 1975: Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710 et seq., insures a continuing supply of mineral resources for the State. The act also creates surface mining and reclamation policy to assure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;
- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California.

The State Geologist, in accordance with the State Board's Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones (MRZ) as designated below:

- MRZ-1. Areas where available geologic information indicates that there is minimal likelihood of significant resources.
- MRZ-2. Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
- MRZ-3. Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.

- MRZ-4. Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

3.12.3 Impact Assessment/Environmental Consequences:

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?

The property contains no known mineral resources and there is little opportunity for mineral resource extraction. The Yuba City General Plan does not recognize any mineral resource zone within the City limits, and no mineral extraction facilities currently exist within the City. Additionally, the site has nearby residential uses, which generally is considered incompatible with mineral extraction facilities. As such the Project will not have an impact on mineral resources.

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?

See a) above.

3.13 Noise

Table 3.13: Noise

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
b) Generation of excessive ground borne vibration or ground borne noise levels?			X	
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 two 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?				X

3.13.1 Environmental Setting/Affected Environment for Noise

Noise can be generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with 0 dB

corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

Noise exposure is a measure of noise over a period of time. Noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual receptor. These successive additions of sound to the community noise environment vary the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts.

3.13.2 Environmental Setting/Affected Environment for Groundbourne Vibration

Vibration is the periodic oscillation of a medium or object. Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground borne vibrations may be described by amplitude and frequency. Vibration amplitudes are usually expressed in peak particle velocity (PPV), or root mean squared (RMS), as in RMS vibration velocity. The PPV and RMS (VbA) vibration velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal and is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. As it takes some time for the human body to respond to vibration signals, it is more prudent to use vibration velocity when measuring human response. The typical background vibration velocity level in residential areas is approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels.

Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day.

3.13.3 Federal Regulatory Setting

Federal Vibration Policies: The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 90 VdB without experiencing structural damage.97 The FTA has identified the human annoyance response to vibration levels as 75 VdB.

3.13.4 State Regulatory Setting

California Noise Control Act: The California Noise Control Act was enacted in 1973 (Health and Safety Code §46010 et seq.), and states that the Office of Noise Control (ONC) should provide assistance to local communities in developing local noise control programs. It also indicates that ONC staff would work with the Department of Resources Office of Planning and Research (OPR) to provide guidance for the preparation of the required noise elements in city and county General Plans, pursuant to Government Code § 65302(f). California Government Code § 65302(f) requires city and county general plans to include a noise element. The purpose of a noise element is to guide future development to enhance future land use compatibility.

Title 24 – Sound Transmission Control: Title 24 of the California Code of Regulations (CCR) codifies Sound Transmission Control requirements, which establishes uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings. Specifically, Title 24 states that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings Title 24, Part 2 requires an acoustical report that demonstrates the achievements of the required 45 dBA CNEL. Dwellings are designed so that interior noise levels will meet this standard for at least ten years from the time of building permit application.

3.13.5 Local Regulatory Setting

The **City of Yuba City General Plan** presents the vision for the future of Yuba City, outlining several guiding policies and policies relevant to noise.

The following goals and policies from the City of Yuba City General Plan[1] are relevant to noise.

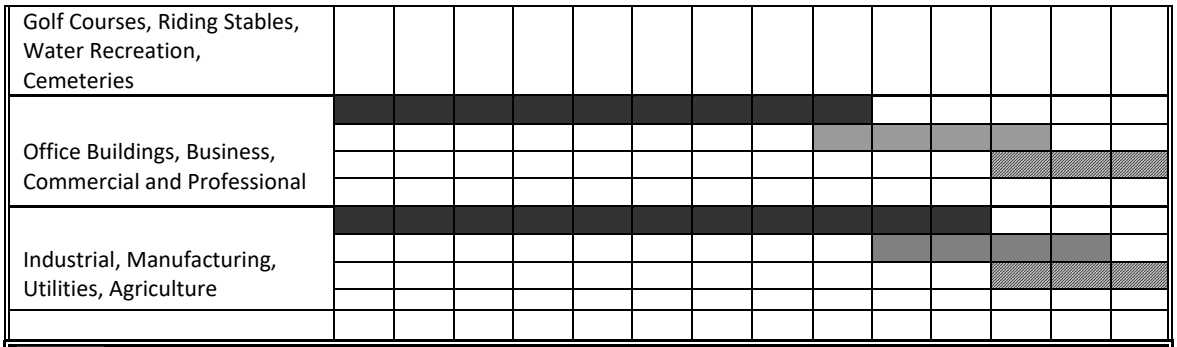
Guiding Policies

- 9.1-G-1 Strive to achieve an acceptable noise environment for the present and future residences of Yuba City.
- 9.1-G-2 Incorporate noise considerations into land use planning decisions and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.
- Implementing Policies
- 9.1-I-1 Require a noise study and mitigation for all projects that have noise exposure greater than “normally acceptable” levels. Noise mitigation measures include, but are not limited to, the following actions:
- Screen and control noise sources, such as parking and loading facilities, outdoor activities, and mechanical equipment.

- Increase setbacks for noise sources from adjacent dwellings,
- Retain fences, walls, and landscaping that serve as noise buffers,
- Use soundproofing materials and double-glazed windows, and
- Control hours of operation, including deliveries and trash pickup, to minimize noise impacts.
- 9.1-I-3 In making a determination of impact under the California Environmental Quality Act (CEQA), consider an increase of four or more dBA to be "significant" if the resulting noise level would exceed that described as normally acceptable for the affected land use in Figure 5.
- 9.1-I-4 Protect especially sensitive uses, including schools, hospitals, and senior care facilities, from excessive noise, by enforcing “normally acceptable” noise level standards for these uses.
- 9.1-I-5 Discourage the use of sound walls. As a last resort, construct sound walls along highways and arterials when compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility.
- 9.1-I-6 Require new noise sources to use best available control technology (BACT) to minimize noise from all sources.
- 9.1-I-7 Minimize vehicular and stationary noise sources and noise emanating from temporary activities, such as construction.

Noise Exposure

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - Ldn or CNEL (dBA)													
	50		55		60		65		70		75		80	
Residential – Low Density Single Family, Duplex, Mobile Home														
Residential – Multi-Family														
Transient Lodging – Motel/Hotel														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														



	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: State of California, Governor's Office of Planning and Research, 2003. General Plan Guidelines.

City of Yuba City Municipal Code: Title 4, Chapter 17, Section 4-17.10(e) of the Yuba City Municipal Code prohibits the operation of noise-generating construction equipment before 6:00 a.m. or after 9:00 p.m. daily, except Sunday and State or federal holidays when the prohibited time is before 8:00 a.m. and after 9:00 p.m.

3.13.6 Impact Assessment/Environmental Consequences:

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 established in the local general plan or noise ordinance, or applicable standards of other agencies?

A temporary increase in noise will occur during construction of the subdivision and home construction that would follow, all of which will primarily occur during daylight hours, Monday through Saturday. The noise from the construction activities would contribute to the noise environment in the immediate vicinity. This could have an impact on existing nearby uses. Activities involved in construction could generate maximum noise levels, as indicated in Table 4, ranging from 79 to 91 dBA at a distance of 50 feet, without feasible noise control (e.g., mufflers) and ranging from 75 to 80 dBA at a distance of 50 feet, with feasible noise control.

Table 4: Noise Levels of Typical Construction Equipment		
Type of Equipment [1]	dBA at 50 ft.	
	Without Feasible Noise Control [2]	With Feasible Noise Control
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front End Loader	79	75
Backhoe	85	75
Grader	85	75
Truck	91	75
[1] US Environmental Protection Agency. "Noise from Construction Equipment and Operations, Building Equipment and Home Appliances." Figure IV.H-4. 1971. *[2] Feasible noise control includes the use of intake mufflers, exhaust mufflers and engine shrouds operating in accordance with manufacturers specifications*		

Of concern is the nearby River Valley High School. But as the nearest school building that could be impacted is approximately 700 feet away, the noise reduction due to the distance would make the noise impact less than significant.

There are few nearby residences that could be impacted, with only two at approximately 50 feet from the project site. For those residences, due to the limited duration of the construction activities, and, assuming City hours of permitted construction activity standards are met, the construction will occur during the less sensitive daylight hours. As such the noise effects from this activity are expected to be less than significant.

b) Generation of excessive ground borne vibration or ground borne noise levels?

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Table 5 describes the typical construction equipment vibration levels.

Table 5 : Typical Construction Vibration Levels	
Equipment [1]	VdB at 25 ft2
Small Bulldozer	58
Vibratory Roller	94
Jackhammer	79
Loaded Trucks	86
[1] US Environmental Protection Agency. "Noise from Construction Equipment and Operations, Building Equipment and Home Appliances." Figure IV.H-4. 1971.	

Vibration levels of construction equipment in Table 5 are at a distance of 25 feet from the equipment. As noted above, construction activities are limited to daylight hours. Infrequent construction-related vibrations would be short-term and temporary, and operation of heavy-duty construction equipment would be intermittent throughout the day during construction. Therefore, with the short duration of grading activities associated with the Project, the approximate reduction of 6 VdB for every doubling of

distance from the source, and consideration of the distance to the nearest existing residences, the temporary impact to any uses in the vicinity of the Project would be less than significant.

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 two 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?

The Project is not within an airport land use plan. There are no public or private airports or airfields located in this vicinity. Therefore, this impact is not applicable to the Project.

3.14 Population and Housing

Table 3-14: Population and Housing				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

3.14.1 Environmental Setting/Affected Environment

The level 20.76 acres are within the Yuba City urbanized area. The Yuba City General Plan has comprehensively planned this vicinity for urbanization for years ago. As an implementation of the General Plan, City transportation, water, wastewater, and drainage plans have also comprehensively planned for these services to be provided in this area. The growth of this area is considered to have been comprehensively planned.

There will be one residence removed as part of this Project.

3.14.2 Federal Regulatory Setting

There are no federal regulations, plans, programs, or guidelines associated with population or housing that are applicable to the proposed Project.

3.14.3 State Regulatory Setting

California law (Government Code Section 65580, et seq.) requires cities and counties to include a housing element as a part of their general plan to address housing conditions and needs in the community. Housing elements are prepared approximately every eight years, following timetables set forth in the law. The housing element must identify and analyze existing and projected housing needs and "make adequate

provision for the existing and projected needs of all economic segments of the community," among other requirements. The City had certified by the state its current 2021-29 Housing Element in 2022.

3.14.4 Regional Regulatory Setting

State law mandates that all cities and counties offer a portion of housing to accommodate the increasing needs of regional population growth. The statewide housing demand is determined by the California Department of Housing and Community Development (HCD), while local governments and councils of governments decide and manage their specific regional and jurisdictional housing needs and develop a regional housing needs assessment (RHNA).

In the greater Sacramento region, which includes the City of Yuba City, SACOG has the responsibility of developing and approving an RHNA and a Regional Housing Needs Plan (RHNP) every eight years (Government Code, Section 65580 et seq.). This document has a central role of distributing the allocation of housing for every county and city in the SACOG region. Housing needs are assessed for very low income, low income, moderate income, and above moderate households.

As described above, SACOG is the association of local governments that includes Yuba City, along with other jurisdictions comprising the six counties in the greater Sacramento region. In addition to preparing the Metropolitan Transportation Plan and Sustainable Communities Strategy for the region, SACOG approves the distribution of affordable housing in the region through its RHNP. SACOG also assists in planning for transit, bicycle networks, clean air and serves as the Airport Land Use Commission for the region.

3.14.5 Impact Assessment/Environmental Consequences:

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)?

City services were previously planned and extended to this area, although the local road system needs further improvements before significant more growth can occur. Any future growth in this area, including this Project, will be served by that infrastructure. The General Plan, which describes the larger overall land use pattern for the City, is the primary City planning document utilized to plan this area as well as the rest of the City. Although there is a GPA proposed as part of this Project, the analysis prepared for this report determined the Project is consistent with all other portions of the General Plan. As all projects must be consistent with the General Plan, unplanned growth resulting from this Project will not occur. As a result, the potential impacts from unplanned population growth are less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

One single-family residence will be removed as part of this subdivision. This loss will be offset by the construction of 141 new residences. This increase of 141 new residences more than offsets the loss of the residence so the impacts from the displacement that may occur is less than significant.

3.15 Public Services

Table 3.15: Public Services				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government 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?			X	
ii) Police protection?			X	
iii) Schools?			X	
iv) Parks?			X	
v) Other public facilities?			X	

3.15.1 Environmental Setting/Affected Environment

Law enforcement for the proposed 141 new single-family residences will be provided by the Yuba City Police Department. Fire protection is provided by the Yuba City Fire Department. Nearby parks and other urban services that may be utilized by new residents, including streets, water, sewer stormwater drainage will also be provided by Yuba City. The nearby Tierra Buena School and River Valley High School are part of the Yuba City Unified School District.

3.15.2 Federal Regulatory Setting

National Fire Protection Association: The National Fire Protection Association (NFPA) is an international nonprofit organization that provides consensus codes and standards, research, training, and education on fire prevention and public safety. The NFPA develops, publishes, and disseminates more than 300 such codes and standards intended to minimize the possibility and effects of fire and other risks. The NFPA publishes the NFPA 1, Uniform Fire Code, which provides requirements to establish a reasonable level of fire safety and property protection in new and existing buildings.

3.15.3 State Regulatory Setting

California Fire Code and Building Code: The 2013 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes

requirements intended to provide safety and assistance to fire fighters and emergency responders during emergency operations. The provision of the Fire Code includes regulations regarding fire-resistance rated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, fire safety during construction and demolition, and wildland urban interface areas.

California Health and Safety Code (HSC): State fire regulations are set forth in Sections 13000 et seq. of the California HSC, which includes regulations for building standards (as set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, childcare facility standards, and fire suppression training.

California Master Mutual Aid Agreement: The California Master Mutual Aid Agreement is a framework agreement between the State of California and local governments for aid and assistance by the interchange of services, facilities, and equipment, including but not limited to fire, police, medical and health, communication, and transportation services and facilities to cope with the problems of emergency rescue, relief, evacuation, rehabilitation, and reconstruction.

3.15.4 Impact Assessment/Environmental Consequences:

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 government 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:

Fire Protection: The Fire Department reviewed the proposal and did not express concerns. Since new development pays development impact fees intended to offset the cost of additional fire facilities and equipment costs resulting from this growth, the impacts on fire services will be less than significant.

Police Protection: The Police Department reviewed the proposal and did not express concerns. Since new development pays impact fees that intended to offset the cost of additional police facilities and equipment resulting from this growth, the impacts on police services will be less than significant.

Schools: New residential development must pay the Yuba City Unified School District adopted school impact fees that are intended to satisfy the new resident's fair share of expanded or new educational facilities needed to accommodate this new growth. Therefore, the impact on schools will be less than significant.

Parks: The City charges a park impact fee for each new residence. Additionally, as part of the development agreement for this project, an additional $3,200 will be contributed for each new residence. The fees are utilized to purchase parkland and construct and equip new parks offsetting the impacts associated with urban growth, as proposed by this Project. Therefore, the impact on parks from this Project will be less than significant.

Other Public Facilities: The Project will be connected to City water and wastewater systems. Each new residential connection to those systems must pay connection fees that are utilized for expansion of the respective treatment plants. The City also collects impact fees for County services that are provided to the new residences, such as the library system and justice system.

Accordingly, the Project will have a less than significant impact with regard to the provision of public services.

3.16 Recreation

Table 3-16: Recreation				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?			X	
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?			X	

3.16.1 Environmental Setting/Affected Environment

Yuba City has 23 City-owned parks and recreational areas, managed by the City's Parks and Recreation Department. This consists of five community parks, 15 neighborhood parks, and three passive or mini parks.

3.16.2 Federal Regulatory Setting

There are no federal regulations regarding parks and open space that are applicable to the proposed Project.

3.16.3 State Regulatory Setting

State Public Park Preservation Act: The primary instrument for protecting and preserving parkland is the Public Park Preservation Act of 1971. Under the PRC section 5400-5409, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

Quimby Act: California Government Code Section 66477, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely for park and recreation purposes. The required dedication and/or fee are based upon the residential density and housing type, land cost, and other factors. Land dedicated and fees collected pursuant to the Quimby Act may be used for developing new or rehabilitating existing park or recreational facilities.

3.16.4 Local Regulatory Setting

The Yuba City General Plan and the City's Parks Master Plan provide a goal of providing 5 acres of public parkland per 1,000 residents, while it also requires 1 acre of Neighborhood Park for every 1,000 residents. The City's development impact fee program collects fees for new development which is allocated for the acquisition and development of open space in the City.

3.16.5 Impact Assessment/Environmental Consequences:

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?

The residents of the proposed 141 single-family residences will have access to the City's park system, thus increasing park usage. The City, however, charges a park impact fee for each new residence, to be utilized to purchase parkland and construct new parks in proportion to growth of the community. Additionally, as part of the development agreement for this Project, an additional $3,200 will be contributed for each new residence. The fees are utilized to purchase parkland and construct and equip new parks offsetting the impacts associated with urban growth, as proposed by this subdivision. This fee is intended to offset the impact on parks from population increases as it provides for expansion of the City's park system. Therefore, the impact on parks from this Project will 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?

There are no recreational facilities proposed as part of this Project. The new residents will generate an incremental increase in usage of nearby City parks, expanded or new parks will be needed. Because the location of new or expanded parks is not known at this time, the environmental impacts of expanded or new parks can only be determined by the environmental review when the location of new or expanded parkland is determined.

3.17 Transportation/Traffic

Table 4-17: Transportation/Traffic				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?		X		
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

3.17.1 Federal Regulatory Setting

Federal Highway Administration: FHWA is the agency of the U.S. Department of Transportation (DOT) responsible for the Federally funded roadway system, including the interstate highway network and portions of the primary State highway network. FHWA funding is provided through the Safe, Accountable, Flexible, Efficiency Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA- LU can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

Several federal regulations govern transportation issues. They include:

- Title 49, CFR, Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- Title 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.

3.17.2. State Regulatory Setting

The measurement of the impacts of a project's traffic is set by the CEQA Guidelines. Section 15064.3 of the Guidelines states that vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts. VMT is a metric which refers to the amount of distance of automobile traffic that is generated by a project. Per the Guidelines "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact." "Projects that decrease vehicle miles traveled compared to existing conditions should be presumed to have a less than significant environmental impact."

The CEQA Guidelines also states that the lead agency (Yuba City) may "choose the most appropriate methodology to evaluate a project's vehicle miles traveled …". As this is a new form of calculating significant traffic events, the City has not yet determined its own methodology to calculate levels of significance for VMT. Until that methodology is determined, for purposes of this initial study the

information provided by the Sacramento Council of Governments (SACOG) and the CA Office of Planning and Research is utilized. A review of these studies indicates several factors that may be utilized for determining levels of significance. One is that if the project will generate less than 110 vehicle trips per day, it is assumed that with the small size of the project, the impact is less than significant. A second criteria is that for a project, on a per capita or per employee basis, the VMT will be at least 15 percent below that of existing development is a reasonable threshold for determining significance.

As this is a new methodology, future projects may utilize different criterion as they become available.

3.17.3. Impact Assessment/Environmental Consequences:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

The information was referenced from the traffic study that was prepared for the proposed 141 single-family lots (the study assumes 139 units to which the difference is not considered significant by City staff) prepared by Flecker and Associates - July 8, 2025 (Traffic Study). A copy is attached as Appendix B.

The Project will be accessed from El Margarita Road, which is designated in the General Plan Circulation Element as a two-lane minor arterial. The Traffic Study assumes that each residence will generate on average 9.43 vehicle trips per day (a trip is considered a single direction). The Project will generate an estimated 1311 vehicle trips per day onto El Margarita Road. The Traffic Study disaggregates those trips by assuming that 25% of new traffic will travel east, 35% for southbound trips, 25% will travel north, and 15% west.

As part of the proposal the applicant will provide full improvements to its half of El Margarita Road, which includes a continuous center turn lane, a 12-foot travel lane, bike lane, curb and gutter, a six-foot-wide planter strip, a 6-foot-wide sidewalk, a 12-foot wide P.U.E./landscape strip, and a masonry wall. The subdivision provides for three new local streets to connect to El Margarita Road. No individual driveways will be accessed onto El Margarita Road.

For purposes of this review, a significant impact would be whether the Project is consistent with the policies of the General Plan Circulation Element. Yuba City General Plan Policy 5.2-1-12 (Traffic Level of Service or LOS) requires that most City streets that are identified in the General Plan as a collector or larger must operate at LOS D or better. This policy was reviewed as to whether the Project is consistent with that policy in that the Project would not degrade any of El Margrita Road or Harter Parkway to an LOS of E or F. The Traffic Study concludes that under the "Existing Plus Project" scenario build-out of the subdivision will adversely impact both the El Margarita Road/SR 20 intersection and the El Margarita Road/Spirit Way intersections during the a.m. peak hour by lowering the LOS to a level E or F. This would be inconsistent with the General Plan policy, which would be considered a significant impact unless mitigated. The Traffic Study also concludes that under "Existing Plus Project" scenario the queuing distances for several of the impacted intersection's left turn lanes will be inadequate in length.

To mitigate this impact, the subdivision must pay its fair share for the needed intersection improvements. Condition of Approval #15 requires the applicant to prepare an analysis that determines this Project's fair share costs for the needed improvements, and that those fees be paid as part of the subdivision. The collection of fees for the street and signal improvements will provide a long-term solution, but the short-term impact would remain significant because the intersection improvements will not likely occur until adequate fair share fees are collected from this Project as well as from other nearby future projects. This means that the traffic impact would become significant and remain as such for a length a time until all of the improvements are completed, which likely would be years.

As a result, the Traffic Study recommends a mitigation measure that will reduce the SR 20/El Margarita Road intersection impact to a less than significant level. The Iterative Assessment portion of the Traffic Study provides that the impact from this Project does not become significant until over 80 new homes are constructed. To mitigate this impact a mitigation measure is provided that limits the construction of new homes to 80 units or equivalent types of development in the El Margarita corridor until adequate fees are collected, including fees from neighboring projects, and the intersection improvements are provided, or that the northbound traffic at the El Margarita Road/ SR/20 intersection be restricted to right-turns only. As such, the recommended mitigation measure, which is provided below, would reduce the impacts on the effected intersections to a less than significant level.

Regarding Project impacts on multi-modal facilities, which includes nearby transit, bicycle, and pedestrian facilities, the Traffic Study concludes that the Project is consistent with all City multi-modal facility policies and standards. Those impacts will be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

This CEQA section describes specific considerations for evaluating a project's transportation impacts in terms of Vehicle Miles Traveled (VMT). SACOG, in "Technical Advisory: On Evaluating Transportation Impacts in CEQA" provides two criteria for which if the Project meets either of them, the traffic impacts are considered less than significant. One criterion is that the Project generates less than 110 vehicle trips per day is considered to be less than a significant impact. The Project will exceed this criterion, so it is not considered any further in this review. The second criterion is that if a project, on a per capita or per employee basis, the VMT will be at least 15 percent below that of existing development is a reasonable threshold for determining significance. SACOG also has released a draft document (SB 743 regional screening maps) that provides mapping data indicating the average miles traveled for different areas within and around Yuba City. The range of the categories are:

Less than 50% of regional average.
50-85% of regional average.
85-100% of the regional average.
115-150% of the regional average.
More than 150% of the regional average.

Per the SACOG maps for the Project area, the estimated average vehicle distance traveled per residence is in the 50-85% range of the norm. In other words, per the SACOG regional screening maps this Project is located in an area that meets the 15 percent vehicle trip reduction criteria. Thus, the transportation impacts from this subdivision are consistent with CEQA Guidelines Section 15063.4(b) and it follows that the traffic impacts generated by this Project are considered to be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Traffic Study concludes that proposed improvements to public streets are consistent with Yuba City design standards. The Project does not introduce any incompatible users (e.g., farm equipment) to a roadway or transportation facility not intended for those users. The impacts on increased hazards due to new or updated geometric design features will be less than significant.

d) Result in inadequate emergency access?

The Fire and Police Departments have reviewed the Project plans and did not express concerns about emergency access to the property.

3.17.4 Transportation/Traffic Mitigation Measure

Traffic Mitigation Measure 1: As of July 8, 2025, the date of the TSM 25-01 Traffic Study, no more than 80 single-family residences, or other types of development with a traffic volume equivalent to 80 single-family residences, as approved by the Public Works Director, shall be allowed on a first come - first-serve basis along the El Margarita corridor between SR 20 and Franklin Road until such a time as the El Margarita Road/SR 20 intersection is signalized or until the northbound traffic at that intersection is limited to right-turns only. As the 80 unit or equivalent criteria is approached the Project developer or other property owner in the El Margarita corridor may submit an updated traffic study to the Public Works Director, either validating or modifying this 80-unit. Based on the results of that study, the Public Works Director may modify this 80-unit criteria if warranted.

3.18 Tribal Cultural Resources

Table 3-18: Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause of 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:				
a) 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			X	
b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

3.18.1 Environmental Setting/Affected Environment

This section describes the affected environment and regulatory setting for Tribal Cultural Resources (TCRs). The following analysis of the potential environmental impacts related to TCRs is derived primarily from the Environmental Impact Report for the City of Yuba City General Plan (2004) and consultation with the California Native American tribes under Assembly Bill 52 and Senate Bill 18.

3.18.2 State Regulatory Setting

Assembly Bill 52: Effective July 1, 2015, Assembly Bill 52 (AB 52) amended CEQA to require that: 1) a lead agency provide notice to any California Native American tribes that have requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include TCRs, the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Pursuant to AB 52, Section 21073 of the Public Resources Code defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the Public Resource Code defines TCRs for the purpose of CEQA as:

1) Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

    a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or

    b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or

    c. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria a and b also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their TCRs and heritage, AB 52 requires that CEQA lead agencies initiate consultation with tribes at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures.

Senate Bill 18: Effective since March 2005, this bill requires city and county governments to consult with California Native American tribes early in the planning process with the intent of protecting traditional tribal cultural places. The purpose of involving the tribes at the early stage of planning efforts is to allow consideration of tribal cultural places in context of broad local land use policy before project-level land use decisions are made by a local government. As such, SB 18 applies to the adoption or amendment of general or specific plans. As the later adopted AB 52 provides for a similar review process for all discretionary reviews including general plan amendments and specific plan amendments, for purposes of this study the provisions of SB 18 fall within the SB 52 review process.

3.18.3 Cultural Setting

The Nisenan (also referred to as Southern Maidu) inhabited the General Plan area prior to large-scale European and Euroamerican settlement of the surrounding area. Nisenan territory comprised the drainages of the Yuba, Bear, and American Rivers, and the lower drainages of the Feather River. The Nisenan, together with the Maidu and Konkow, their northern neighbors, form the Maiduan language family of the Penutian linguistic stock (Shipley 1978:89). Kroeber (1976:392) noted three dialects: Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan. Although cultural descriptions of this group in the English language are known from as early as 1849, most of our current cultural knowledge comes from various anthropologists in the early part of the 20th century (Levy 1978:413; Wilson and Towne 1978:397).

The basic subsistence strategy of the Nisenan was seasonally mobile hunting and gathering. Acorns, the primary staple of the Nisenan diet, were gathered in the valley along with seeds, buckeye, salmon, insects, and a wide variety of other plants and animals. During the warmer months, people moved to mountainous areas to hunt and collect food resources, such as pine nuts. Bedrock and portable mortars and pestles were used to process acorns. Nisenan settlement patterns were oriented to major river drainages and tributaries. In the foothills and lower Sierra Nevada, Nisenan located their villages in large flats or ridges near major streams. These villages tended to be smaller than the villages in the valley. (Wilson and Towne 1978:389–390.)

Trade provided other valuable resources that were not normally available in the Nisenan environment. The Valley Nisenan received black acorns, pine nuts, manzanita berries, skins, bows, and bow wood from the Hill Nisenan to their east, in exchange for fish, roots, grasses, shells, beads, salt, and feathers (Wilson and Towne 1978). To obtain, process, and utilize these material resources, the Nisenan had an array of tools to assist them. Wooden digging sticks, poles for shaking acorns loose, and baskets of primarily willow and redbud were used to gather vegetal resources. Stone mortars and pestles were used to process many of the vegetal foods; baskets, heated stones, and wooden stirring sticks were used for cooking. Basalt and obsidian were primary stone materials used for making knives, arrow and spear points, clubs, arrow straighteners, and scrapers. (Wilson and Towne 1978.)

Nisenan settlement locations depended primarily on elevation, exposure, and proximity to water and other resources. Permanent villages were usually located on low rises along major watercourses. Village size ranged from three houses to 40 or 50 houses. Larger villages often had semi-subterranean dance houses that were covered in earth and tule or brush and had a central smoke hole at the top and an entrance that faced east (Wilson and Towne 1978:388).Early Nisenan contact with Europeans appears to have been limited to the southern reaches of their territory. Spanish expeditions intruded into Nisenan territory in the early 1800s. In the two or three years following the gold discovery, Nisenan territory was overrun by immigrants from all over the world. Gold seekers and the settlements that sprang up to support them were nearly fatal to the native inhabitants. Survivors worked as wage laborers and domestic help and lived on the edges of foothill towns. Despite severe depredations, descendants of the Nisenan still live in their original land area and maintain and pass on their cultural identity.

3.18.4 Summary of Native American Consultation

AB 52 and SB 18 requires lead agencies to analyze Project impacts on “tribal cultural resources” separately from archaeological resources (PRC § 21074; 21083.09). AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC § 21080.3.1, 21080.3.2, 21082.3). In response to AB 52 and SB 18, the City sent letters on January 29th and 31st to the

following Native American tribes with a Project description and map of the proposed Project area and a request for comments:

- United Auburn Indian Community of the Auburn Rancheria
- Yocha Dehe Wintun Nation
- Estom Yomeka Maidu Tribe of the Enterprise Rancheria
- Mechoopda Indian Tribe
- Pakan'yani Maidu of Strawberry Valley
- Mooretown Rancheria of Maidu Indians
- Ione Band of Miwok Indians

3.18.5 Thresholds of Significance

AB 52 established that a substantial adverse change to a TCR has a significant effect on the environment. The thresholds of significance for impacts to TCRs are as follows:

Would the Project cause a substantial adverse change to a TCR, defined in Section 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a Native American tribe that are:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources;
- Included in a local register of historical resources as defined in subdivision k of Section 5010.1; and/or
- Determined by the City to be significant, as supported by substantial evidence, including:
    - A cultural landscape with a geographically defined boundary;
    - A historical resource as described in Section 21084.1 (either eligible for or listed on the California Register of Historical Resources or listed on a local registry);
    - A unique archaeological resource as defined in Section 21083.2; and/or
    - A non-unique archaeological resource as defined in Section 21083.2.

In assessing substantial adverse change, the City must determine whether or not the project will adversely affect the qualities of the resource that convey its significance. The qualities are expressed through integrity. Integrity of a resource is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, Section 4852(c)]. Impacts are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(a)]. Accordingly, impacts to a TCR would likely be significant if the project negatively affects the qualities of integrity that made it significant in the first place. In making this determination, the City need only address the aspects of integrity that are important to the TCR's significance.

3.18.6 Impact Assessment/Environmental Consequences:

a) 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).

The site is vacant except at the southeast corner of the Project site is a single-family residence of more recent vintage and an associated out-building. The Environmental Impact Report for the City of Yuba City General Plan (2004) did not identify any historical resources on the property. Therefore, the impacts on any historical resources, directly or indirectly, will be less than significant.

b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

The City solicited consultation with culturally affiliated California Native American tribes (regarding the proposed Project in accordance with AB 52 and SB 18). No comments were received. Since there still remains the potential for previously unknown sub-surface resources to be present, the "Unanticipated Discoveries" mitigation is utilized In order to avoid potential impacts to unknown remains. This ensures that the impacts on tribal cultural resources will be less than significant.

3.18.7 Tribal Cultural Mitigation Measures

Tribal Cultural Resources Mitigation 1: Unanticipated Discoveries: If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American Tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (PRC 21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary.

Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign. Culturally appropriate treatment may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, returning objects to a location within the project area where they will not be subject to future impacts. The Tribe does not consider curation of TCR's to be appropriate or respectful and request that materials not be permanently curated, unless approved by the Tribe.

The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including but limited to, facilitating the appropriate tribal treatment of the find, as necessary. Treatment that preserves or restores the cultural character and integrity of a Tribal Cultural Resource may include Tribal monitoring, culturally appropriate recovery of cultural objects, and reburial of cultural objects or cultural soil.

Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of CEQA, including AB 52 has been satisfied.

3.19 Utilities and Service Systems

Table 3-19: Utilities and Service Systems				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?			X	
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 projected demand in addition to the existing commitments?			X	
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?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

3.19.1 Environmental Setting/Affected Environment

Wastewater:

Yuba City owns, operates, and maintains the wastewater collection, treatment, and disposal system that provides sewer service to approximately 60,000 residents and numerous businesses. The remainder of the residents and businesses in the Yuba City Sphere of Influence (SOI) are currently serviced by private septic systems. In the early 1970s, the City's original sewage treatment plant was abandoned, and the current Wastewater Treatment Facility (WWTF) was constructed.

Water:

The water supply source for the City is surface water from the Feather River with use of a backup groundwater well. The City of Yuba City is a public water agency with approximately 18,045 connections. City policy only allows areas within the City limits to be served by the surface water system.

Reuse and Recycling:

Solid waste generated in Yuba City is collected by Recology Yuba-Sutter. Recology offers residential, commercial, industrial, electronic, and hazardous waste collection, processing, recycling, and disposal, as well as construction and demolition waste processing, diversion, and transfer to a disposal facility. The

City's municipal solid waste is delivered to the Ostrom Road Landfill; a State-permitted solid waste facility that provides a full range of transfer and diversion services. As of June 2021, the Recology Ostrom Road Landfill Remaining Site Net Airspace is 33,764,000 cy; and has a remaining capacity of 21,297,000 tons; and remaining landfill service life is 53 years.

3.19.2 Federal Regulatory Setting

National Pollutant Discharge Elimination System: Discharge of treated wastewater to surface water(s) of the U.S., including wetlands, requires an NPDES permit. In California, the RWQCB administers the issuance of these federal permits. Obtaining a NPDES permit requires preparation of detailed information, including characterization of wastewater sources, treatment processes, and effluent quality. Any future development that exceeds one acre in size would be required to comply with NPDES criteria, including preparation of a Stormwater Pollution Prevention Plan (SWPPP) and the inclusion of BMPs to control erosion and offsite transport of soils.

3.19.3 State Regulatory Setting

State Water Resources Control Board (SWRCB): Waste Discharge Requirements Program. State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in Title 27, CCR, Section 20005 et seq. (hereafter Title 27). In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non-Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to Section 20230 of Title 27. Several programs are administered under the WDR Program, including the Sanitary Sewer Order and recycled water programs.

Department of Resources Recycling and Recovery (CalRecycle): The Department of Resources Recycling and Recovery (CalRecycle) is the State agency designated to oversee, manage, and track the 76 million tons of waste generated each year in California. CalRecycle develops laws and regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The board works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 (PRC 40050 et seq. or Assembly Bill (AB 939, codified in PRC 40000), administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

Regional Water Quality Control Boards: The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards. The State Board sets statewide policy for the implementation of state and federal laws and regulations. The Regional Boards adopt and implement Water Quality Control Plans (Basin Plans), which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities.

National Pollutant Discharge Elimination System (NPDES) Permit: As authorized by the Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into water of the United States. In California, it is the responsibility of Regional Water Quality Control Boards (RWQCB) to preserve and enhance the quality of the state's waters through the development of water quality control plans and the issuance of waste discharge requirements (WDRs). WDRs for discharges to surface waters also serve as NPDES permits.

California Department of Water Resources: The California Department of Water Resources (DWR) is a department within the California Resources Agency. The DWR is responsible for the State of California's management and regulation of water usage.

3.19.4 Impact Assessment/Environmental Consequences:

a) Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The area has been planned for this growth in the City General Plan, for which an EIR was prepared. There are also citywide water, wastewater, and drainage master plans that include this area. The expansion of those infrastructure facilities occur based on citywide needs and were previously addressed under separate environmental reviews for those projects.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

All proposed 141 single-family residences will connect to both the City's water and wastewater treatment systems. The Yuba City Wastewater Treatment Facility (WWTF) has available capacity to accommodate new growth. The WWTF current permitted capacity is 10.5 mgd (annual average dry weather flow). The existing average influent flow to the WWTF is approximately 6 mgd. The remaining treatment capacity at the WWTF can be used to accommodate additional flow from the future developments.

The City's Water Treatment plant (WTP), for which its primary source of water is from the Feather River, also has adequate capacity to accommodate this project. The WTP uses two types of treatment systems, conventional and membrane treatment. The permitted capacity of the conventional WTP is 24 million gallons per day (mgd). The membrane treatment system has a permitted capacity of 12 mgd. Water produced from the conventional and the membrane treatment plants are blended for chlorine disinfection. Operating the conventional and membrane treatment facilities provides a total WTP capacity of 36 mgd. The City is permitted to draw 30 mgd from the Feather River. The current maximum day use is 26 mgd. The City also has an on-site water well at the water plant that supplements the surface water when needed.

For both facilities there are City adopted master plans to expand those plants to the extent that they will accommodate the overall growth of the City.

The ongoing expansions of those plants to accommodate growth beyond this Project are primarily funded by the connection fees paid by each new connection. Therefore, the impact on the water and wastewater treatment facilities will be less than significant.

Stormwater drainage in this area is provided by a combination of Yuba City drainage lines and the Sutter County Water agency which maintains the Live Oak Canal System. As the Sutter County Water Agency

did not comment on the Project, the impacts on the stormwater drainage system will be less than significant.

The extension of electric power facilities, natural gas facilities and telecommunication facilities are provided by private companies, none of which have voiced concerns over the extensions of their services to this Project site. With these considerations the impact on these types of facilities are expected to be less than significant.

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 projected demand in addition to the existing commitments?

See Parts a) and b), above.

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.

Recology Yuba-Sutter provides solid waste disposal for the area as well as for all of Sutter and Yuba Counties. There is approximately 50 years of capacity at the landfill to accommodate the proposed development.

e) Comply with federal, state, and local statutes and regulations related to solid waste?

The landfill is in compliance with all federal, state and local policies and statutes.

3.20 Wildfire

Table 3-20: Wildfire				
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
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?			X	
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?			X	
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?			X	

3.20.1 Environmental Setting/Affected Environment

Wildland fires are an annual hazard in Sutter County, particularly in the vicinity of the Sutter Buttes, and, to a lesser degree due to urbanized development, Yuba City. Wildland fires burn natural vegetation on undeveloped lands and include rangeland, brush, and grass fires. Long, hot, and dry summers with temperatures often exceeding 100°F add to the County's fire hazard. Human activities are the major causes of wildland fires, while lightning causes the remaining wildland fires. Irrigated agricultural areas, which tend to surround Yuba City, are considered a low hazard for wildland fires.

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program identifies fire threat based on a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These two factors are combined in determining the following Fire Hazard Severity Zones: Moderate, High, Very High, Extreme. These zones apply to areas designated as State Responsibility Areas – areas in which the State has primary firefighting responsibility. The Project site is not within a State Responsibility Area and therefore has not been placed in a Fire Hazard Severity Zone.

3.20.2 Impact Assessment/ Environmental Consequences

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

As discussed in Section 3.17 of this Initial Study, any construction that would result from this Project is not expected to substantially obstruct emergency vehicles or any evacuations that may occur in the area. Therefore, the impacts of the Project related to emergency response or evacuations would be less than significant.

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?

The Project site is within the Yuba City urban area that has little to no native vegetation remaining, and the Yuba City urban area is surrounded by irrigated farmland. This type of environment is generally not subject to wildland fires. In light of this, the exposure of new residents to wildfire is a less than significant impact.

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?

As discussed above, the site is not near any wildland areas. The Project site itself is surrounded by developed land and irrigated agricultural land and it will not create any improvements that potentially could generate wildfire conditions. As such the Project will not be constructing or maintaining wildfire related infrastructure such as fire breaks, emergency water sources, etc. Thus, the Project will not create any potential significant impacts that could result from these types of improvements.

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?

The Project site is in a topographically flat area. There are no streams or other channels that cross the site. As such, it is not expected that people or structures would be exposed to significant risks from changes resulting from fires in steeper areas, downslope or downstream flooding or landslides. Impacts from the Project related to these issues would be less than significant.

3.21 Mandatory Findings of Significance

Table 3.21: Mandatory Findings of Significance				
Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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 example of the major periods of California history or prehistory?			X	
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)			X	
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

3.21.1 Impact Assessment/Environmental Consequences:

a) Does the project have the potential to 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 example of the major periods of California history or prehistory?

The land was stripped many years ago of native vegetation and is within the urban area. Due to past land clearing and previous use of the site for agricultural activities, the site contains little remaining plant or animal habitat value. There are no on-site or nearby water courses or wetland areas. Therefore the Project will not significantly degrade the quality of the natural 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate an important example of the major periods of California history or prehistory.

The analysis conducted in this Initial Study/Mitigated Negative Declaration, along with the proposed mitigation measures, results in a determination that the proposed Project, with its mitigation measures, will have a less than significant effect on the local environment.

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)

CEQA Guidelines Section 15064(i) states that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of a project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects.

This amendment to the Land Use Element of the General Plan was compared to policies in other elements of the General Plan. As such the traffic generated by the proposed residential subdivision, with the proposed traffic related mitigation measure, is consistent with what was anticipated in the General Plan's Transportation Element. The City has adequate water and wastewater capacity, and the Project will be extending those services to the site. Stormwater drainage will also meet all City standards. Due to the location of the development within the urban area, there will be no loss of agricultural land. The Yuba City Unified School District has not indicated that they lack capacity to provide proper educational facilities to the new students. Regarding air quality impacts from the Project's 141 single-family residential lots the FRAQMD commented that with the implementation of the recommended mitigation measures proposed in the air quality study as well as the FRAQMD standards, the air quality impacts will be less than significant.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

The proposed Project in and of itself would not create a significant hazard to the public or the environment. Construction-related air quality, noise, and hazardous materials exposure impacts would occur for a very short period and only be a minor impact during that time period. Therefore, the proposed Project would not have any direct or indirect significant adverse impacts on humans.

4 Section References and/or Incorporated by Reference

According to Section 15150 of the CEQA Guidelines, an ND may incorporate by reference all or portions of another document that is a matter of public record. The incorporated language will be considered to be set forth in full as part of the text of the ND. All documents incorporated by reference are available for review at, or can be obtained through, the City of Yuba City Development Services Department located at the address provided above. The following documents are incorporated by reference:

Flecker Associates, Transportation Impact analysis For The Ridge Estates, July 8, 2025

Air Quality study for the Project by MHM Engineering, June 2025.

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Fehr & Peers Associates, Inc. 1995. Yuba-Sutter Bikeway Master Plan. December 1995.

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APPENDIX A

Air Quality Study for the Ridge Estates

Prepared by MHM Engineering

June 2025

The Ridge Estates Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

3.3. Site Preparation (2025) - Unmitigated

3.5. Rough Grading (2025) - Unmitigated

3.7. Final Grading (2025) - Unmitigated

3.9. Building Construction (2025) - Unmitigated

3.11. Building Construction (2026) - Unmitigated

3.13. Building Construction (2027) - Unmitigated

3.15. Building Construction (2028) - Unmitigated

3.17. Paving (2025) - Unmitigated

3.19. Architectural Coating (2027) - Unmitigated

3.21. Underground (2025) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	The Ridge Estates
Construction Start Date	6/3/2025
Operational Year	2026
Lead Agency	Yuba City
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.135509502691605, -121.66486007807926
County	Sutter
City	Yuba City
Air District	Feather River AQMD
Air Basin	Sacramento Valley
TAZ	303
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	139	Dwelling Unit	20.4	250,200	1,628,087	50.0	320	SFR

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	236	236	23.0	26.2	0.05	0.94	3.91	4.83	0.86	0.45	1.29	—	6,067	6,067	0.25	0.14	2.99	6,091
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	236	236	9.88	15.3	0.03	0.40	0.72	1.05	0.37	0.17	0.51	—	3,291	3,291	0.12	0.10	0.08	3,324
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.8	13.7	6.60	10.00	0.02	0.25	0.44	0.69	0.23	0.11	0.34	—	2,209	2,209	0.09	0.07	0.90	2,233
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.52	2.49	1.21	1.82	< 0.005	0.05	0.08	0.13	0.04	0.02	0.06	—	366	366	0.01	0.01	0.15	370
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	25.0	25.0	—	—	80.0	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	—	—	No	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	25.0	25.0	—	—	80.0	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.09	2.61	23.0	26.2	0.05	0.94	3.91	4.83	0.86	0.45	1.29	—	6,067	6,067	0.25	0.14	1.86	6,091
2026	1.34	1.14	9.19	14.8	0.02	0.35	0.62	0.96	0.32	0.15	0.47	—	3,144	3,144	0.12	0.10	2.92	3,179
2027	236	236	9.60	16.3	0.03	0.33	0.72	1.05	0.31	0.17	0.48	—	3,367	3,367	0.11	0.10	2.99	3,402
2028	1.24	1.06	8.27	14.4	0.02	0.28	0.62	0.90	0.26	0.15	0.41	—	3,103	3,103	0.10	0.09	2.39	3,135
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.40	1.17	9.88	14.2	0.02	0.40	0.62	1.01	0.37	0.15	0.51	—	3,098	3,098	0.12	0.10	0.08	3,130
2026	1.31	1.12	9.29	13.9	0.02	0.35	0.62	0.96	0.32	0.15	0.47	—	3,079	3,079	0.11	0.10	0.08	3,111
2027	236	236	9.69	15.3	0.03	0.33	0.72	1.05	0.31	0.17	0.48	—	3,291	3,291	0.11	0.10	0.08	3,324
2028	1.21	1.04	8.35	13.6	0.02	0.28	0.62	0.90	0.26	0.15	0.41	—	3,041	3,041	0.10	0.10	0.06	3,072
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.49	0.41	3.57	4.74	0.01	0.14	0.30	0.44	0.13	0.05	0.18	—	999	999	0.04	0.02	0.25	1,006
2026	0.94	0.80	6.60	10.00	0.02	0.25	0.44	0.69	0.23	0.11	0.34	—	2,209	2,209	0.09	0.07	0.90	2,233
2027	13.8	13.7	6.32	9.94	0.02	0.22	0.44	0.67	0.21	0.11	0.31	—	2,209	2,209	0.07	0.07	0.83	2,232

2028	0.72	0.61	4.92	8.06	0.01	0.17	0.36	0.53	0.15	0.09	0.24	—	1,805	1,805	0.06	0.06	0.61	1,824
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.09	0.07	0.65	0.87	< 0.005	0.03	0.06	0.08	0.02	0.01	0.03	—	165	165	0.01	< 0.005	0.04	167
2026	0.17	0.15	1.21	1.82	< 0.005	0.05	0.08	0.13	0.04	0.02	0.06	—	366	366	0.01	0.01	0.15	370
2027	2.52	2.49	1.15	1.81	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	366	366	0.01	0.01	0.14	370
2028	0.13	0.11	0.90	1.47	< 0.005	0.03	0.07	0.10	0.03	0.02	0.04	—	299	299	0.01	0.01	0.10	302

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.5	13.9	9.16	73.1	0.16	0.24	12.3	12.5	0.23	3.12	3.35	55.9	17,656	17,712	6.32	0.79	55.5	18,161
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.2	12.5	10.4	53.2	0.15	0.23	12.3	12.5	0.22	3.12	3.34	55.9	16,353	16,409	6.38	0.85	3.18	16,825
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.4	12.8	9.71	56.0	0.15	0.23	12.0	12.2	0.22	3.05	3.27	55.9	16,319	16,375	6.34	0.81	24.5	16,798
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.45	2.33	1.77	10.2	0.03	0.04	2.18	2.23	0.04	0.56	0.60	9.25	2,702	2,711	1.05	0.13	4.05	2,781
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	25.0	25.0	—	—	80.0	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—	—	—

Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	25.0	25.0	—	—	80.0	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.04	6.48	8.06	64.8	0.15	0.15	12.3	12.4	0.14	3.12	3.26	—	15,643	15,643	0.48	0.75	53.7	15,932
Area	7.38	7.34	0.08	7.88	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.2
Energy	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,958	1,958	0.22	0.02	—	1,968
Water	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Waste	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Total	14.5	13.9	9.16	73.1	0.16	0.24	12.3	12.5	0.23	3.12	3.35	55.9	17,656	17,712	6.32	0.79	55.5	18,161
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.40	5.82	9.42	52.8	0.14	0.15	12.3	12.4	0.14	3.12	3.26	—	14,361	14,361	0.54	0.81	1.39	14,617
Area	6.64	6.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,958	1,958	0.22	0.02	—	1,968
Water	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Waste	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Total	13.2	12.5	10.4	53.2	0.15	0.23	12.3	12.5	0.22	3.12	3.34	55.9	16,353	16,409	6.38	0.85	3.18	16,825

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.28	5.72	8.65	51.7	0.14	0.15	12.0	12.1	0.14	3.05	3.19	—	14,317	14,317	0.50	0.76	22.7	14,579
Area	7.01	6.99	0.04	3.89	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.4	10.4	< 0.005	< 0.005	—	10.4
Energy	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,958	1,958	0.22	0.02	—	1,968
Water	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Waste	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Total	13.4	12.8	9.71	56.0	0.15	0.23	12.0	12.2	0.22	3.05	3.27	55.9	16,319	16,375	6.34	0.81	24.5	16,798
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.15	1.04	1.58	9.43	0.03	0.03	2.18	2.21	0.03	0.56	0.58	—	2,370	2,370	0.08	0.13	3.75	2,414
Area	1.28	1.27	0.01	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.72	1.72	< 0.005	< 0.005	—	1.73
Energy	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	324	324	0.04	< 0.005	—	326
Water	—	—	—	—	—	—	—	—	—	—	—	1.73	5.59	7.31	0.18	< 0.005	—	13.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.52	0.00	7.52	0.75	0.00	—	26.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30	0.30
Total	2.45	2.33	1.77	10.2	0.03	0.04	2.18	2.23	0.04	0.56	0.60	9.25	2,702	2,711	1.05	0.13	4.05	2,781

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.55	0.55	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	28.2	28.2	< 0.005	< 0.005	—	28.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.66	4.66	< 0.005	< 0.005	—	4.68
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	1.10	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	172	172	0.01	0.01	0.62	174
Vendor	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	0.00

Hauling	0.02	0.01	0.78	0.17	< 0.005	0.01	0.17	0.19	0.01	0.05	0.06	—	661	661	0.01	0.11	1.24	694
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.28	1.28	< 0.005	< 0.005	< 0.005	1.30
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.44	5.44	< 0.005	< 0.005	< 0.005	5.70
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Vendor	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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.94

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.83	2.38	22.3	23.5	0.05	0.91	—	0.91	0.84	—	0.84	—	5,839	5,839	0.24	0.05	—	5,859
Dust From Material Movement	—	—	—	—	—	—	3.71	3.71	—	0.40	0.40	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.0	80.0	< 0.005	< 0.005	—	80.3
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.2	13.2	< 0.005	< 0.005	—	13.3
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.46	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	229	229	0.01	0.01	0.82	232
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.85	2.85	< 0.005	< 0.005	< 0.005	2.89
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.48
Vendor	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	0.00
Hauling	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	0.00

3.5. Rough Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.43	2.04	18.9	18.8	0.05	0.78	—	0.78	0.72	—	0.72	—	4,938	4,938	0.20	0.04	—	4,955
Dust From Material Movement	—	—	—	—	—	—	2.65	2.65	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.09	0.08	0.73	0.72	< 0.005	0.03	—	0.03	0.03	—	0.03	—	189	189	0.01	< 0.005	—	190
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.4	31.4	< 0.005	< 0.005	—	31.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.91	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	143	143	0.01	0.01	0.51	145
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.98	4.98	< 0.005	< 0.005	0.01	5.06
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.84
Vendor	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	0.00
Hauling	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	0.00

3.7. Final Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.59	2.18	19.8	19.8	0.05	0.82	—	0.82	0.76	—	0.76	—	5,079	5,079	0.21	0.04	—	5,097
Dust From Material Movement	—	—	—	—	—	—	2.65	2.65	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.7	55.7	< 0.005	< 0.005	—	55.9
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.22	9.22	< 0.005	< 0.005	—	9.25
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	1.10	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	172	172	0.01	0.01	0.62	174
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.71	1.71	< 0.005	< 0.005	< 0.005	1.73
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Vendor	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	0.00
Hauling	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	0.00

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	0.95	9.10	11.4	0.02	0.39	—	0.39	0.36	—	0.36	—	2,190	2,190	0.09	0.02	—	2,198
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.28	1.60	< 0.005	0.06	—	0.06	0.05	—	0.05	—	309	309	0.01	< 0.005	—	310
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.3
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.21	0.25	2.65	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	505	505	0.03	0.02	0.05	512
Vendor	0.02	0.01	0.53	0.16	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	402	402	< 0.005	0.06	0.03	420
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.38	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.13	74.4
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	56.6	56.6	< 0.005	0.01	0.07	59.2
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	0.01	9.80
Hauling	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	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	8.55	11.3	0.02	0.34	—	0.34	0.32	—	0.32	—	2,190	2,190	0.09	0.02	—	2,197
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.07	0.90	8.55	11.3	0.02	0.34	—	0.34	0.32	—	0.32	—	2,190	2,190	0.09	0.02	—	2,197
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.77	0.64	6.11	8.09	0.01	0.25	—	0.25	0.23	—	0.23	—	1,564	1,564	0.06	0.01	—	1,569
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.14	0.12	1.11	1.48	< 0.005	0.04	—	0.04	0.04	—	0.04	—	259	259	0.01	< 0.005	—	260
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.16	3.37	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	560	560	0.02	0.02	1.86	568
Vendor	0.02	0.01	0.47	0.15	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	394	394	< 0.005	0.06	1.06	413
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.23	2.44	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	495	495	0.01	0.02	0.05	501
Vendor	0.02	0.01	0.51	0.16	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	394	394	< 0.005	0.06	0.03	413
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.16	0.15	0.14	1.80	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	364	364	0.02	0.01	0.57	369
Vendor	0.01	0.01	0.36	0.11	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	281	281	< 0.005	0.04	0.33	295
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	60.2	60.2	< 0.005	< 0.005	0.09	61.1
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	46.6	46.6	< 0.005	0.01	0.05	48.8
Hauling	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	0.00

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	8.13	11.3	0.02	0.31	—	0.31	0.28	—	0.28	—	2,190	2,190	0.09	0.02	—	2,197
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	8.13	11.3	0.02	0.31	—	0.31	0.28	—	0.28	—	2,190	2,190	0.09	0.02	—	2,197
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.74	0.62	5.80	8.08	0.01	0.22	—	0.22	0.20	—	0.20	—	1,564	1,564	0.06	0.01	—	1,569
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	1.06	1.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	259	259	0.01	< 0.005	—	260
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.16	3.12	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	549	549	0.01	0.02	1.67	556
Vendor	0.02	0.01	0.45	0.15	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	385	385	< 0.005	0.06	0.98	403
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.20	2.27	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	485	485	0.01	0.02	0.04	492
Vendor	0.01	0.01	0.49	0.15	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	386	386	< 0.005	0.06	0.03	403
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.13	1.67	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	357	357	0.01	0.01	0.52	362
Vendor	0.01	0.01	0.34	0.11	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	275	275	< 0.005	0.04	0.30	288
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	59.0	59.0	< 0.005	< 0.005	0.09	59.9
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	45.6	45.6	< 0.005	0.01	0.05	47.7

Hauling	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	0.00

3.15. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.69	11.3	0.02	0.28	—	0.28	0.25	—	0.25	—	2,190	2,190	0.09	0.02	—	2,197
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.69	11.3	0.02	0.28	—	0.28	0.25	—	0.25	—	2,190	2,190	0.09	0.02	—	2,197
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.50	4.55	6.69	0.01	0.16	—	0.16	0.15	—	0.15	—	1,294	1,294	0.05	0.01	—	1,299
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.11	0.09	0.83	1.22	< 0.005	0.03	—	0.03	0.03	—	0.03	—	214	214	0.01	< 0.005	—	215
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.21	0.14	2.91	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	537	537	0.01	0.02	1.50	544
Vendor	0.02	0.01	0.44	0.14	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	376	376	< 0.005	0.06	0.89	394
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.18	2.12	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	475	475	0.01	0.02	0.04	481
Vendor	0.01	0.01	0.47	0.15	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	376	376	< 0.005	0.06	0.02	393
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.29	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	289	289	0.01	0.01	0.38	293
Vendor	0.01	0.01	0.27	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	222	222	< 0.005	0.03	0.23	233
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.8	47.8	< 0.005	< 0.005	0.06	48.4
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.8	36.8	< 0.005	0.01	0.04	38.5
Hauling	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	0.00

3.17. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.73	4.99	0.01	0.17	—	0.17	0.16	—	0.16	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.28	8.28	< 0.005	< 0.005	—	8.31
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.37	1.37	< 0.005	< 0.005	—	1.38
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.40	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.8	75.8	< 0.005	< 0.005	0.01	76.8
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.87
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Vendor	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	0.00
Hauling	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	0.00

3.19. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	235	235	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	235	235	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	12.9	12.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	2.35	2.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.62	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	110	110	< 0.005	< 0.005	0.33	111
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.0	97.0	< 0.005	< 0.005	0.01	98.3
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.47	5.47	< 0.005	< 0.005	0.01	5.55
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	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	0.00
Hauling	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	0.00

3.21. Underground (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.37	0.31	3.03	4.83	0.01	0.11	—	0.11	0.10	—	0.10	—	723	723	0.03	0.01	—	725
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.31	3.03	4.83	0.01	0.11	—	0.11	0.10	—	0.10	—	723	723	0.03	0.01	—	725
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.69	1.10	< 0.005	0.03	—	0.03	0.02	—	0.02	—	164	164	0.01	< 0.005	—	165
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.2	27.2	< 0.005	< 0.005	—	27.3
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.55	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.8	85.8	< 0.005	< 0.005	0.31	87.1
Vendor	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	0.00
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.40	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.8	75.8	< 0.005	< 0.005	0.01	76.8
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.7	17.7	< 0.005	< 0.005	0.03	18.0
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.94	2.94	< 0.005	< 0.005	0.01	2.98
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	7.04	6.48	8.06	64.8	0.15	0.15	12.3	12.4	0.14	3.12	3.26	—	15,643	15,643	0.48	0.75	53.7	15,932
Total	7.04	6.48	8.06	64.8	0.15	0.15	12.3	12.4	0.14	3.12	3.26	—	15,643	15,643	0.48	0.75	53.7	15,932

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	6.40	5.82	9.42	52.8	0.14	0.15	12.3	12.4	0.14	3.12	3.26	—	14,361	14,361	0.54	0.81	1.39	14,617
Total	6.40	5.82	9.42	52.8	0.14	0.15	12.3	12.4	0.14	3.12	3.26	—	14,361	14,361	0.54	0.81	1.39	14,617
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.15	1.04	1.58	9.43	0.03	0.03	2.18	2.21	0.03	0.56	0.58	—	2,370	2,370	0.08	0.13	3.75	2,414
Total	1.15	1.04	1.58	9.43	0.03	0.03	2.18	2.21	0.03	0.56	0.58	—	2,370	2,370	0.08	0.13	3.75	2,414

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	662	662	0.11	0.01	—	669
Total	—	—	—	—	—	—	—	—	—	—	—	—	662	662	0.11	0.01	—	669
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	662	662	0.11	0.01	—	669
Total	—	—	—	—	—	—	—	—	—	—	—	—	662	662	0.11	0.01	—	669
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	110	110	0.02	< 0.005	—	111
Total	—	—	—	—	—	—	—	—	—	—	—	—	110	110	0.02	< 0.005	—	111

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,296	1,296	0.11	< 0.005	—	1,299
Total	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,296	1,296	0.11	< 0.005	—	1,299
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,296	1,296	0.11	< 0.005	—	1,299
Total	0.12	0.06	1.02	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,296	1,296	0.11	< 0.005	—	1,299
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	215	215	0.02	< 0.005	—	215
Total	0.02	0.01	0.19	0.08	< 0.005	0.02	—	0.02	0.02	—	0.02	—	215	215	0.02	< 0.005	—	215

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	5.35	5.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.29	1.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.74	0.70	0.08	7.88	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.2
Total	7.38	7.34	0.08	7.88	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	5.35	5.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.29	1.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	6.64	6.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.98	0.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.23	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.07	0.06	0.01	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.72	1.72	< 0.005	< 0.005	—	1.73
Total	1.28	1.27	0.01	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.72	1.72	< 0.005	< 0.005	—	1.73

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Total	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Total	—	—	—	—	—	—	—	—	—	—	—	10.4	33.7	44.2	1.08	0.03	—	78.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.73	5.59	7.31	0.18	< 0.005	—	13.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.73	5.59	7.31	0.18	< 0.005	—	13.1

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Total	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Total	—	—	—	—	—	—	—	—	—	—	—	45.5	0.00	45.5	4.54	0.00	—	159
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.52	0.00	7.52	0.75	0.00	—	26.3
Total	—	—	—	—	—	—	—	—	—	—	—	7.52	0.00	7.52	0.75	0.00	—	26.3

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.79	1.79
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30	0.30
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30	0.30

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/3/2025	6/5/2025	5.00	3.00	—
Site Preparation	Site Preparation	6/7/2025	6/14/2025	5.00	5.00	—
Rough Grading	Grading	6/17/2025	7/2/2025	6.00	14.0	—
Final Grading	Grading	9/2/2025	9/6/2025	5.00	4.00	—
Building Construction	Building Construction	10/21/2025	10/28/2028	5.00	789	—
Paving	Paving	10/14/2025	10/18/2025	5.00	4.00	—
Architectural Coating	Architectural Coating	3/7/2027	4/4/2027	5.00	20.0	—
Underground	Trenching	7/8/2025	10/11/2025	6.00	83.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40

Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Scrapers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Rough Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Rough Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Final Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Final Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Final Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Final Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Underground	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Underground	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.3	LDA,LDT1,LDT2
Demolition	Vendor	—	8.80	HHDT,MHDT
Demolition	Hauling	9.67	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	14.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	12.5	14.3	LDA,LDT1,LDT2
Rough Grading	Vendor	—	8.80	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	50.0	14.3	LDA,LDT1,LDT2
Building Construction	Vendor	14.9	8.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	14.3	LDA,LDT1,LDT2
Paving	Vendor	—	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	10.0	14.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Final Grading	—	—	—	—
Final Grading	Worker	15.0	14.3	LDA,LDT1,LDT2
Final Grading	Vendor	—	8.80	HHDT,MHDT
Final Grading	Hauling	0.00	20.0	HHDT
Final Grading	Onsite truck	—	—	HHDT
Underground	—	—	—	—
Underground	Worker	7.50	14.3	LDA,LDT1,LDT2
Underground	Vendor	—	8.80	HHDT,MHDT
Underground	Hauling	0.00	20.0	HHDT
Underground	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	506,655	168,885	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	2,500	—
Site Preparation	0.00	0.00	19.8	0.00	—
Rough Grading	0.00	0.00	19.8	0.00	—
Final Grading	0.00	0.00	19.8	0.00	—
Paving	0.00	0.00	0.00	0.00	1.53

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.53	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,312	1,326	1,188	473,213	16,968	17,148	15,369	6,119,451

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
506655	168,885	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	1,185,074	204	0.0330	0.0040	4,043,514

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	5,443,612	26,877,993

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	84.3	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	29.4	annual days of extreme heat
Extreme Precipitation	4.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	4	2
Extreme Precipitation	1	0	5	1
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	5	1
Flooding	1	0	4	1
Drought	4	0	4	1
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	4	2
Extreme Precipitation	1	1	5	1
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	5	1
Flooding	1	1	4	1
Drought	4	1	4	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	1	1	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	48.7
AQ-PM	41.4

AQ-DPM	61.6
Drinking Water	75.1
Lead Risk Housing	31.8
Pesticides	90.2
Toxic Releases	4.98
Traffic	43.5
Effect Indicators	—
CleanUp Sites	53.4
Groundwater	71.7
Haz Waste Facilities/Generators	56.4
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	14.9
Cardio-vascular	66.0
Low Birth Weights	91.6
Socioeconomic Factor Indicators	—
Education	80.3
Housing	25.7
Linguistic	73.7
Poverty	80.6
Unemployment	89.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	30.68138073

Employed	17.20775055
Median HI	31.61811882
Education	—
Bachelor's or higher	29.56499423
High school enrollment	24.5989991
Preschool enrollment	32.91415373
Transportation	—
Auto Access	23.89323752
Active commuting	38.0341332
Social	—
2-parent households	48.659053
Voting	59.25830874
Neighborhood	—
Alcohol availability	59.69459772
Park access	22.07108944
Retail density	53.3042474
Supermarket access	44.3731554
Tree canopy	72.33414603
Housing	—
Homeownership	34.21018863
Housing habitability	56.61491082
Low-inc homeowner severe housing cost burden	86.05158476
Low-inc renter severe housing cost burden	63.05658925
Uncrowded housing	36.04516874
Health Outcomes	—
Insured adults	24.93263185
Arthritis	0.0
Asthma ER Admissions	91.4

High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	39.4
Cognitively Disabled	36.6
Physically Disabled	65.4
Heart Attack ER Admissions	43.2
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	44.4
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	41.8
Elderly	50.9
English Speaking	26.9
Foreign-born	65.6
Outdoor Workers	28.9

Climate Change Adaptive Capacity	—
Impervious Surface Cover	63.3
Traffic Density	21.9
Traffic Access	0.0
Other Indices	—
Hardship	75.1
Other Decision Support	—
2016 Voting	49.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	74.0
Healthy Places Index Score for Project Location (b)	28.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification

Characteristics: Project Details	The project is currently zoned for commercial and an assisted living project. The proposal is to rezone back to the original zoning of R-1 Single Family Residential. The justification is to have housing close to schools, commercial center, and City core. This project meets those requirements.
Land Use	The number of lots and acreage are taken directly off the tentative map. This project is at the high end of the density range. SFR range is 2 to 8 and this project is 6.80 DU/AC which is close to the maximum possible meeting City of Yuba City setback and width requirements.
Construction: Construction Phases	Used actual site development schedule. About 30 to 40 homes will be built each year so this project should take three years.
Construction: Off-Road Equipment	Used equipment typical of residential site development.
Construction: Dust From Material Movement	Used site acreage
Operations: Hearths	Wood Stove and Fireplaces not allowed

APPENDIX B

TRANSPORTATION ANALYSIS FOR THE RIDGE ESTATES

Prepared by

FLECKER ASSOCIATES

JULY 8, 2025

TRANSPORTATION IMPACT ANALYSIS

FOR

THE RIDGE ESTATES
Yuba City, CA

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July 8, 2025

6050-01

TRANSPORTATION IMPACT ANALYSIS FOR
THE RIDGE ESTATES
Yuba City, CA

TABLE OF CONTENTS

INTRODUCTION 1

EXISTING SETTING 4

Existing Street System 4
Existing Traffic Volumes 5
Level of Service / 95th Percentile Queue Calculation 5
Existing Peak Hour Traffic Conditions 8
Alternative Transportation Modes 10

PROJECT CHARACTERISTICS 12

Project Descriptions 12

CEQA TRANSPORTATION IMPACTS 15

Vehicle Miles Traveled Analysis 15
Multi-Modal Plan Consistency 17
Standards of Significance / Level of Service Thresholds 18

EXISTING PLUS PROJECT CONDITIONS 19

ITERATIVE ASSESSMENT 22

CUMULATIVE CONDITIONS 25

Long Term Cumulative Conditions 25
Cumulative No Project Conditions 26
Cumulative Plus Project Conditions 30

FINDINGS / RECOMMENDATIONS/ IMPROVEMENTS 33

REFERENCES 38

APPENDIX 39

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TRANSPORTATION IMPACT ANALYSIS FOR
THE RIDGE ESTATES
Yuba City, CA

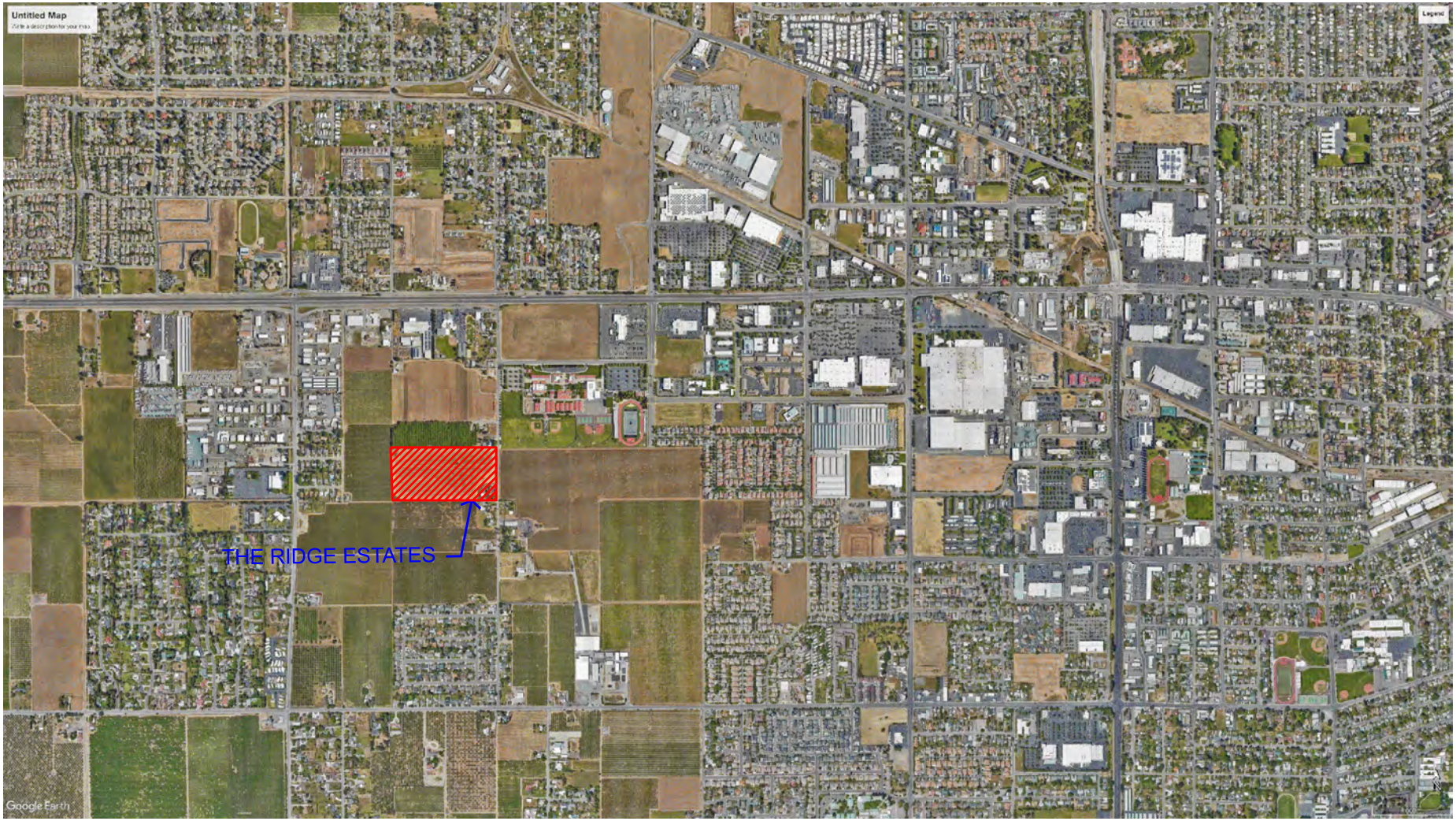
INTRODUCTION

This report summarizes Flecker Associates (FA) analysis of the potential transportation impacts and traffic operational effects associated with The Ridge Estates site in Yuba City, California. The Ridge Estates site is located along the west side of El Margarita Road south of Spirit Way and is shown regionally in Figure 1. The proposed site plan is shown in Figure 2.

Project Description. The Ridge Estates property is located southwest of the El Margarita Road / Spirit Way intersection. The project intends to construct 139 single family residential units. Three public access streets are proposed along El Margarita.

Analysis Approach. The purpose of this analysis is to identify the potential impacts of the project under the California Environmental Quality Act and to evaluate the project's effects on local traffic operations within the requirements of City of Yuba City General Plan standards and policies. The analysis includes identification / evaluation of existing traffic circulation conditions in the area based on current a.m. and p.m. peak hour traffic volumes.

The extent to which improvements are currently needed were determined based on a level of service analysis of seven study intersections. The general characteristics of the proposed projects were determined based on probable peak hour trip generation, regional trip distribution and local trip assignment. The impact of the project on regional Vehicle Miles Traveled (VMT), alternative transportation modes and safety at Caltrans facilities was also assessed. Local traffic operational analyses were conducted to determine intersection Levels of Service and queuing at the study intersections under Existing plus Project conditions and long-term cumulative conditions assuming the City of Yuba City travel demand forecasting model's Market Absorption forecast.



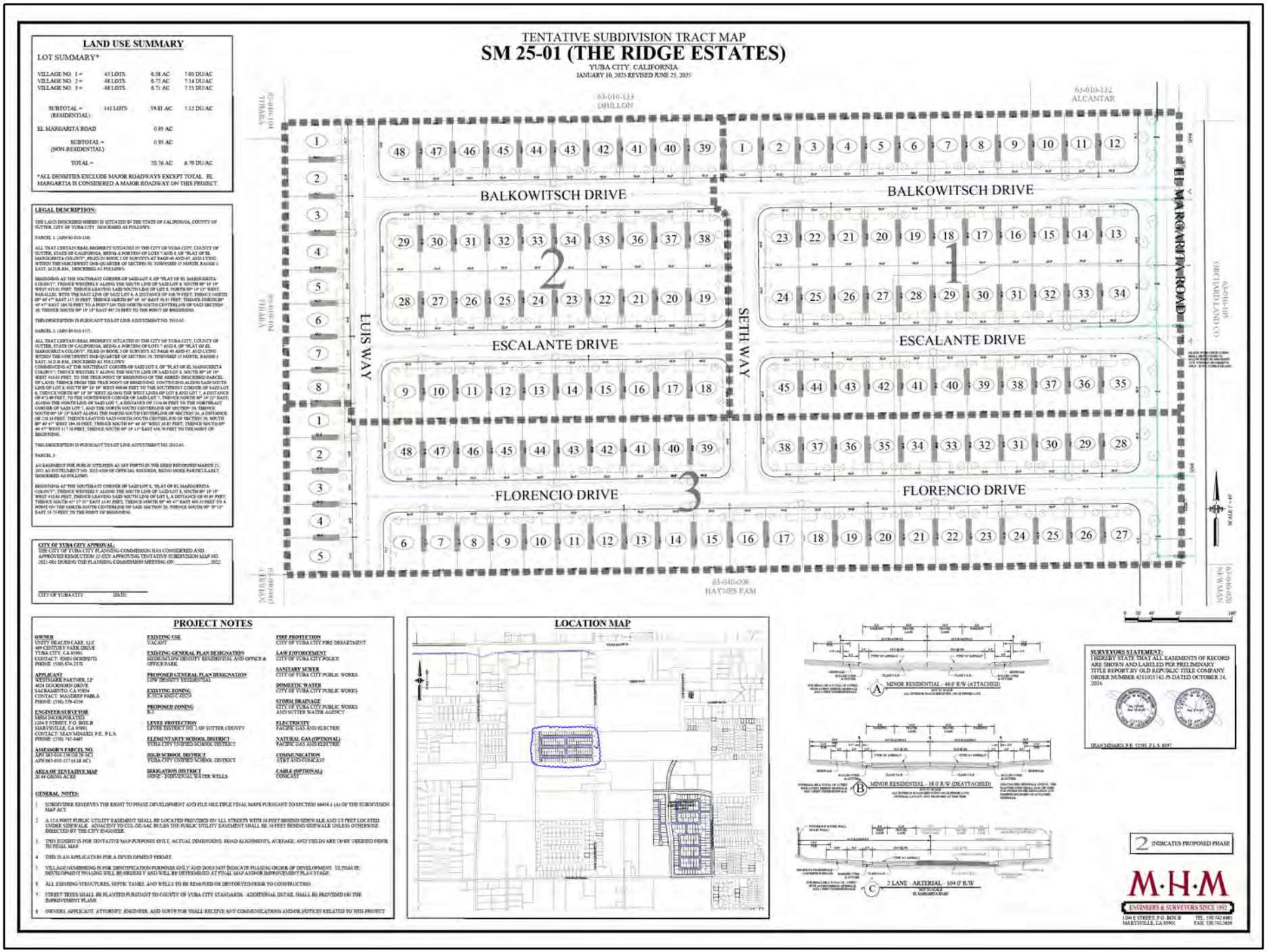
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VICINTY MAP

FIGURE 1

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THE RIDGE ESTATES SITE PLAN

FIGURE 2

EXISTING SETTING

Existing Street System

Intersections. The operational analysis considers these intersections.

The **Colusa Highway (SR 20) / El Margarita Road** intersection is a tee intersection with stop control along El Margarita Road. Colusa Highway is a four-lane divided highway in this section of the highway. A dedicated left turn lane is present for westbound traffic while the outside eastbound lane is a shared through-right lane. El Margarita Road is a two-lane roadway with a single northbound lane into the intersection. There are no crosswalks present in the intersection. A streetlight is present in the southeast quadrant of the intersection.

The **El Margarita Road / S. Colusa Frontage Road** intersection is a tee intersection with stop control along the eastbound Colusa Frontage Road approach. Each approach has a single travel lane, and there are no marked crosswalks. This intersection is about 100 feet south of the Colusa Highway intersection. The closest streetlights include one at the Colusa Highway intersection and one located about 90 feet south of the intersection along the east side of the street. Bike lanes are present south of the intersection.

The **El Margarita Road / Spirit Way** intersection is a tee intersection with stop control along the westbound Spirit Way approach. The southbound El Margarita Road approach includes a through lane and a left turn lane while the northbound approach consists of a shared through-right lane. Spirit Way is a two-lane roadway with a center two-way-left-turn-lane (TWLTL) between El Margarita Road and Harter Parkway. At El Margarita Road the TWLTL is striped as a dedicated left turn lane while the 'through' lane allows for only right turn movements. The northbound approach includes a TWLTL to the south parking lot entrance along the high school. South of the driveway the roadway transitions back to a two-lane roadway. Bike lanes are present along all three legs of the intersection, and crosswalks exist across all legs. Streetlights ae present in the northeast and southeast quadrants.

The **El Margarita Road / Franklin Road** intersection is a tee intersection with stop control along southbound El Margarita Road. Each of the three approaches includes a single lane with a shared left-right lane along El Margarita Road, a shared through-left lane along eastbound Franklin Road and a shared through-right lane along westbound Franklin Road. The southbound approach allows for right turning traffic to queue adjacent to left turning traffic.

The **Harter Parkway / Spirit Way** intersection is currently a tee intersection with all way stop control. The Harter Parkway approaches include dedicated left turn lanes, a through lane and a shared through-right lane. The eastbound Spirit Way approach includes a dedicated left turn lane and a shared left-right lane. The east leg curb returns have been constructed with barricades on

the roadway blocking access to fallow land. This fourth leg will open with development of the property on the east side of Harter Parkway. Crosswalks are present across all approaches and bike lanes exist along both roadways. Streetlights are present in the northeast and southwest quadrants of the intersection.

Existing Traffic Volumes

Traffic Counts. Traffic counts were conducted in mid-January 2024 while school was in session. Figure 3 presents the existing a.m. and p.m. peak hour volumes at the study locations.

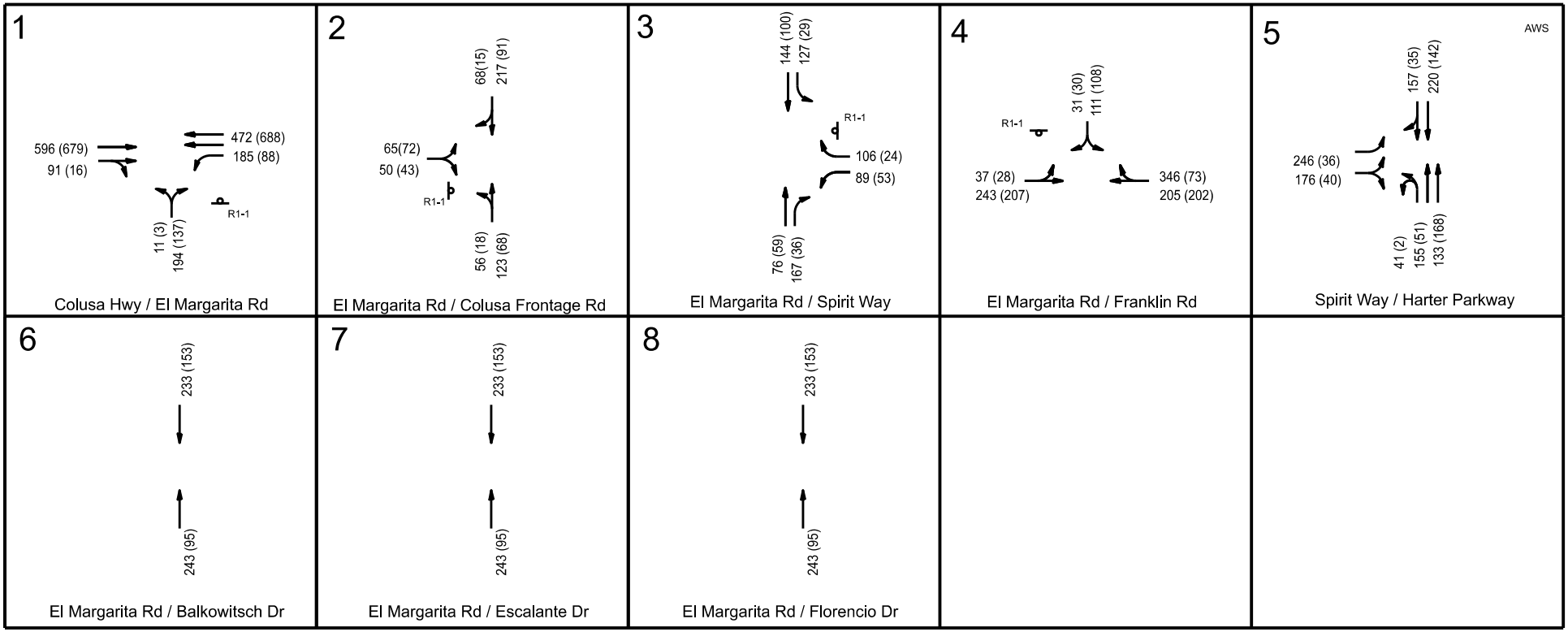
Level of Service / 95th Percentile Queue Calculation

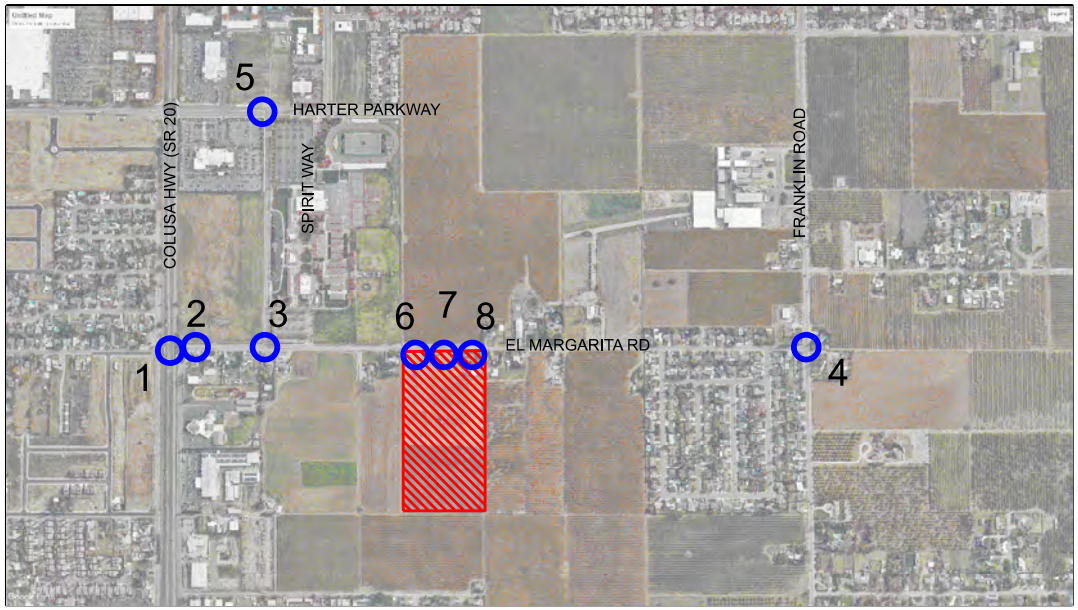
Level of Service. To quantitatively evaluate traffic conditions and to provide a basis for comparison of operating conditions with and without project generated traffic, Levels of Service were determined at study area intersections.

"Level of Service" (LOS) is a quantitative measure of traffic operating conditions whereby a letter grade "A" through "F" is assigned to an intersection. LOS "A" through "F" represents progressively worsening traffic conditions. The characteristics associated with the various LOS for intersections are presented in Table 1. The City of Yuba City General Plan strives to maintain a target LOS D or better for collector and / or arterial roadways at City controlled intersections. The City Council may accept different LOS standards for state highways and intersections, and other roadways. The Caltrans TCR for SR 20 identifies LOS E as the Concept LOS for the Harter Parkway intersection east.

Levels of Service were calculated for this study using the methodology contained in the *Highway Capacity Manual, 7th Edition (HCM)*. The overall Level of Service for intersections was determined based on the average length of delays for all motorists at signalized intersections. At unsignalized intersections the Level of Service was based on the length of the average delay experienced by motorists who must yield the right of way before turning or continuing through an intersection. Level of Service was calculated using *Synchro* Version 12 software.

Peak Period Queues. Queues created during peak periods at signalized intersections were identified based on the *Synchro* results. The 95th percentile queue is the metric used in developing turn lane lengths. The 95th percentile queues is not necessarily the longest queue occurring during the peak period but represent queues with lengths that are exceeded only 5% of the time. While the City of Yuba City has not adopted significance criteria for queueing, it is commonly accepted that queue's length that extend beyond the limits of available turn lane storage and interfere with through traffic represent a potential safety conflict.





LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

EXISTING VOLUMES
AM / PM PEAK HOURS

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FIGURE 3

TABLE 1 LEVEL OF SERVICE DEFINITIONS			
Level of Service	**Signalized Intersection**	**Unsignalized Intersection**	**Roadway (Daily)**
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: Highway Capacity Manual, 7th Edition.			

Existing Peak Hour Traffic Conditions

Current a.m. and p.m. peak hour Levels of Service were calculated at existing intersections selected by the City for inclusion in the analysis under Existing conditions. Results are presented in Table 2 for the midweek a.m. and p.m. peak hours.

Level of Service. Peak hour operating conditions show that the El Margarita Road / Spirit Way intersection currently operates at LOS E in the a.m. peak hour. This is a result of the high peak hour factor due to the adjacent high school traffic. Similar to other schools, this LOS is a short-term occurrence during the time students come to school in the morning, lasting for about 15 to 20 minutes. All other intersections operate at LOS D or better in the a.m. and p.m. peak periods.

One intersection currently meets the peak hour signal warrant, the SR 20 / El Margarita Road intersection. This intersection meets the warrant for both time periods.

TABLE 2
EXISTING AM / PM PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Min LOS[1]	AM Peak Hour		PM Peak Hour		Meets Peak Hour Warrant
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	
1. Colusa Hwy (SR 20) / El Margarita Rd	NB Stop	D	24.2	C	14.2	B	Yes[2]
2. El Margarita Rd / S. Colusa Frontage Rd	EB Stop	D	24.5	C	11.4	B	No
3. El Margarita Rd / Spirit Way	WB Stop	D	**38.8**	**E**	10.1	B	No
4. El Margarita Rd / Franklin Rd	SB Stop	D	25.1	D	14.5	B	No
5. Harter Parkway / Spirit Way	AWS	D	28.5	D	8.7	A	No

[1] minimum LOS established by the City of Yuba City or Caltrans SR 20 TCR.
[2] meets peak hour warrant under No Project both time periods
Bold indicates LOS exceeds City thresholds
N/S – not studied

Peak Hour 95th Percentile Queues. Table 3 presents current peak hour 95th percentile. Traffic on the El Margarita Road to SR 20 approach creates queues that can back up through the N. Colusa a Frontage Road intersection due to the closely spaced intersection (90'±) with SR 20. Queues at all turn lanes except the northbound left turn lane along Harter Parkway at Spirit Way are contained within their lanes. This northbound lane queue exceeds the available storage lane by about one car (23') during the a.m. peak hour. This is a result of the high peak hour factor due to short-term school traffic.

TABLE 3 EXISTING PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS				
			AM Peak Hr	PM Peak Hr
Intersection	**Lane**	**Storage (feet)**	**95th % Queue (feet)**	**95th % Queue (feet)**
1. Colusa Hwy (SR 20) / El Margarita Rd	WB left	200	30	<25
	NB	90	90	30
2. El Margarita Rd / Colusa Frontage Rd	EB	--	75[4]	<25
	NB	--	8[1]	<25
3. El Margarita Rd / Spirit Way	SB left	--	<25	<215
	WB left	260[2]	145	<25
4. El Margarita Rd / Franklin Rd	SB	--	65	30
	WB	--	<25	<25
5. Harter Parkway / Spirit Way	NB left	100	**123**	<25
	SB thru-right	300[2]	153	<25
	EB left	500[3]	218	<25

Bold indicates queue exceeds available storage
[1] continuation of queue from adjacent intersection
[2] length to adjacent intersection
[3] approach includes left turn lane (TWLTL) and shared left-right lane 500 feet to adjacent intersection – longest queue shown
[4] length a result of NB queue at adjacent intersection

Collison History. Recent collision history for the SR 20 / El Margarita Road key intersection was obtained from the California Highway Patrol (CHP), review and assessed. Table 4 summarizes the results at the local intersection over the last 5 years along Colusa Highway (SR 20), between 2019 and 2023; Caltrans' latest crash data publication is the *2022 Crash Data on California State Highways*.

The equivalent annual collision frequency rate was calculated for the intersection on SR 20, and the result was compared to statewide averages for similar facilities (i.e., 0.29 acc/mve). The recent overall collision frequency, 0.13, is lower than the statewide average.

TABLE 4 YEAR 2019 - 2023 COLLISION HISTORY												
	2019		2020		2021		2022		2023		Total	
Location	total	inj	total	inj	total	inj	total	inj	total	inj	total	inj
Colusa Hwy (SR 20) / El Margarita Rd	1	2	0	0	2	5	1	0	0	0	4[1]	7
MVE – million vehicles entering; ev – entering vehicles; acc/MVE – accidents per million vehicles entering crash rate = [(No of crashes in 'n' years) x (1,000,000)] / [(total entering vehicles) x (365) x ('n' years)] [1] collision frequency [4 x 1,000,000] / [16,760[2] ev x 365 x 5] = 0.13 acc/MVE [2] daily volume estimated based on peak pm traffic entering intersection Statewide average is 0.29 for total collisions at rural unsignalized tee intersections (Group 17)												

Alternative Transportation Modes

The text which follows outlines facilities for pedestrians, bicyclists and transit riders in the area of the project.

Pedestrians. Sidewalks are rare in the area of the proposed project but have been provided as new development has completed frontage improvements. Typically pedestrians walk along the paved shoulders on major roads and on unimproved shoulders on local streets. Table 5 summarizes available pedestrian facilities in the vicinity.

TABLE 5 STUDY AREA PEDESTRIAN FACILITIES			
Street	**Location**	**Side**	**Description**
Spirit Way	El Margarita Road to Harter Pkwy	north	existing sidewalk from 630 feet west of Harter Parkway to Harter Parkway
		south	Existing sidewalk along entire length
S. Colusa Frontage Rd	El Margarita Road to to Hooper Rd	north	None
		south	None
El Margarita Road	S. Colusa Frontage Rd to Spirit Way	east	None
		west	None
	Spirit Way to Franklin Rd	east	Existing sidewalk along River Valley High School frontage (1,060')
		west	None along project frontage; existing sidewalk beginning 110' south of Imperial Way

Bicycles. The Yuba City Bicycle Master Plan (2011) identifies existing and planned facilities for this transportation mode under these classifications:

- Class 1 Bicycle Path – a facility separated from other vehicular traffic
- Class 2 Bicycle Lanes – a paved lane along a street striped for the exclusive use of bicycles
- Class 3 Bicycle Route – a shared facility designated for bicycle use

Table 6 identifies existing and planned bicycle facilities in the area of the proposed project.

TABLE 6
STUDY AREA BICYCLE FACILITIES

Street	Location	Side	Description
Existing			
El Margarita Rd	S. Colusa Frontage Rd to 1,000'± south of Spirit Way	Both	Class 2 Lanes
Spirit Way	El Margarita Rd to Harter Prkwy	Both	Class 2 Lanes
Harter Prkwy	Colusa Hwy (SR 20) to Lassen Blvd	West / Both	Class 1 Path / Class 2 Lanes
Planned			
S. Colusa Frontage Rd	El Margarita Rd to Geo Washington Blvd	Both	Class 2 Lanes
El Margarita Rd	1,000'± south of Spirit Way to Franklin Ave	Both	Class 2 Lanes
Source: Yuba City Bicycle Master Plan, 2011			

Transit Services. The Yuba City area is served by Yuba Sutter Transit. Fixed route service is provided via routes #1 (Yuba City to Yuba College) and #5 (South Yuba City to North Yuba City). These routes travel on 30-minute and 60-minute headways on Harter Parkway between Lassen Blvd, one block south of Spirit Way to Butte House Road. Both routes have a designated stop at the Harter Parkway / Spirit Way intersection, about ½ mile from The Ridge Estates site via Spirit Way.

Yuba-Sutter Dial-A-Ride offers curb-to-curb shared ride service to eligible passengers anywhere within its service area. The Ridge Estates is within the current service area. This service is available from 6:30 a.m. to 9:30 p.m. on weekdays and from 8:30 a.m. to 5:30 p.m. on Saturdays. No service is provided on Sundays or holidays.

PROJECT CHARACTERISTICS

Project Descriptions

The text that follows describes the characteristics of the project in terms of automobile trip generation and distribution.

Trip Generation – The Ridge Estates. The number of vehicle trips that are expected to be generated by development of the site was estimated using data from ITE *Trip Generation, 11th Edition*. The project intends to construct 139 single family residential housing. The project is expected to generate 1,311 daily trips with 97 a.m. peak hour trips and 131 p.m. peak hour trips.

Table 7 presents the peak hour trips including internal trip reductions. The project is expected to generate 4,435 new daily trips, 269 new a.m. peak hour trips and 442 new p.m. peak hour trips.

TABLE 7
AM / PM PEAK HOUR TRIP GENERATION RATES
THE RIDGE ESTATES

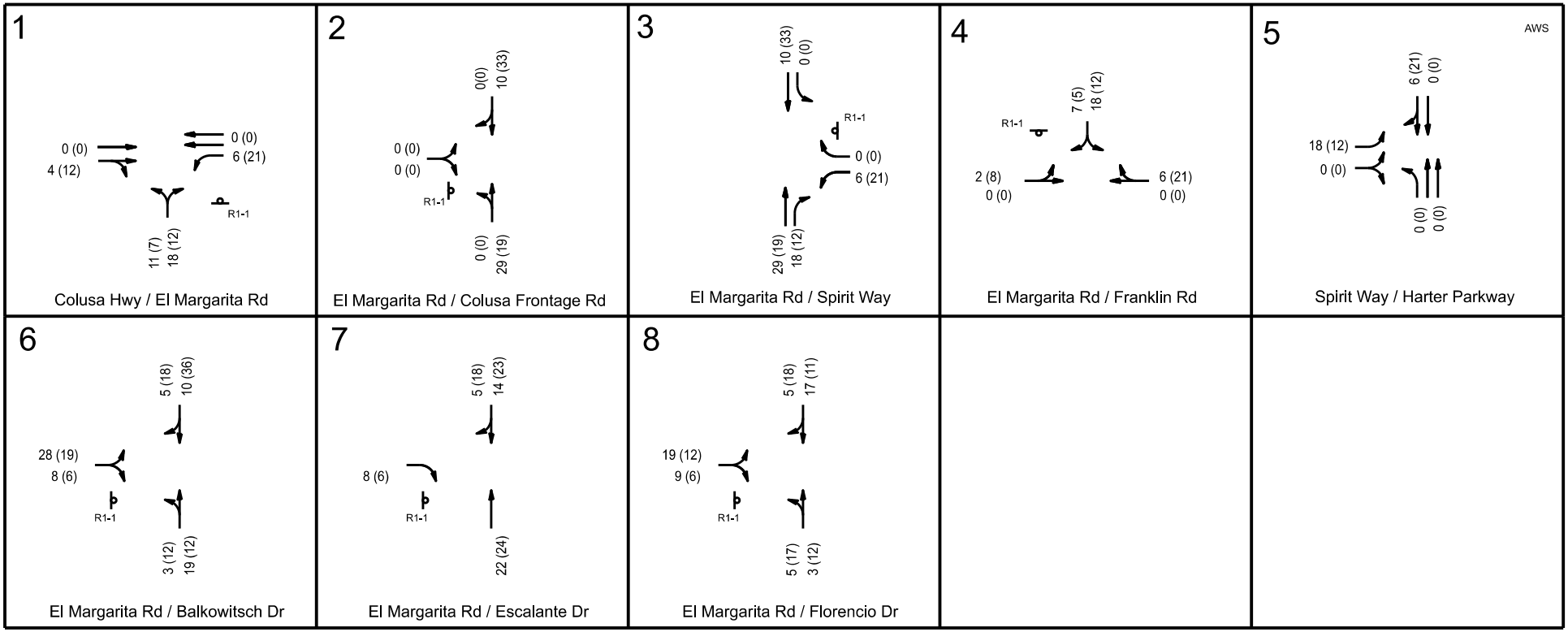
Land Use	Quantity / Unit	Trip Per Unit[1]						
		Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Residential (LU 210)	139 DU	9.43	0.70	26%	74%	0.94	63%	37%
Single Family Residential (LU 210)		1,311	97	24	73	131	82	48
Net New Trips		**1,311**	**97**	24	73	**131**	82	48

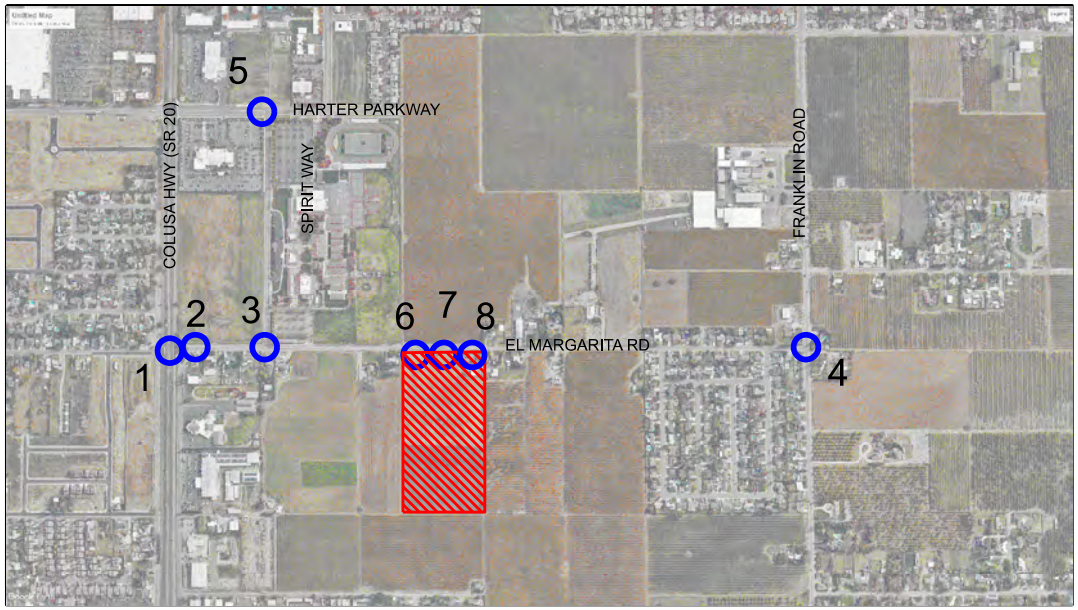
numbers may not equal due to rounding
[1] *ITE Trip Generation*, 11th Edition

Trip Distribution. The regional distribution of project trips was developed based on existing travel patterns, the City's regional travel demand forecasting model for future conditions, current and future roadway network and the demographics of the project. The projected trip distribution is shown in Table 8.

TABLE 8 PROJECT TRIP DISTRIBUTION			
Direction	**Route**	**Percentages**	
		Existing	**Future**
North	Via Harter Parkway	25%	20%
East	Via Colusa Highway (SR 20)	25%	25%
South	Via Franklin Rd west	10%	15%
	Via Franklin Rd east	25%	25%
West	Via SR 20	15%	15%
Total		**100%**	**100%**

Trip Assignment. Project traffic was assigned to the study area circulation system based on the intersection locations identified in the site plan. The center intersection, Escalante Drive, will have movements limited to right-in, right-out only. The Ridge Estates "Project only" traffic under the Existing plus Project scenario is presented in Figure 4.





N

LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

THE RIDGE ESTATES PROJECT VOLUMES
AM / PM PEAK HOUR (EXISTING)

FIGURE 4

FLECKER ASSOCIATES

6050-01

CEQA TRANSPORTATION IMPACTS

This report section identifies transportation impact under current CEQA requirements and Caltrans transportation analysis guidelines.

Vehicle Miles Traveled Analysis

Vehicle Miles Traveled (VMT) refers to the amount and distance of vehicle travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. For CEQA transportation impact assessment, VMT shall be calculated using the origin-destination VMT method, which accounts for the full distance of vehicle trips with one end from the project.

Process. Because Yuba City has not yet adopted guidelines for addressing VMT impacts for land development projects in compliance with CEQA Guidelines Section 15064.3, guidance provided in the Governor's Office of Planning and Research (OPR) technical directive on CEQA has been employed. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

- ***Screening Criteria***: Screening criteria are intended to quickly identify when a project should be expected to cause a less-than-significant VMT impact without conducting a detailed study.

- ***Significance Thresholds***: Significance thresholds define what constitutes an acceptable level of VMT and what is considered a significant level of VMT requiring mitigation.

- ***Analysis Methodology***: These are the procedures and tools for producing VMT forecasts to use in the VMT impact assessment.

- ***Mitigation***: Projects that are found to have a significant VMT impact based on the County's significance thresholds are required to implement mitigation measures to reduce impacts to a less than significant level (or to the extent feasible).

Screening Criteria. Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without conducting a detailed study. However, each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. Projects meeting at least one of the criteria below can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

The following screening criteria have been reviewed. The extent to which the proposed project qualifies under each criterion is also noted.

- Small Projects – The proposed project is estimated to generate 1,311 new daily trips. This value exceeds the 110 daily threshold, and this screening criterion does not apply.

- Affordable Housing – The proposed project is a residential use, but the project does not provide 100% affordable residential housing; therefore, this screening criterion does not apply.

- Locations Served by High Quality Transit – The closest bus routes to the site include the #1 an #5 lines, both of which run along Harter Parkway. However, the current service does not meet the 15-minute headway. Therefore, this screening criterion does not apply.

- Local Serving Retail – The proposed project is not a retail project. Therefore, this screening criterion does not apply.

- Map Based Screening for Residential and Office Projects – The Sacramento Area Council of Governments (SACOG) has identified Low VMT generating locations within this region, including Yuba City using Map Based Screening. The Ridge Estates location within SACOG region was determined. The residential VMT per capita characteristics of this area of Yuba City was identified and is shown in Table 9. The SACOG regional VMT per capita is 20.82 VMT. The location containing the site has a rate per job of 11.43 and a rate per capita of 14.54. The OPR recommended goal would be a 15% reduction from the regional average for residential land uses. The 15% reduction goal for residential is 17.70. The residential site has a 30% reduction and is greater than the 15% VMT reduction goal. The site is located in a defined Low VMT generating region for the residential land use. The project's impact can be presumed to be less than significant under this screen line criteria.

TABLE 9
VMT ANALYSIS RESULTS

SACOG Regional Average	15% Reduction Goal	Ridge Estates	Ridge Estates Reduction from Average	Regional Goal Met?
VMT per Capita				
20.82	17.70	14.54	30%	Yes

Multi-Modal Plan Consistency

The significance of the project's Multi-Modal impacts is discussed in the text which follows.

Transit Service and Facilities. The closest fixed route transit service runs along Harter Parkway. There is no existing service along El Margarita Road. The project does not physically disrupt an existing transit service or facility nor interfere with implementation of any known planned transit service or facility. The traffic contribution of both projects to streets near the Walton Avenue Transfer Center would be too slight to result in increased travel time for buses that adversely affects system on-time performance. It is possible that The Ridge Estates project could result in use of the dial-a-ride service operated by Yuba-Sutter Transit during the midweek, but it is unlikely the project would result in increased transit ridership demands that result in passenger loads that exceed vehicle loading standards. As the project intersections are not adjacent to any transit facility and demand response service can be loaded and unloaded on site, the project does not result in increased potential for safety conflicts involving transit vehicles and other modes of travel.

Conclusion. The project's impact to Transit Service and Facilities is not significant.

Bicycle Facilities.

Curb and gutter has previously been installed along the east side of El Margarita Road from S. Colusa Frontage Road south to the south side of the River Valley High School frontage; the River Valley High School frontage is northeast of The Ridge Estates site. The project will provide frontage improvements consistent with City standards that will widen El Margarita Road to its ultimate width along the west side of the road beginning about ¼ mile south of Spirit Way to its southern project limits, about 700 feet to the south. This will include curb, gutter and sidewalk and adequate pavement width to provide the identified future bicycle lane. Bicycle lane striping and markings may be added to initiate the planned southbound facility as part of the City's Bicycle Master Plan; however, the bicycle lane would be discontinuous until adjacent parcel develop.

Pedestrian Facilities.

The project is expected to construct sidewalks along the project frontage, on the west side of El Margarita Road. The project does not physically disrupt an existing pedestrian facility nor interfere with implementation of a planned pedestrian facility.

Standards of Significance / Level of Service Thresholds

The significance of the proposed project's impact on traffic operating conditions is based on a determination of whether project generated traffic results in roadway or intersection operating conditions below acceptable standards as defined by the governing agency. A project's impact on traffic conditions is considered significant if implementation of the project would result in LOS changing from levels considered acceptable to levels considered unacceptable, or if the project would significantly worsen an already unacceptable LOS without the project. Relevant policies for the study area consist of the following.

SB 743

SB 743 required that as of July 1, 2020 evaluation of transportation impacts under CEQA may no longer be based on consideration of Level of Service and moved to evaluation based on Vehicle Miles Traveled (VMT). Methods for estimating project VMT and for evaluating VMT impacts are outlined in Office of Planning & Research (OPR) directives and are implemented by individual jurisdictions. The City of Yuba City is working towards creation and adoption of applicable methods for estimating and evaluating a project's effects on VMT but thresholds of significance have not yet been adopted

Yuba City General Plan (Adopted April 2004)

Implementing Policy 5.2-1-12 *(Traffic Level of Service)* of the General Plan's Transportation section states the following:

> Develop and manage the roadway system to obtain LOS D or better for all major roadways and intersections in the City. This policy does not extend to residential streets (i.e., streets with direct driveway access to homes) or bridges across the Feather River nor does the policy apply to state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as downtown, where allowing a lower LOS would result in clear public benefits. Specific exceptions granted by the Council shall be added to the list of exceptions below:
>
> - SR 20 (SR 99 to Feather River Bridge) – LOS F is acceptable;
> - SR 20 (Feather River Bridge) – LOS F is acceptable;
> - Bridge Street (Twin Cities Bridge) – LOS F is acceptable;
> - Lincoln Road (New Bridge across the Feather River) – LOS F is acceptable;
> - Bridge Street from Palora Avenue to Second Street – LOS F is acceptable.
>
> No new development will be approved unless it can be shown that the required level of service can be maintained on the affected roadways.

Based upon the above, the following standards and significance criteria have been used for this analysis to identify a significant impact.

- Cause level of service at a study intersection to degrade from an acceptable LOS D or better to LOS E or F.

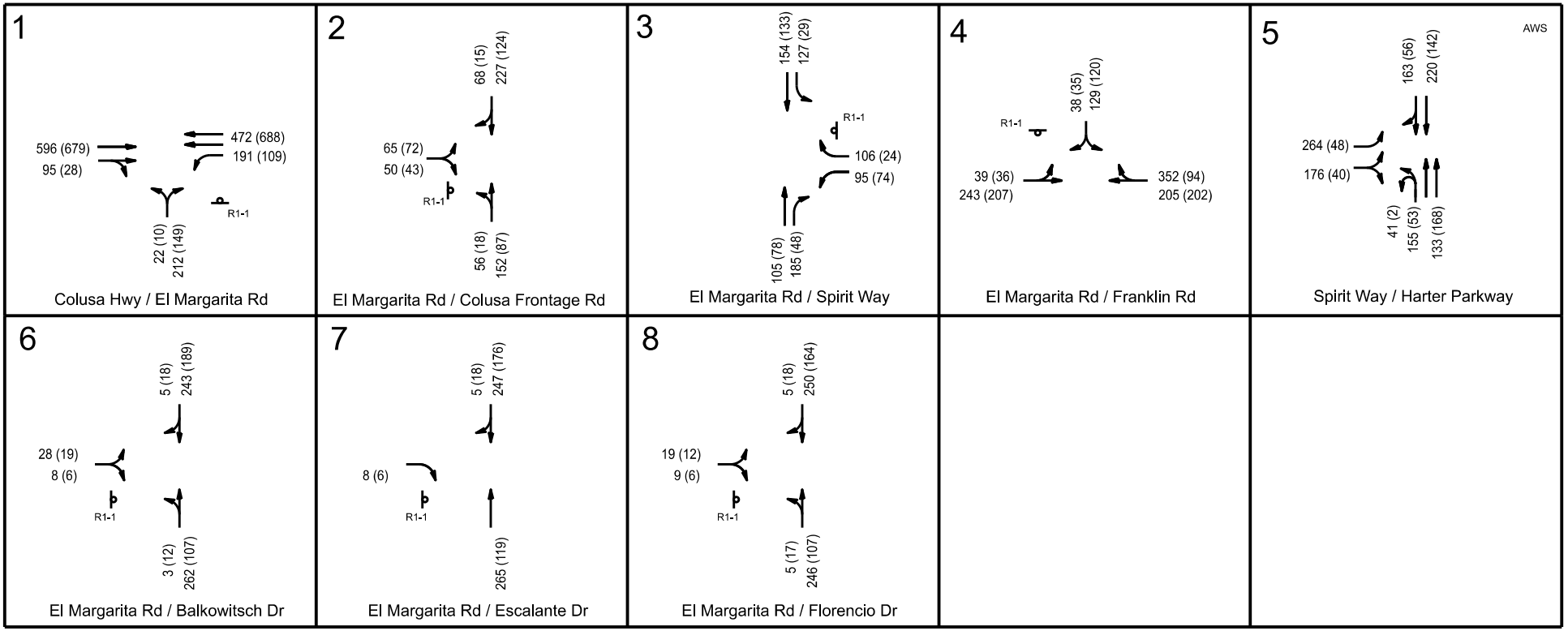
- Exacerbate the no project level of service at a study intersection operating at an unacceptable LOS. Based upon direction provided by City staff for past studies in this area, exacerbation of unacceptable operations at a City signalized intersection is considered an impact if the proposed project causes an increase in the average vehicle delay of 5 seconds or more.

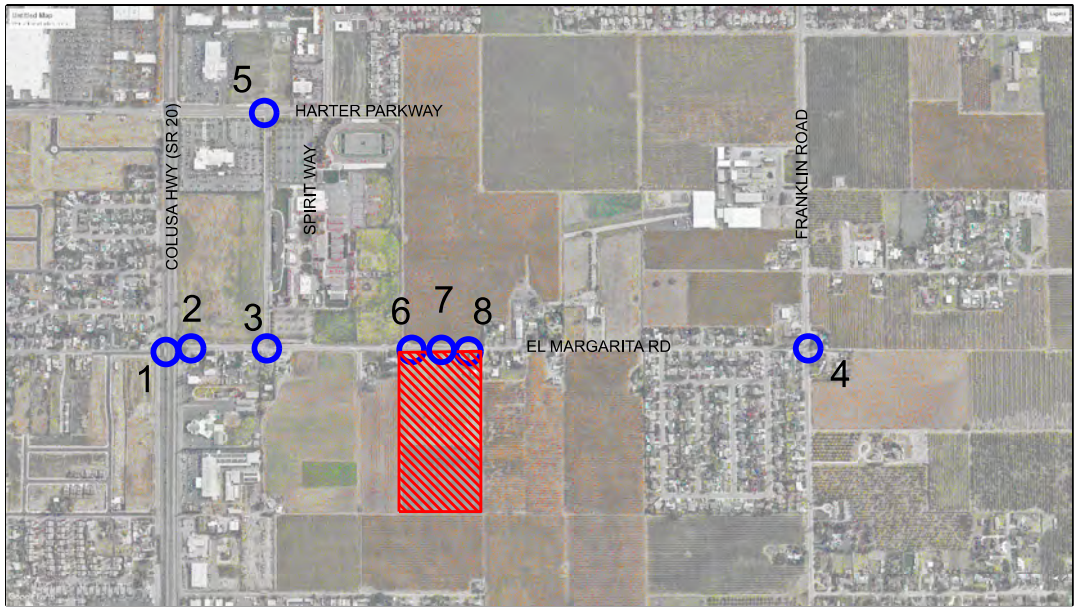
EXISTING PLUS PROJECT CONDITIONS

Intersection Levels of Service. Figure 5 presents the sum of existing traffic and project trips for The Ridge Estates project. Table 10 compares existing Levels of Service (LOS) at study intersections to "Existing Plus Project" conditions during the midweek a.m. and p.m. peak hours. The addition of project trips will result in two intersections operating at LOS E or LOS F conditions in the a.m. peak hour. These include the SR 20 at El Margarita Road intersection and the El Margarita Road at Spirit Way intersection. All intersections will operate at acceptable LOS conditions in the p.m. peak hour. The a.m. locations are generally the result of high school traffic arriving in a short time frame.

One intersection will continue to meet the peak hour signal warrant, the SR 20 / El Margarita Road intersection. This intersection meets the warrant for all time periods studied.

95th Percentile Queues. Table 11 presents the projected queues under Existing plus Project conditions for both peak periods. Northbound El Margarita Road traffic at Colusa Highway will continue to back up past Colusa Frontage Road and the westbound left turn along Spirit Way at El Margarita Road will continue to exceed the left turn lane. However, this queue will use the TWLTL without blocking right turn movements.





N

LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

EXISTING PLUS PROJECT VOLUMES
AM / PM PEAK HOUR

FIGURE 5

FLECKER ASSOCIATES
6050-01

TABLE 10
EXISTING PLUS PROJECT
PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Min LOS[1]	AM Peak Hour				PM Peak Hour				Meets Peak Hour Warrant
			Exist		Exist Plus The Ridge Estates		Exist		Exist Plus The Ridge Estates		
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	
1. Colusa Hwy (SR 20) / El Margarita Rd	NB Stop	D	24.2	C	**46.4**	**E**	14.2	B	18.0	C	Yes[2]
2. El Margarita Rd / S. Colusa Frontage Rd	EB Stop	D	24.5	C	28.0	D	11.4	B	12.3	B	No
3. El Margarita Rd / Spirit Way	WB Stop	D	**38.8**	**E**	**63.9**	**F**	10.1	B	10.9	B	No
4. El Margarita Rd / Franklin Rd	SB Stop	D	25.1	D	29.3	D	14.5	B	15.5	C	No
5. Harter Parkway / Spirit Way	AWS	D	28.5	D	32.8	D	8.7	A	8.9	A	No
6. El Margarita Rd / Balkowitsch Dr	EB Stop	D	-	-	12.2	B	-	-	10.2	B	No
7. El Margarita Rd / Escalante Dr	EB Stop	D	-	-	9.7	A	-	-	9.3	A	No
8. El Margarita Rd / FlorencIo Dr	EB Stop	D	-	-	11.2	B	-	-	10.2	B	No

Note: worst movement shown in LOS
[1] Minimum LOS established by the City of Yuba City
[2] meets peak hour warrant under No Project and Plus Project conditions, both time periods
Bold indicates LOS exceeds City thresholds

TABLE 11
EXISTING PLUS PROJECT
PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS

Intersection	Lane	Storage (feet)	AM Peak Hr		PM Peak Hr	
			Exist	Exist Plus Project	Exist	Exist Plus Project
			95th % Queue (feet)	95th % Queue (feet)	95th % Queue (feet)	95th % Queue (feet)
1. Colusa Hwy (SR 20) /	WB left	200	30	33	<25	<25
El Margarita Rd	NB	90	90	**173**	30	48
2. El Margarita Rd /	EB	--	75[4]	85[4]	23[4]	28[4]
Colusa Frontage Rd	NB	--	8[1]	<25[1]	3[1]	<25
3. El Margarita Rd / Spirit Way	SB left	--	<25	<25	<25	<25
	WB left	260[2]	145	**203**	<25	<25
4. El Margarita Rd / Franklin Rd	SB	--	65	90	30	75
	EB	--	<25	<25	<25	<25
5. Harter Parkway / Spirit Way	NB left	100	**123**	**125**	<25	<25
	SB thru-right	300[2]	153	168	<25	<25
	EB left	500[3]	218	265	<25	<25
6. El Margarita Rd / Balkowitsch Dr	EB	---	---	<25	---	<25
	NB left	---	---	<25	---	<25
7. El Margarita Rd / Escalante Dr	EB Rt	---	---	<25	---	<25
8. El Margarita Rd / South D/W	EB	---	---	<25	---	25
	NB left	---	---	<25	---	<25

Bold indicates queue exceeds available storage
[1] continuation of queue from adjacent intersection
[2] length to adjacent intersection
[3] approach includes left turn lane (TWLTL) and shared left-right lane 500 feet to adjacent intersection – longest queue shown
[4] length a result of NB queue at adjacent intersection

ITERATIVE ASSESSMENT

As the SR 20 / El Margarita Road intersection is shown to decline to LOS E under Existing plus Project conditions an iterative assessment was conducted to determine how many units could be constructed before reaching unacceptable operations. An assessment was completed for only the a.m. peak hour as this period is the only one operating at an unacceptable LOS.

A percentage of the project development was used to determine the projected trips through the SR 20 / El Margarita Road intersection south to the project site. The resultant LOS was then calculated to determine whether the intersection will operate within the LOS threshold limit, LOS D. This process determined the approximate percentage of residential development that can be built before LOS E occurs. Iterations were completed to within 5% of successful and unsuccessful iterations. The analysis shows that 80 dwelling units can be constructed before LOS E occurs at any

of the intersections. Table 12 presents the trip generation at full buildout (139 DU'S) and with 80 DU's constructed. The total number of trips that can be generated before unacceptable LOS is reached is 56 a.m. peak hour trips.

TABLE 12
AM PEAK HOUR TRIP GENERATION RATES
THE RIDGE ESTATES

Land Use	Quantity / Unit	Trip Per Unit[1]			
		Daily	AM Peak Hour		
			Total	In	Out
Single Family Residential (LU 210)	139 DU 80 DU	9.43	0.70	26%	74%
Single Family Residential (LU 210)		(1,311) 754	(101) 56	(25) 14	(75) 42
Total		**(1,311) 754**	**(101) 56**	(25) 14	(75) 42

numbers may not equal due to rounding
[1] *ITE Trip Generation*, 11th Edition
(XX) YY - (139 DU) / 80 DU

A Level of Service (LOS) analysis and 95th percentile estimate was completed for the reduced trip generation. Table 13 presents a comparative LOS analysis for the two intersections while Table 14 presents the projected queues at the intersection. The intersection will operate with the northbound El Margarita Road approach at LOS D in the a.m. peak hour. This LOS result is within the acceptable LOS D threshold.

The projected queues along El Margarita Road will decrease to about 130 feet while the westbound Colusa Highway left turn lane will remain at 33 feet. At the El Margarita Road / Spirit Way intersection the southbound left turn lane queue will remain under 25 feet while the westbound left turn queue will decrease to about 88 feet.

TABLE 13 EXISTING PLUS PROJECT AM PEAK HOUR INTERSECTION LEVELS OF SERVICE THE RIDGE ESTATES – 80 DU'S						
Intersection	**Control**	**Min LOS[1]**	**Full Buildout (139 DU) AM Peak Hour**		**80 DU AM Peak Hour**	
			Average Delay (sec/veh)	**LOS**	**Average Delay (sec/veh)**	**LOS**
1. Colusa Hwy (SR 20) / El Margarita Rd	NB Stop	D	**46.4**	**E**	33.9	D
[1] minimum LOS established by the City of Yuba City. **Bold** indicates LOS exceeds City thresholds						

TABLE 14 EXISTING PLUS PROJECT PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS THE RIDGE ESTATES – 80 DU'S				
Intersection	**Lane**	**Storage (feet)**	**Full Buildout (139 DU) AM Peak Hour**	**80 DU AM Peak Hour**
			95th % Queue (feet)	**95th % Queue (feet)**
1. Colusa Hwy (SR 20) / El Margarita Rd	WB left	200	33	33
	NB	90	173	130

Site Circulation. The Ridge Estates project proposes to have three access intersections to provide direct access to each of the east-west streets in the subdivision. Each of the streets will have about a 225 feet separation with the center intersection, Escalante Drive, limited to right-in, right-out movements only. The proposed TWLTL will allow inbound and outbound vehicles to store while waiting to begin and end left turns. Two north-south internal streets are proposed, one midway across the subdivision and a second roadway at the west side of the subdivision connecting all three streets. The west roadway will also provide access into future development north and south of the project. The City has indicated that a Rectangular Rapid Flashing Beacon (RRFB) with median island should be installed at the El Margarita Road / Balkowitsch Drive intersection to facilitate pedestrian and bicycle access to River Valley High School.

CUMULATIVE CONDITIONS

Long Term Cumulative Conditions

Basis for Long Term Projections. The City of Yuba City's Traffic Impact Fee Update Traffic Circulation / Operational Analysis was the source of long-term traffic volumes for this analysis. Year 2035 traffic forecasts were based on the most recent Yuba City traffic model 'Market Absorption' scenario. Peak hour traffic volumes from the travel model were used to generate growth factors. These growth factors were applied to existing peak hour intersection turning movement traffic volumes. The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) Report 765, *Analytical Travel Forecasting Approaches for Project-Level Planning and Design*. The NCHRP 765 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes. The peak hour volumes were adjusted to reflect the background, non-school related growth.

The following scenarios were evaluated:

- Cumulative Baseline – This scenario assumes development based on the current traffic model and includes the Calvary Christian Church project proposed on the east side of El Margarita Road, the Milner Gas Station project on the west side of El Margarita Road north of the project and the Dean Property north of the project. The projected trip generation for the three projects can be found in the appendix.

- Cumulative plus The Ridge Estates - This scenario assumes development based on the Cumulative Baseline conditions described above plus The Ridge Estates.

Circulation System Assumptions. The traffic volume forecasts made for this analysis include those city-wide circulation system improvements incorporated into the City's updated General Plan traffic model and CIP.

SR 20, from Civic Center Blvd east, is assumed to be widened to 6 lanes, and is assumed to remain as a 4-lane roadway in the area of the project. Harter Parkway is assumed to be extended northerly to Pease Road and southerly from its current terminus at Lassen Avenue. The roadway is projected to be four lanes from Lincoln Road in the south to Butte House Road to the north.

North of Butte House Road and south of Lincoln Road, Harter Parkway will be two lanes. As part of the General Plan Franklin Road will be upgraded to a four-lane major arterial road while El Margarita Road will be upgraded to a two-lane minor arterial road. A traffic signal at the SR 20 / El Margarita Road intersection is in the City's fee program and is assumed installed with left and right turn lanes along El Margarita Road. The traffic model identifies development along the east side of Harter Parkway at Spirit Way, and it was assumed that the fourth leg of the intersection would be constructed.

Franklin Road is identified to be widened to a four-lane roadway with left turn lanes at intersections. It is assumed that TWLTLs will be provided opposite the left turn lanes. This will allow minor street traffic to complete left turns onto Franklin Road using two-stage turns. In addition, project frontage improvements along El Margarita Road near Colusa Frontage Road are assumed to include the widening of the roadway to accommodate a TWLTL and bike lanes in both directions.

Cumulative No Project Conditions

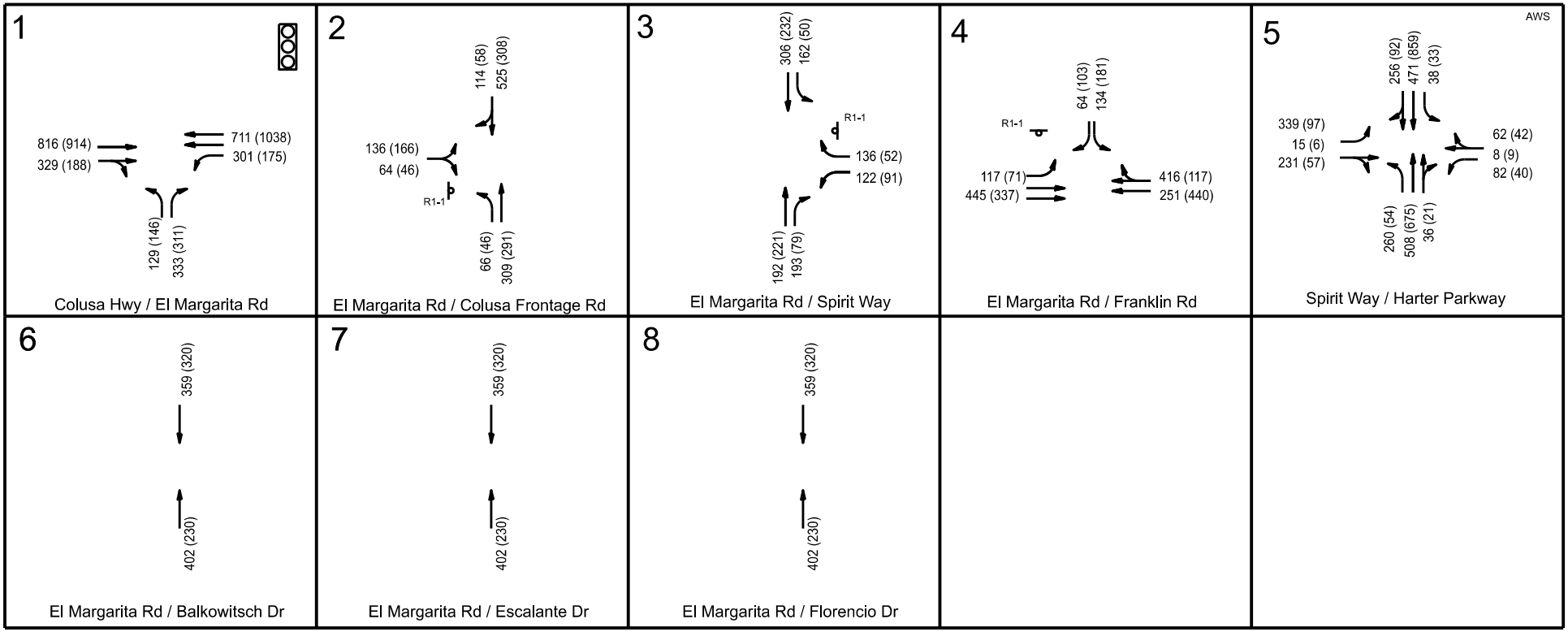
Levels of Service. Peak hour intersection turning movements were developed for the No Project conditions and are shown in Figure 6 for each of the study intersections. Table 15 identifies peak hour LOS under future conditions. Two intersections are projected to operate at LOS that exceed the identified minimum standard:

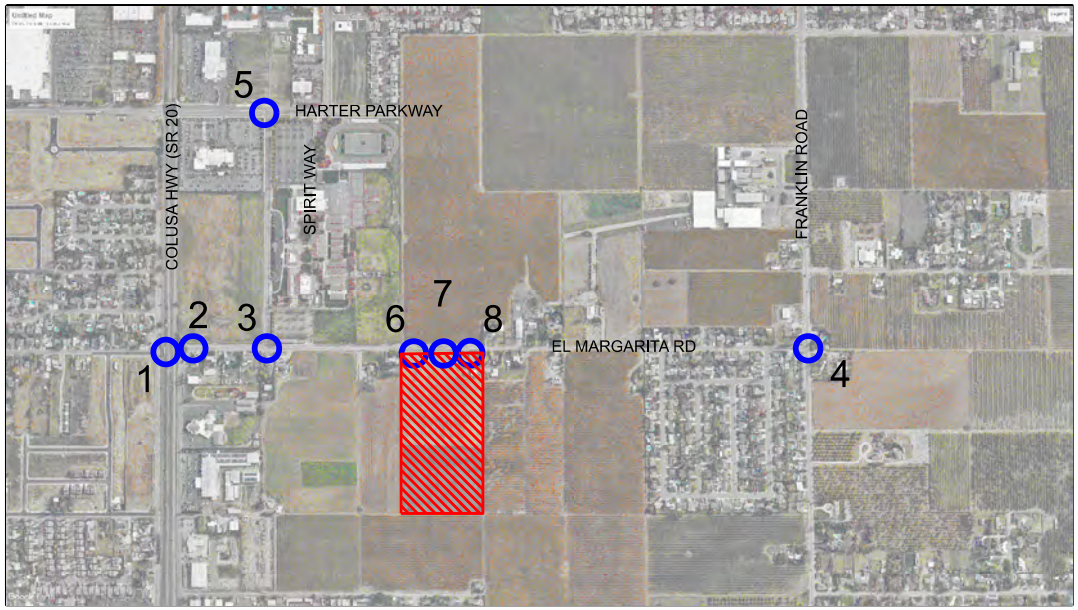
- El Margarita Road / S. Colusa Frontage Road: LOS F in the a.m. and p.m. peak hours
- Harter Parkway / Spirit Way: LOS F in the a.m. and p.m. peak hours

Conditions at the El Margarita Road / S. Colusa Road intersection relate to the lack of separation between this intersection and the adjacent SR 20 / El Margarita Road intersection. As the intersection exhibits poor level of service during the a.m. and p.m. peak periods this appears to be a result of the background growth. The intersection will meet the peak hour signal warrant in the a.m. peak hour. No improvements are planned at this location.

The Harter Parkway / Spirit Way intersection will decline to LOS F conditions in the a.m. and p.m. peak hour periods. The intersection will meet the peak hour warrant during the a.m. and p.m. peak hours.

95th Percentile Queues. Table 16 describes the projected queues under Cumulative traffic conditions. SR 20 / El Margarita Road intersection will be signalized with queues lengthening in the westbound left turn queue along SR 20 projected to reach 395 feet while the northbound right turn lane along El Margarita Road will extend to 370 feet. The queues at the Harter Parkway / Spirit Way intersection are projected to be 718 feet in the southbound shared through-right lane and 283 feet in the northbound left turn lane. These queues all occur in the a.m. peak hour.





N

LEGEND

XX - AM PEAK HOUR
(XX) - PM PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

CUMULATIVE VOLUMES
AM / PM PEAK HOURS

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6050-01

FIGURE 6

TABLE 15
CUMULATIVE PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Min LOS[1]	Cumulative AM		Cumulative plus Project AM		Cumulative PM		Cumulative plus Project PM		Meets Peak Hour Warrant
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	
1. Colusa Hwy (SR 20) / El Margarita Rd	Signal	D	37.8	D	42.4	D	15.9	B	17.1	B	N/A
2. El Margarita Rd / S. Colusa Frontage Rd	EB Stop	D	**286.4**	**F**	**328.2**	**F**	**51.4**	**F**	**66.3**	**F**	Yes[2]
3. El Margarita Rd / Spirit Way	WB Stop	D	26.5	D	30.6	D	12.6	B	13.6	B	No
4. El Margarita Rd / Franklin Rd	SB Stop	D	21.9	C	24.2	C	19.4	C	21.5	C	Yes[3]
5. Spirit Way / Harter Parkway	AWS	D	**198.0**	**F**	**206.2**	**F**	**100.6**	**F**	**104.8**	**F**	Yes[4]
6. El Margarita Rd / Balkowitsch Dr	EB Stop	D	---	---	12.5	B	---	---	11.7	B	No
7. El Margarita Rd / Escalante Dr	EB Stop	D	---	---	12.5	B	---	---	11.7	B	No
8. El Margarita Rd / Florencio Dr	EB Stop	D	---	---	12.4	B	---	---	11.5	B	No

Note: worst movement shown in LOS
[1] Minimum LOS established by the City of Yuba City
[2] meets peak hour warrant in AM peak hour in both Cumulative and Cumulative Plus Project conditions
[3] meets peak hour warrant in AM and PM peak hours in Cumulative Plus Project conditions
[4] meets peak hour warrant in AM and PM peak hours in both Cumulative and Cumulative Plus Project conditions
Bold indicates LOS exceeds City thresholds
N/A – not applicable

TABLE 16
CUMULATIVE PEAK HOUR INTERSECTION 95th PERCENTILE QUEUE LENGTHS

Intersection	Lane	Storage (feet)	95th % Queue (feet)			
			Cumulative AM	Cumulative + Project AM	Cumulative PM	Cumulative + Project PM
1. Colusa Hwy (SR 20) / El Margarita Rd	WB left	200	**395**	**435**	113	135
	NB left	90	**133**	**155**	75	88
	NB right	90	**370**	**425**	160	183
2. El Margarita Rd / S. Colusa Frontage Rd	EB	--	418[1]	443[1]	175[1]	205[1]
	NB	--	280[6]	335[6]	70[6]	77[6]
3. El Margarita Rd / Spirit Way	SB left	150	<25	<25	<25	<25
	WB left	260[2]	103	120	<25	25
4. El Margarita Rd / Franklin Rd	SB left	--	63	80	70	85
	SB right	100[4]	<25	<25	<25	<25
	EB left	150[4]	<25	<25	<25	<25
5. Harter Parkway / Spirit Way	NB left	100	**283**	**280**	<25	<25
	SB thru-right	300[2]	**718**	**730**	243	280
	EB left	500[3]	540	590	33	38
	WB left	200[4]	45	45	<25	<25
	SB left	[5]	<25	<25	<25	<25
El Margarita Rd / Balkowitsch Dr	EB	---	---	<25	---	<25
El Margarita Rd / Escalante Dr	EB	---	---	<25	---	<25
El Margarita Rd / Florencio Dr	EB	---	---	<25	---	25

Bold indicates queue exceeds available storage

[1] continuation of queue from adjacent intersection

[2] length to adjacent intersection

[3] approach includes left turn lane (TWLTL) and shared left-right lane 500 feet to adjacent intersection – longest queue shown

[4] assumed

[5] TWLTL

[6] length a result of NB queue at adjacent intersection

Cumulative Plus Project Conditions

Levels of Service. The Ridge Estates project traffic was added to the Cumulative Base peak hour volumes. As the trip distribution is expected to change Figure 7 presents the modified project related trips while Figure 8 illustrates the Cumulative plus Project traffic conditions at each of the study intersections. The project frontage improvements along El Margarita Road are assumed to include the widening of the roadway to accommodate a TWLTL and bike lanes in both directions. Table 15 identifies peak hour LOS under future conditions. Two intersections are projected to operate at LOS that exceed the identified minimum standard as shown below.

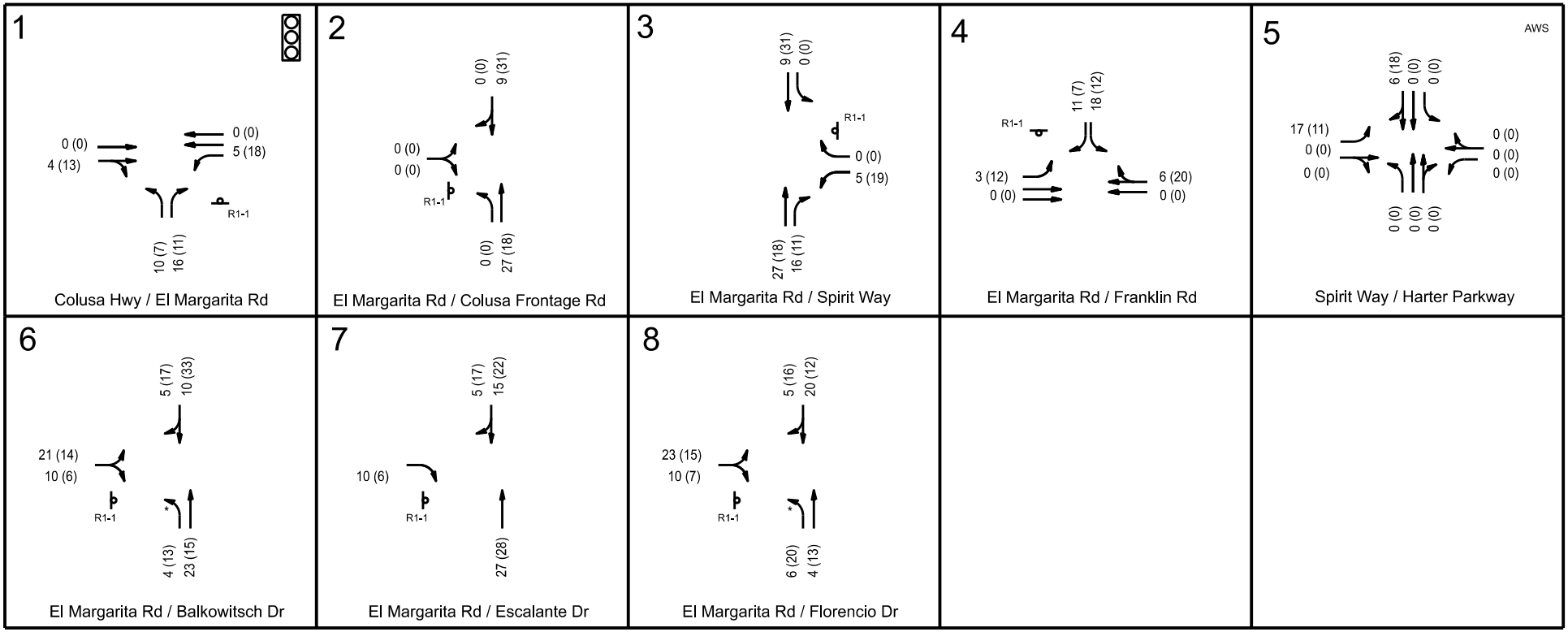
- El Margarita Road / S. Colusa Frontage Road: LOS F in the a.m. and p.m. peak hours
- Harter Parkway / Spirit Way: LOS F in the a.m. and p.m. peak hours

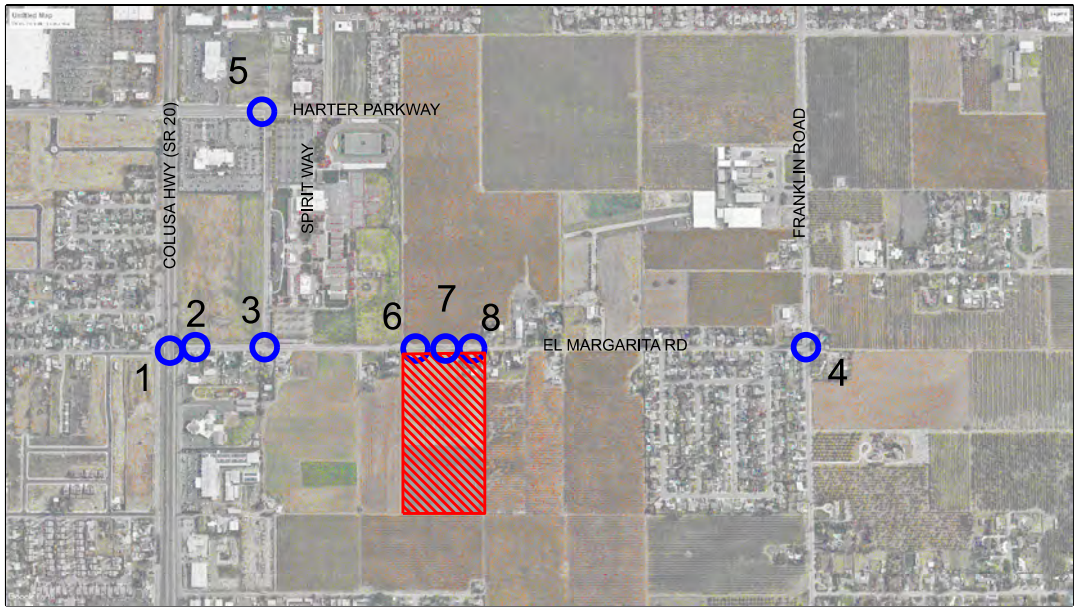
Conditions at the El Margarita Road / S. Colusa Road intersection will continue to relate to the lack of separation between this intersection and the adjacent SR 20 / El Margarita Road intersection. The intersection will meet the peak hour signal warrant in the a.m. peak hour. No improvements are planned at this location.

The Harter Parkway / Spirit Way intersection will decline to LOS F conditions in the a.m. and p.m. peak hour periods. The intersection will meet the peak hour warrant during the a.m. and p.m. peak hours.

The El Margarita Road / Franklin Road intersection will meet the peak hour warrant in both a.m. and p.m. peak hours; however, the intersection will operate at LOS C conditions. The meeting of a signal warrant does not necessarily indicate the need for a traffic signal as the intersection will operate acceptably.

95th Percentile Queues. Table 16 describes the projected queues under Cumulative plus The Ridge Estates traffic conditions. The westbound left turn queue along SR 20 is projected to reach 435 feet while the northbound right turn lane along El Margarita Road will extend to 425 feet. Both queues occur in the a.m. peak hour. The queues at the Harter Parkway / Spirit Way intersection are projected to be 730 feet in the southbound shared through-right lane and 280 feet in the northbound left turn lane. These queues all occur in the a.m. peak hour.





N

LEGEND

<XX> - MIDDAY PEAK HOUR
[XX]- SUNDAY PEAK HOUR

SIGNAL

R1-1 STOP SIGN

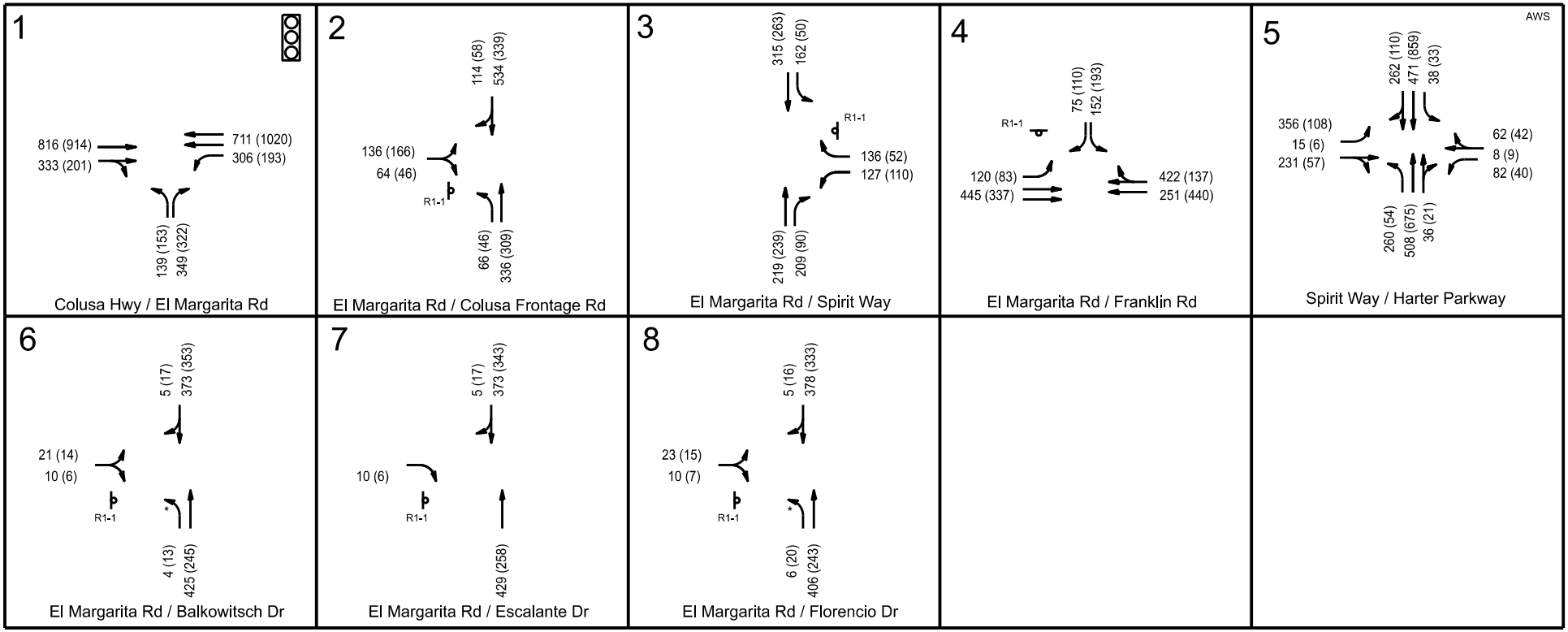
AWS ALL WAY STOP

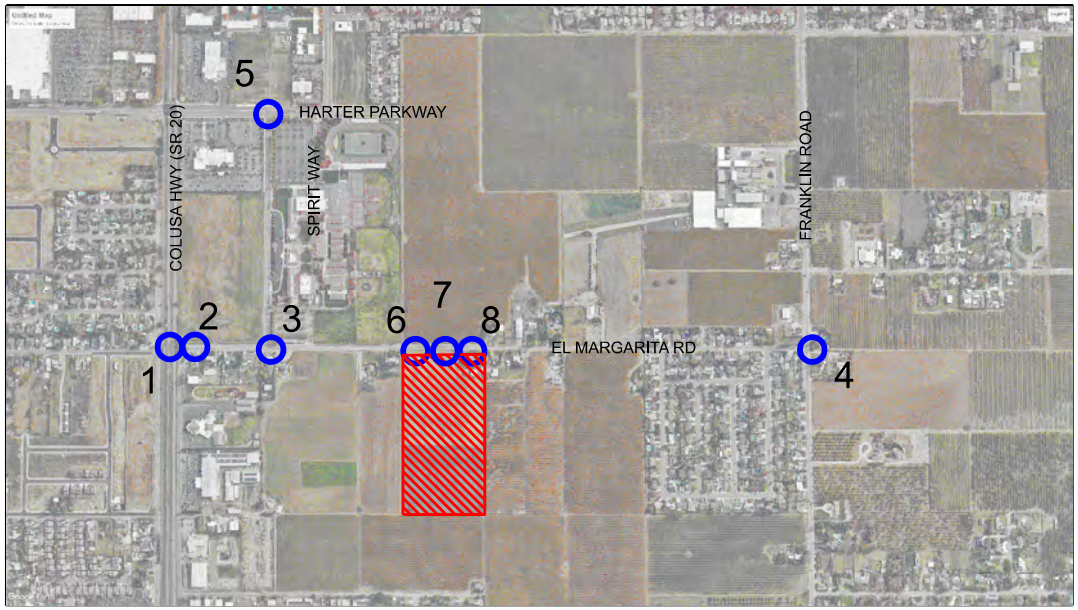
* TWO WAY LEFT TURN LANE

THE RIDGE ESTATES PROJECT VOLUMES
AM / PM PEAK HOUR (CUMULATIVE)

FIGURE 7

FLECKER ASSOCIATES
6050-01





N

LEGEND

<XX> - MIDDAY PEAK HOUR
[XX]- SUNDAY PEAK HOUR

SIGNAL

R1-1 STOP SIGN

AWS ALL WAY STOP

* TWO WAY LEFT TURN LANE

CUMULATIVE PLUS PROJECT VOLUMES
AM / PM PEAK HOUR

FIGURE 8

FLECKER ASSOCIATES

6050-01

FINDINGS / RECOMMENDATIONS/ IMPROVEMENTS

The preceding analysis has identified project impacts that may occur without identifying any recommendations or improvements. The text that follows identifies a strategy for recommendations to the 'No Project' conditions or improvements to the 'Plus Project' conditions.

Existing Conditions

Recommendations. All intersections except the El Margarita Road / Spirit Way intersection currently operate within agency thresholds, at LOS D or better. The El Margarita Road / Spirit Way intersection operates at LOS E in the a.m. peak hour due to the adjacent high school traffic patterns. Due to the operating level being short term prior to school no improvements are recommended. The SR 20 / El Margarita Road intersection operates at acceptable LOS C but meets the peak hour signal warrant for both a.m. and p.m. peak hours. The SR 20 / El Margarita Road intersection is in the City's fee program for signalization. If signalized, the intersection would operate at LOS B. Queues in the westbound left turn lane would be 125 feet and 135 feet in the northbound lane. Table A-1 provides the LOS and queues after implementing the suggested improvement.

Transportation Effects for Existing Conditions plus The Ridge Estates

Improvements. Under Existing plus Project conditions, two intersections will operate below City LOS thresholds. These include the SR 20 / El Margarita Road intersection and El Margarita Road at Spirit Way.

The SR 20 / El Margarita Road intersection and El Margarita Road / Spirit Way intersection will operate below LOS D during the a.m. peak period. These operating levels are based on the morning school traffic volumes and the peak hour factors associated with school traffic. The SR 20 / El Margarita Road intersection will continue to meet the peak hour warrant in both peak periods. The level of service exceeds the City threshold for one hour of the day and no recommendations are noted for either intersection. However, if the SR 20 / El Margarita Road intersection is signalized, the intersection would operate at LOS B. Queues in the westbound left turn lane would be 130 feet and 175 feet in the northbound lane. Likewise, as the El Margarita Road / Spirit Way meets the peak hour warrant for one hour of the day, prior to the beginning of school, installation of all-way stop control would improve the intersection to LOS C. The longest queue would occur along the northbound approach with a queue of 255 feet. Table A-1 provides the LOS and queues after implementing the suggested improvement.

The following recommendations are made:

- The project shall pay their fair share of Yuba City traffic impact fees (TIF). This will include fees paid toward signalization of the SR 20 / El Margarita Road intersection. Using the Caltrans fair share methodology, the fair share of this improvement is about 2.9% of the total cost.

- The project shall complete widening of El Margarita Road along the project frontage. The improvements shall include ½ width improvements including construction of pedestrian and bicycle facilities.

- The project could construct 80 dwelling units before the SR 20 / El Margarita Road intersection operates at an unacceptable LOS in the a.m. peak hour; the intersection will operate at acceptable LOS under full buildout of the project during the p.m. peak hour.

- After 80 DU's are constructed full buildout could occur were the SR 20 / El Margarita Road intersection to allow only right-only movements onto eastbound SR 20. With this recommendation, the intersection would operate with a delay of 17.0 seconds per vehicle (spv), LOS C. The northbound queue would be reduced to 68 feet and motorists heading west would make a U-turn at Harter Parkway.

- The project shall install stop signs along El Margarita Road to create an all-way stop. The intersection will operate with a total delay of 23.4 spv at LOS C. The longest queue will occur along the northbound approach with a queue of 255 feet.

Cumulative Conditions

Recommendations. Under Cumulative conditions two intersections will operate below the City LOS threshold. These include El Margarita Road at S. Colusa Frontage Road and Harter Parkway at Spirit Way. The El Margarita Road / South Colusa Frontage Road intersection will meet the peak hour warrant in the a.m. peak hour while the Harter Parkway / Spirit Way intersection will meet the peak hour warrant in both a.m. and p.m. peak periods.

The westbound left turn lane along SR 20 at El Margarita Road will need to be lengthened to 395 feet to accommodate the projected turning queue. The proposed traffic signal at SR 20 will also impact queuing with the northbound approach at SR 20 being "in red" for the majority of the signal cycle. Queues will also develop along S. Colusa Frontage Road as a result of vehicles not being able to turn onto northbound El Margarita Road.

The proximity of S. Colusa Frontage Road to SR 20 presents operational issues at the adjacent SR 20 / El Margarita Road intersection. The City and/or Caltrans should consider whether improvements at these two intersections should be undertaken together to improve conditions. Incorporating these elements into the General Plan / Capital Improvement Program would be needed.

The Harter Road / Spirit Way intersection will operate at LOS F conditions in the a.m. and p.m. peak hours and meet the peak hour warrant in the a.m. peak hour. With signalization, the intersection will operate at LOS C or better during these peak periods. Without signalization the queues in the northbound left turn lane and southbound shared through-right lane will exceed available lanes or extend beyond the adjacent driveways. Under a signalized condition the northbound queue will shorten to 250 feet. The existing turn lane can be extended to about 250 feet without impeding the back-to-back southbound left turn lane at Lassen Blvd. The southbound shared through-right lane queue will shorten to about 365 feet while the eastbound left turn lane will shorten to about 335 feet. Table A-1 provides the LOS and queues after implementing the suggested improvement.

Economic and Planning Solutions (EPS) has completed an Administrative Draft (March 2025) of the City's *Roadway Facilities Development Impact Fee Nexus Study* to establish and implement the Roadway Fee Program. While it does not appear that the study provided an analysis at the intersection level the Administrative Draft notes that all improvements along Harter Road between SR 20 and Redhaven Street have been completed.

It is recommended that signalization of the Harter Parkway / Spirit Way intersection be added to the AB 1600 project list for inclusion in the City's Traffic Impact Fee (TIF) program. All subsequent projects would then then pay their fair share of TIF fees to signalize the intersection.

Transportation Effects for Cumulative Plus Project Conditions

Improvements. Under Cumulative plus Project conditions two intersections will operate below the City LOS threshold. These include El Margarita Road at S. Colusa Frontage Road and Harter Parkway at Spirit Way. The El Margarita Road / South Colusa Frontage Road intersection will meet the peak hour warrant in the a.m. peak hour. The El Margarita Road / Franklin Road intersection will meet the peak hour warrant in both a.m. and p.m. peak hours while the Harter Parkway / Spirit Way intersection will meet the peak hour warrant in both a.m. and p.m. peak periods.

The LOS condition at the El Margarita Road / S. Colusa Frontage Road intersection will be exacerbated with The Ridge Estates project traffic added to the intersection, and the queues along the eastbound and northbound approaches will lengthen. As previously noted, the

proximity of S. Colusa Frontage Road to SR 20 presents operational issues at the adjacent SR 20 / El Margarita Road intersection. The City and/or Caltrans should consider whether improvements at these two intersections should be undertaken together to improve conditions. Incorporating these elements into the General Plan / Capital Improvement Program would be needed. With the project, the westbound left turn lane along SR 20 at El Margarita Road will need to be lengthened to 435 feet to accommodate the projected turning queue.

The El Margarita Road / Franklin Road intersection, while meeting the peak hour warrant. The meeting of a signal warrant does not necessarily indicate the need for a traffic signal as the intersection will operate at acceptable LOS C conditions in both peak periods.

The Harter Road / Spirit Way intersection will operate at LOS F conditions in the a.m. and p.m. peak hours and meet the peak hour warrant during both peak hours. Signalization would improve the operation of the intersection to LOS D or better during these peak periods. The queues in the northbound left turn lane and southbound shared through-right lane were previously identified to exceed available lanes or extend beyond the adjacent driveways. With the intersection signalized, the northbound queues will continue to exceed the existing turn lane length. The projected queue will be longest during the a.m. peak hour with a projected queue of about 258 feet. The existing turn lane can be extended to about 250 feet without impeding the back-to-back southbound left turn lane at Lassen Blvd; however, the additional 8 feet of queue is likely to be contained within the left turn taper. The southbound shared through-right lane queue will shorten to about 395 feet while the eastbound left turn lane will shorten to about 363 feet. Table A-1 provides the LOS and queues after implementing the suggested improvement.

As noted in the *Cumulative Conditions Recommendations* EPS has prepared an Administrative Draft for the City's Roadway Facilities Development. The analysis currently indicates that no additional improvements along Harter Parkway between SR 20 and Redhaven Street are necessary. However, as noted in this section, it is proposed that the Harter Parkway / Spirit Way intersection be signalized as part of the AB 1600 project list. The Ridge Estates should then pay its TIF fees. Otherwise, the project should pay its fair share of signalization and turn lane improvements. Using the Caltrans fair share methodology, this would be about 2.0% of the cost.

TABLE A FINDINGS / RECOMMENDATIONS / IMPROVEMENTS LOS / QUEUES					
Intersection	**Recommendations / Improvements**	**Existing**	**Existing plus Project**	**Cumulative**	**Cumulative plus Project**
SR 20 / El Margarita Rd	Install Signal	LOS B / 16.0 sec (AM) WB Left – 125' NB – 135'	LOS B / 17.2 sec (AM) WB Left – 130' NB – 175'	Lengthen WB left lane to 395'	Lengthen WB left lane to 435'
	NB Right Turn Only [1]	---	LOS C – 17.0 sec NB Right – 68'	---	---
El Margarita Rd / Spirit Way	Install all-way stop[2]	---	LOS C – 23.4 sec NB Thru – 255' SB Left – 60' SB Thru – 75' WB Right – 40' WB Left - 43'	---	---
SR 20 / S. Colusa Frontage Rd	Unknown	---	---	[3]	[3]
Harter Rd / Spirit Way	Install Signal; Add to AB 1600 program	---	---	LOS D / 39.3 sec (AM) NB Left – 250' SB Th-Rt – 365' EB Left – 335' LOS B / 12.8 sec (PM) NB Left – <25' SB Th-Rt – 153' EB Left – 40'	LOS D / 42.5 sec (AM) NB Left – 258' SB Th-Rt – 395' EB Left – 363' LOS B / 13.0 sec (PM) NB Left – <25' SB Th-Rt – 160' EB Left – 45'

[1] allow construction of up to 80 dwelling units
[2]operates below LOS D for one hour during the day.
[3]further analysis by City / Caltrans needed to determine improvement due to proximity of SR 20 / El Margarita Road intersection

REFERENCES

1. Yuba City. *Yuba City General Plan.* April 2004.
2. Yuba City. *EL Margarita Master Plan Administrative Draft*, March, 2017
3. California Department of Transportation. *California Manual on Uniform Traffic Control Devices for Streets and Highways* – 2014 Edition, 2021 Addendum. Sacramento, CA
4. Caltrans *Highway Design Manual*, 2023
5. California Highway Patrol, *Statewide Integrated Traffic Records System (SWITRS)*. https://iswitrs.chp.ca.gov/reports/jsp/index.jsp
6. Transportation Research Board. *Highway Capacity Manual 7th Edition*. Washington, D.C.
7. Transportation Research Board. 2014. National Cooperative Highway Research Program (NCHRP) Report 765, *Analytical Travel Forecasting Approaches for Project-Level Planning and Design.* Washington, D.C.
8. California Department of Transportation. *Transportation Concept Report State Route 20*, District 3 March 2013

APPENDIX

Prepared by National Data & Surveying Services

El Margarita Rd & SR 20/Colusa Hwy

Peak Hour Turning Movement Count

ID: 24-070005-001
City: Yuba City

Day: Tuesday
Date: 1/9/2024

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NONE	NONE
03:30 PM - 04:30 PM	2:30 PM - 06:00 PM

CONTROL: 1-Way Stop(NB)

	AM	NOON	PM
TEV	1550	0	1676
PHF	0.82		0.83

SOUTHBOUND (El Margarita Rd)

	Left	Thru	Right	U-Turn	
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

EASTBOUND (SR 20/Colusa Hwy)

	Left	Thru	Right	
AM	483	0	648	
NOON	0	0	0	0
PM	0	0	0	0
AM	596	0	709	2
NOON	91	0	31	0

WESTBOUND (SR 20/Colusa Hwy)

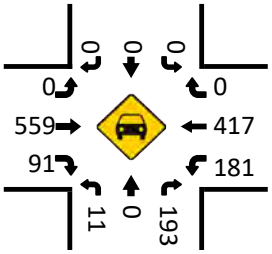
	Left	Thru	Right	
PM	0	0	0	0
NOON	629	0	472	2
AM	110	0	185	1
	0	0	1	0
	887	0	791	

NORTHBOUND (El Margarita Rd)

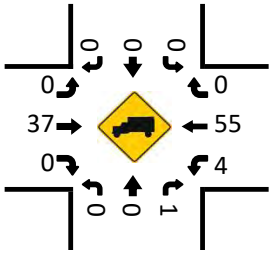
	Left	Thru	Right	U-Turn	
PM	141	0	19	0	178	PM
NOON	0	0	0	0	0	NOON
AM	276	0	11	0	194	AM

0 0 0 0 | 0 0 0 0 | 0 0 0.5 0.5

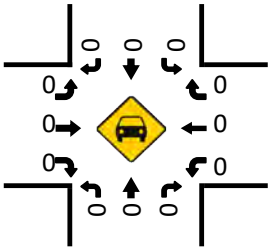
Cars (AM)



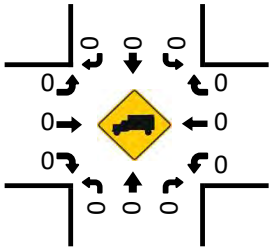
HT (AM)



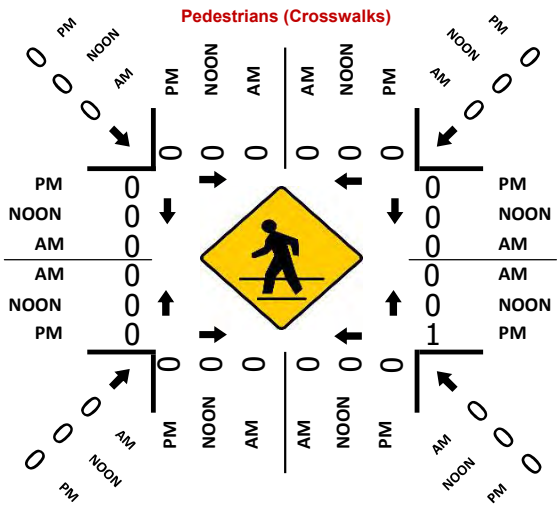
Cars (NOON)



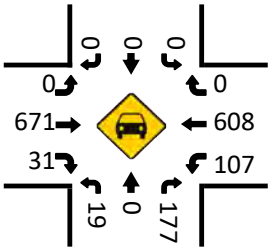
HT (NOON)



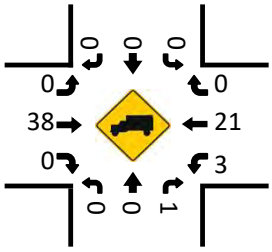
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: El Margarita Rd & SR 20/Colusa Hwy
City: Yuba City
Control: 1-Way Stop(NB)

Project ID: 24-070005-001
Date: 1/9/2024

Data - Total

NS/EW Streets:	El Margarita Rd				El Margarita Rd				SR 20/Colusa Hwy				SR 20/Colusa Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	9	0	0	0	0	0	0	109	0	0	14	94	0	0	226
7:15 AM	1	0	7	0	0	0	0	0	0	131	3	0	15	122	0	0	279
7:30 AM	1	0	10	0	0	0	0	0	0	148	6	0	16	108	0	0	289
7:45 AM	3	0	35	0	0	0	0	0	0	193	11	0	34	130	0	0	406
8:00 AM	2	0	53	0	0	0	0	0	0	140	29	0	67	91	0	0	382
8:15 AM	5	0	79	0	0	0	0	0	0	146	48	0	74	119	0	1	472
8:30 AM	1	0	27	0	0	0	0	0	0	117	3	0	10	132	0	0	290
8:45 AM	1	0	15	0	0	0	0	0	0	156	3	0	21	117	0	0	313
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	0	235	0	0	0	0	0	0	1140	103	0	251	913	0	1	2657
APPROACH %'s :	5.62%	0.00%	94.38%	0.00%					0.00%	91.71%	8.29%	0.00%	21.55%	78.37%	0.00%	0.09%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	11	0	194	0	0	0	0	0	0	596	91	0	185	472	0	1	1550
PEAK HR FACTOR :	0.550	0.000	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.772	0.474	0.000	0.625	0.894	0.000	0.250	0.821
	0.610								0.842				0.848				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0.5	0.5	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:30 PM	0	0	19	0	0	0	0	0	0	158	5	0	28	141	0	0	351
2:45 PM	1	0	40	0	0	0	0	0	0	170	7	0	31	137	0	0	386
3:00 PM	2	0	21	0	0	0	0	0	0	140	8	0	24	148	0	0	343
3:15 PM	0	0	23	0	0	0	0	0	0	179	16	0	33	125	0	0	376
3:30 PM	10	0	83	0	0	0	0	0	0	187	19	0	36	169	0	0	504
3:45 PM	6	0	43	0	0	0	0	0	0	170	8	0	24	155	0	0	406
4:00 PM	3	0	28	0	0	0	0	0	0	181	3	0	27	143	0	0	385
4:15 PM	0	0	24	0	0	0	0	0	0	171	1	0	23	162	0	0	381
4:30 PM	2	0	30	0	0	0	0	0	0	162	4	0	21	164	0	0	383
4:45 PM	0	0	23	0	0	0	0	0	0	161	4	0	25	173	0	0	386
5:00 PM	1	0	60	0	0	0	0	0	0	185	7	0	19	189	0	0	461
5:15 PM	1	0	24	0	0	0	0	0	0	137	5	0	22	169	0	0	358
5:30 PM	2	0	6	0	0	0	0	0	0	159	3	0	18	146	0	0	334
5:45 PM	0	0	11	0	0	0	0	0	0	131	0	0	15	144	0	0	301
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	28	0	435	0	0	0	0	0	0	2291	90	0	346	2165	0	0	5355
APPROACH %'s :	6.05%	0.00%	93.95%	0.00%					0.00%	96.22%	3.78%	0.00%	13.78%	86.22%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	19	0	178	0	0	0	0	0	0	709	31	0	110	629	0	0	1676
PEAK HR FACTOR :	0.475	0.000	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.948	0.408	0.000	0.764	0.930	0.000	0.000	0.831
	0.530								0.898				0.901				

Prepared by National Data & Surveying Services

El Margarita Rd & Colusa Rd

Peak Hour Turning Movement Count

ID: 24-070005-002
City: Yuba City

Day: Tuesday
Date: 1/9/2024

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NONE	NONE
03:15 PM - 04:15 PM	2:30 PM - 06:00 PM

SOUTHBOUND (El Margarita Rd)

AM	68	217	0	0	188	AM
NOON	0	0	0	0	0	NOON
PM	22	144	0	0	196	PM

EASTBOUND (Colusa Rd)

AM	NOON	PM	
123	0	62	
0	0	0	0
65	0	38	0
0	0	0	1
50	0	22	0

WESTBOUND (Colusa Rd)

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
			0

NORTHBOUND (El Margarita Rd)

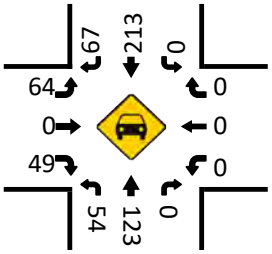
PM	166	0	40	158	0	PM
NOON	0	0	0	0	0	NOON
AM	268	1	55	123	0	AM

CONTROL

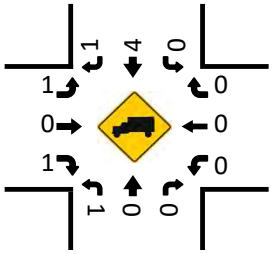
1-Way Stop(EB)

TEV	579 AM	0 NOON	424 PM
PHF	0.57		0.61

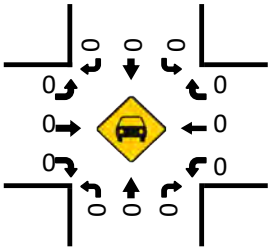
Cars (AM)



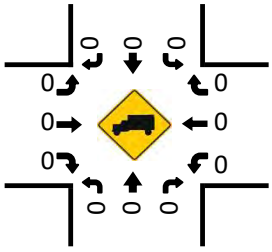
HT (AM)



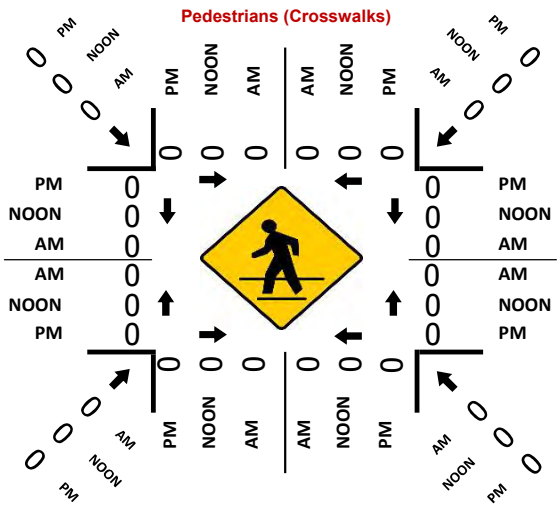
Cars (NOON)



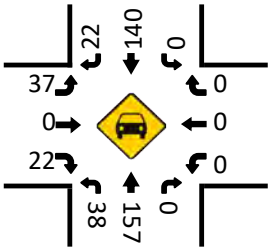
HT (NOON)



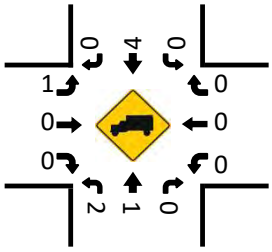
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: El Margarita Rd & Colusa Rd
City: Yuba City
Control: 1-Way Stop(EB)

Project ID: 24-070005-002
Date: 1/9/2024

Data - Total

NS/EW Streets:	El Margarita Rd				El Margarita Rd				Colusa Rd				Colusa Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	6	0	0	0	3	11	0	3	0	0	0	0	0	0	0	27
7:15 AM	3	7	0	0	0	8	10	0	1	0	2	0	0	0	0	0	31
7:30 AM	7	10	0	0	0	15	7	0	2	0	10	0	0	0	0	0	51
7:45 AM	6	23	0	0	0	30	13	0	14	0	8	0	0	0	0	0	94
8:00 AM	13	35	0	1	0	74	21	0	21	0	15	0	0	0	0	0	180
8:15 AM	29	55	0	0	0	98	27	0	28	0	17	0	0	0	0	0	254
8:30 AM	5	15	0	0	0	6	7	0	13	0	0	0	0	0	0	0	46
8:45 AM	4	12	0	0	0	15	8	0	5	0	4	0	0	0	0	0	48
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	71	163	0	1	0	249	104	0	87	0	56	0	0	0	0	0	731
APPROACH %'s :	30.21%	69.36%	0.00%	0.43%	0.00%	70.54%	29.46%	0.00%	60.84%	0.00%	39.16%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	55	123	0	1	0	217	68	0	65	0	50	0	0	0	0	0	579
PEAK HR FACTOR :	0.474	0.559	0.000	0.250	0.000	0.554	0.630	0.000	0.580	0.000	0.735	0.000	0.000	0.000	0.000	0.000	0.570
	0.533				0.570				0.639								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:30 PM	13	11	0	0	0	18	15	0	9	0	5	0	0	0	0	0	71
2:45 PM	5	19	0	0	0	27	11	0	23	0	10	0	0	0	0	0	95
3:00 PM	1	9	0	1	0	28	4	0	12	0	12	0	0	0	0	0	67
3:15 PM	4	14	0	0	0	45	4	0	9	0	6	0	0	0	0	0	82
3:30 PM	17	90	0	0	0	51	4	0	6	0	5	0	0	0	0	0	173
3:45 PM	14	39	0	0	0	24	8	0	8	0	6	0	0	0	0	0	99
4:00 PM	5	15	0	0	0	24	6	0	15	0	5	0	0	0	0	0	70
4:15 PM	3	18	0	0	0	18	6	0	6	0	10	0	0	0	0	0	61
4:30 PM	5	20	0	0	0	20	4	1	11	0	5	0	0	0	0	0	66
4:45 PM	4	17	0	0	0	21	8	0	6	0	6	0	0	0	0	0	62
5:00 PM	4	9	0	0	0	24	2	0	52	0	27	0	0	0	0	0	118
5:15 PM	5	22	0	0	0	26	1	0	3	0	5	0	0	0	0	0	62
5:30 PM	2	7	0	0	0	20	1	0	1	0	6	0	0	0	0	0	37
5:45 PM	2	10	0	0	0	14	1	0	1	0	4	0	0	0	0	0	32
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	84	300	0	1	0	360	75	1	162	0	112	0	0	0	0	0	1095
APPROACH %'s :	21.82%	77.92%	0.00%	0.26%	0.00%	82.57%	17.20%	0.23%	59.12%	0.00%	40.88%	0.00%					
PEAK HR :	03:15 PM - 04:15 PM																TOTAL
PEAK HR VOL :	40	158	0	0	0	144	22	0	38	0	22	0	0	0	0	0	424
PEAK HR FACTOR :	0.588	0.439	0.000	0.000	0.000	0.706	0.688	0.000	0.633	0.000	0.917	0.000	0.000	0.000	0.000	0.000	0.613
	0.463				0.755				0.750								

Prepared by National Data & Surveying Services

El Margarita Rd & Spirit Way

Peak Hour Turning Movement Count

ID: 24-070005-003
City: Yuba City

Day: Tuesday
Date: 1/9/2024

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	03:00 PM - 04:00 PM

COUNT PERIODS

AM	7:00 AM - 09:00 AM
NOON	NONE
PM	2:30 PM - 06:00 PM

SOUTHBOUND (El Margarita Rd)

AM	0	144	127	0	182	AM
NOON	0	0	0	0	0	NOON
PM	0	124	54	1	192	PM

EASTBOUND (Spirit Way)

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (Spirit Way)

PM	NOON	AM	
105	0	106	1
0	0	0	0
101	0	89	1
0	0	0	0
137	0	294	
PM	NOON	AM	

NORTHBOUND (El Margarita Rd)

PM	225	0	0	86	83	PM
NOON	0	0	0	0	0	NOON
AM	233	0	0	76	167	AM

CONTROL

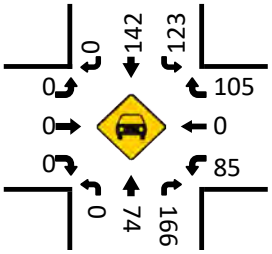
1-Way Stop(WB)

TEV	709 AM	0 NOON	554 PM
PHF	0.54		0.52

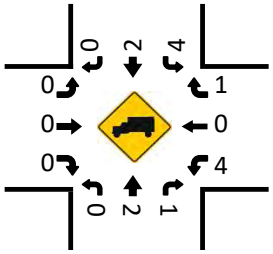
0 1 1 0

0 0 1 0

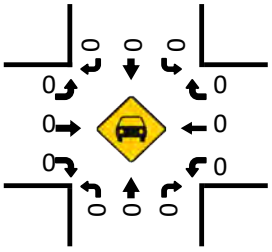
Cars (AM)



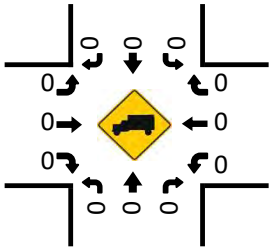
HT (AM)



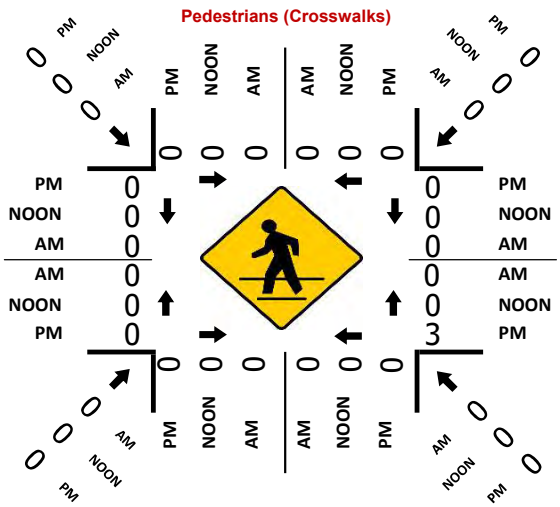
Cars (NOON)



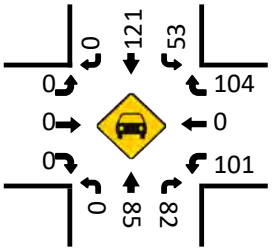
HT (NOON)



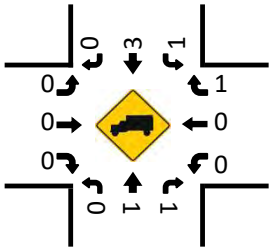
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: El Margarita Rd & Spirit Way
City: Yuba City
Control: 1-Way Stop(WB)

Project ID: 24-070005-003
Date: 1/9/2024

Data - Total

NS/EW Streets:	El Margarita Rd				El Margarita Rd				Spirit Way				Spirit Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	7	1	0	0	3	0	0	0	0	0	0	3	0	1	0	15
7:15 AM	0	11	6	0	2	8	0	0	0	0	0	0	4	0	0	0	31
7:30 AM	0	13	11	0	10	14	0	0	0	0	0	0	5	0	4	0	57
7:45 AM	0	20	30	0	19	20	0	0	0	0	0	0	13	0	8	0	110
8:00 AM	0	22	50	0	40	50	0	0	0	0	0	0	21	0	28	0	211
8:15 AM	0	21	76	0	58	60	0	0	0	0	0	0	50	0	66	0	331
8:30 AM	0	5	9	0	3	3	0	0	0	0	0	0	21	0	12	0	53
8:45 AM	0	13	12	0	3	16	0	0	0	0	0	0	7	0	3	0	54
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	112	195	0	135	174	0	0	0	0	0	0	124	0	122	0	862
APPROACH %'s :	0.00%	36.48%	63.52%	0.00%	43.69%	56.31%	0.00%	0.00%					50.41%	0.00%	49.59%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	76	167	0	127	144	0	0	0	0	0	0	89	0	106	0	709
PEAK HR FACTOR :	0.000	0.864	0.549	0.000	0.547	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.445	0.000	0.402	0.000	0.535
	0.626				0.574								0.420				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:30 PM	0	22	8	0	6	15	0	0	0	0	0	0	1	0	5	0	57
2:45 PM	0	19	5	1	11	26	0	0	0	0	0	0	11	0	3	0	76
3:00 PM	0	8	17	0	6	35	0	1	0	0	0	0	9	0	3	0	79
3:15 PM	0	19	23	0	18	31	0	0	0	0	0	0	14	0	3	0	108
3:30 PM	0	45	28	0	20	39	0	0	0	0	0	0	59	0	76	0	267
3:45 PM	0	14	15	0	10	19	0	0	0	0	0	0	19	0	23	0	100
4:00 PM	0	12	10	0	8	20	0	0	0	0	0	0	10	0	8	0	68
4:15 PM	0	18	7	0	4	23	0	0	0	0	0	0	7	0	4	0	63
4:30 PM	0	16	7	0	6	20	0	0	0	0	0	0	15	0	9	0	73
4:45 PM	0	17	6	0	4	21	0	0	0	0	0	0	10	0	3	0	61
5:00 PM	0	6	11	0	15	35	0	0	0	0	0	0	14	0	6	0	87
5:15 PM	0	20	12	0	4	24	0	0	0	0	0	0	14	0	6	0	80
5:30 PM	0	6	13	0	3	26	0	0	0	0	0	0	21	0	3	0	72
5:45 PM	0	10	10	0	3	13	0	0	0	0	0	0	4	0	2	0	42
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	232	172	1	118	347	0	1	0	0	0	0	208	0	154	0	1233
APPROACH %'s :	0.00%	57.28%	42.47%	0.25%	25.32%	74.46%	0.00%	0.21%					57.46%	0.00%	42.54%	0.00%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	0	86	83	0	54	124	0	1	0	0	0	0	101	0	105	0	554
PEAK HR FACTOR :	0.000	0.478	0.741	0.000	0.675	0.795	0.000	0.250	0.000	0.000	0.000	0.000	0.428	0.000	0.345	0.000	0.519
	0.579				0.758								0.381				

Prepared by National Data & Surveying Services

El Margarita Rd & Franklin Rd

Peak Hour Turning Movement Count

ID: 24-070005-004
City: Yuba City

Day: Tuesday
Date: 1/9/2024

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NONE	NONE
03:15 PM - 04:15 PM	2:30 PM - 06:00 PM

SOUTHBOUND (El Margarita Rd)

AM	31	0	111	0	383	AM
NOON	0	0	0	0	0	NOON
PM	53	0	148	0	190	PM

EASTBOUND (Franklin Rd)

AM	NOON	PM	
236	0	230	
0	0	0	0
37	0	25	0
243	0	240	1
0	0	0	0
AM	NOON	PM	

WESTBOUND (Franklin Rd)

PM	NOON	AM	
165	0	346	0
177	0	205	1
0	0	0	0
0	0	0	0
388	0	354	
PM	NOON	AM	

NORTHBOUND (El Margarita Rd)

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

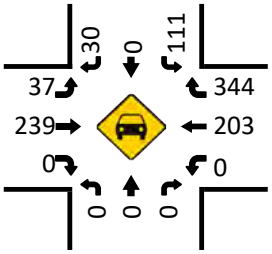
0.5 0.5 0 0 (SB turning movements)
0 0 0 0 (NB turning movements)

CONTROL

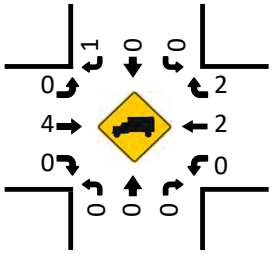
1-Way Stop(SB)

TEV	973 AM	0 NOON	808 PM
PHF	0.82		0.81

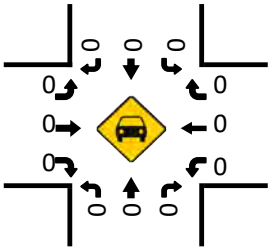
Cars (AM)



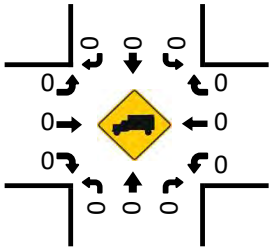
HT (AM)



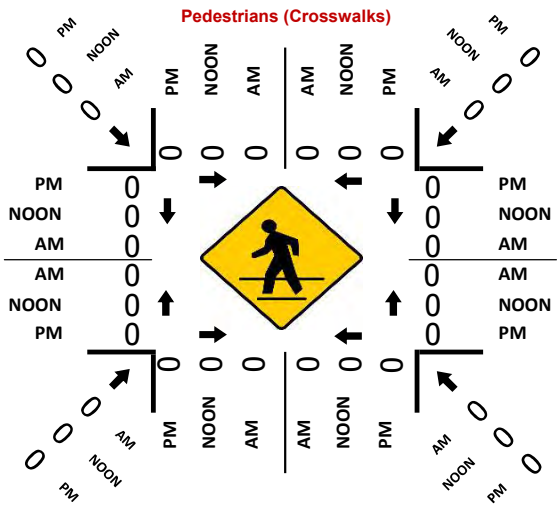
Cars (NOON)



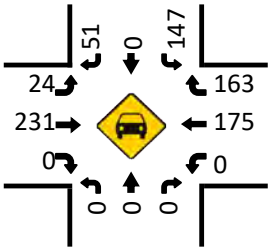
HT (NOON)



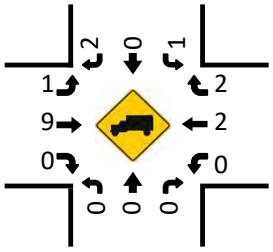
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: El Margarita Rd & Franklin Rd
City: Yuba City
Control: 1-Way Stop(SB)

Project ID: 24-070005-004
Date: 1/9/2024

Data - Total

NS/EW Streets:	El Margarita Rd				El Margarita Rd				Franklin Rd				Franklin Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0.5	0.5	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	5	0	5	0	4	22	0	0	0	30	10	0	76
7:15 AM	0	0	0	0	8	0	5	0	2	30	0	0	0	37	14	0	96
7:30 AM	0	0	0	0	12	0	3	0	6	37	0	0	0	63	26	0	147
7:45 AM	0	0	0	0	22	0	7	0	8	68	0	0	0	75	71	0	251
8:00 AM	0	0	0	0	28	0	8	0	15	71	0	0	0	42	115	0	279
8:15 AM	0	0	0	0	49	0	13	0	8	67	0	0	0	25	134	0	296
8:30 AM	0	0	0	0	34	0	4	0	4	37	0	0	0	25	11	0	115
8:45 AM	0	0	0	0	19	0	1	0	6	29	0	0	0	32	9	0	96
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	177	0	46	0	53	361	0	0	0	329	390	0	1356
APPROACH %'s :					79.37%	0.00%	20.63%	0.00%	12.80%	87.20%	0.00%	0.00%	0.00%	45.76%	54.24%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	111	0	31	0	37	243	0	0	0	205	346	0	973
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.566	0.000	0.596	0.000	0.617	0.856	0.000	0.000	0.000	0.683	0.646	0.000	0.822
					0.573				0.814				0.866				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0.5	0.5	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:30 PM	0	0	0	0	7	0	7	0	4	49	0	0	0	53	29	0	149
2:45 PM	0	0	0	0	19	0	11	0	9	60	0	0	0	37	17	0	153
3:00 PM	0	0	0	0	22	0	2	0	2	40	0	0	0	35	41	0	142
3:15 PM	0	0	0	0	10	0	7	0	7	59	0	0	0	36	64	0	183
3:30 PM	0	0	0	0	55	0	28	0	7	60	0	0	0	42	56	0	248
3:45 PM	0	0	0	0	64	0	9	0	6	57	0	0	0	49	24	0	209
4:00 PM	0	0	0	0	19	0	9	0	5	64	0	0	0	50	21	0	168
4:15 PM	0	0	0	0	25	0	4	0	7	65	0	0	0	48	22	0	171
4:30 PM	0	0	0	0	26	0	10	0	3	41	0	0	0	54	16	0	150
4:45 PM	0	0	0	0	18	0	7	0	11	47	0	0	0	52	15	0	150
5:00 PM	0	0	0	0	39	0	9	0	7	54	0	0	0	48	20	0	177
5:15 PM	0	0	0	0	25	0	4	0	6	57	0	0	0	42	24	0	158
5:30 PM	0	0	0	0	28	0	10	0	2	38	0	0	0	50	19	0	147
5:45 PM	0	0	0	0	12	0	4	0	7	40	0	0	0	34	22	0	119
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	369	0	121	0	83	731	0	0	0	630	390	0	2324
APPROACH %'s :					75.31%	0.00%	24.69%	0.00%	10.20%	89.80%	0.00%	0.00%	0.00%	61.76%	38.24%	0.00%	
PEAK HR :	03:15 PM - 04:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	148	0	53	0	25	240	0	0	0	177	165	0	808
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.578	0.000	0.473	0.000	0.893	0.938	0.000	0.000	0.000	0.885	0.645	0.000	0.815
					0.605				0.960				0.855				

Prepared by National Data & Surveying Services

Harter Pkwy & Spirit Way

Peak Hour Turning Movement Count

ID: 24-070005-005
City: Yuba City

Day: Tuesday
Date: 1/9/2024

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NONE	NONE
03:15 PM - 04:15 PM	2:30 PM - 06:00 PM

SOUTHBOUND (Harter Pkwy)

AM	157	220	0	0	379	AM
NOON	0	0	0	0	0	NOON
PM	86	175	0	3	408	PM
	0.5	1.5	1	0		

EASTBOUND (Spirit Way)

AM	NOON	PM	
312	0	172	
0	0	0	0
246	0	203	1.5
0	0	0	0
176	0	87	0.5
AM	NOON	PM	

WESTBOUND (Spirit Way)

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

CONTROL

3-Way Stop(NB/SB/EB)

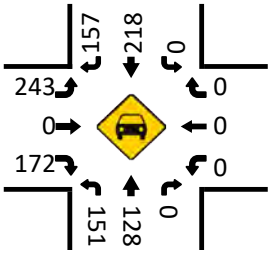
TEV	1128 AM	0 NOON	858 PM
PHF	0.68		0.70

0 1 1.5 0.5

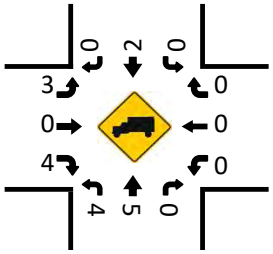
NORTHBOUND (Harter Pkwy)

PM	278	16	86	202	0 PM
NOON	0	0	0	0	0 NOON
AM	437	41	155	133	0 AM

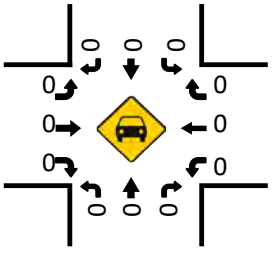
Cars (AM)



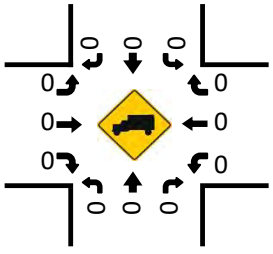
HT (AM)



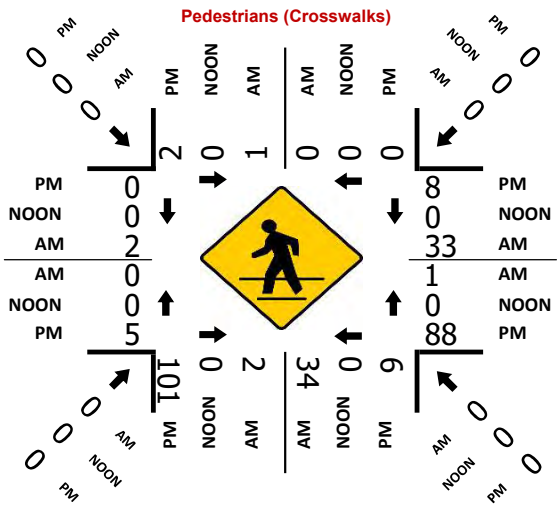
Cars (NOON)



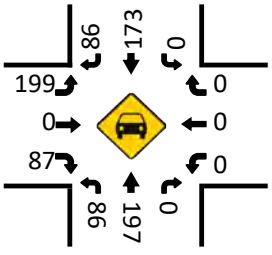
HT (NOON)



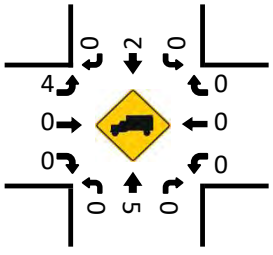
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Harter Pkwy & Spirit Way
City: Yuba City
Control: 3-Way Stop(NB/SB/EB)

Project ID: 24-070005-005
Date: 1/9/2024

Data - Total

NS/EW Streets:	Harter Pkwy				Harter Pkwy				Spirit Way				Spirit Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1.5	0.5	0	1	1.5	0.5	0	1.5	0	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	10	0	0	0	7	7	0	1	0	1	0	0	0	0	0	29
7:15 AM	4	13	0	0	0	14	5	0	2	0	5	0	0	0	0	0	43
7:30 AM	16	15	0	1	0	19	21	0	11	0	17	0	0	0	0	0	100
7:45 AM	26	39	0	4	0	49	39	0	43	0	33	0	0	0	0	0	233
8:00 AM	52	23	0	12	0	64	57	0	67	0	47	0	0	0	0	0	322
8:15 AM	56	41	0	23	0	89	49	0	97	0	60	0	0	0	0	0	415
8:30 AM	21	30	0	2	0	18	12	0	39	0	36	0	0	0	0	0	158
8:45 AM	7	18	0	0	0	16	5	0	4	0	8	1	0	0	0	0	59
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	185	189	0	42	0	276	195	0	264	0	207	1	0	0	0	0	1359
APPROACH %'s :	44.47%	45.43%	0.00%	10.10%	0.00%	58.60%	41.40%	0.00%	55.93%	0.00%	43.86%	0.21%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	155	133	0	41	0	220	157	0	246	0	176	0	0	0	0	0	1128
PEAK HR FACTOR :	0.692	0.811	0.000	0.446	0.000	0.618	0.689	0.000	0.634	0.000	0.733	0.000	0.000	0.000	0.000	0.000	0.680
	0.685				0.683				0.672								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1.5	0.5	0	1	1.5	0.5	0	1.5	0	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:30 PM	10	27	0	1	0	21	7	0	8	0	6	0	0	0	0	0	80
2:45 PM	15	24	0	3	0	32	20	0	6	0	11	0	0	0	0	0	111
3:00 PM	12	30	0	4	0	37	16	0	8	0	15	0	0	0	0	0	122
3:15 PM	34	20	0	5	0	55	30	1	4	0	8	0	0	0	0	0	157
3:30 PM	21	74	0	6	0	38	29	1	106	0	32	0	0	0	0	0	307
3:45 PM	19	68	0	3	0	42	18	1	70	0	35	0	0	0	0	0	256
4:00 PM	12	40	0	2	0	40	9	0	23	0	12	0	0	0	0	0	138
4:15 PM	7	40	0	1	0	31	6	0	11	0	11	0	0	0	0	0	107
4:30 PM	14	38	0	0	0	37	10	0	10	0	7	0	0	0	0	0	116
4:45 PM	9	46	0	1	0	45	5	0	10	0	13	0	0	0	0	0	129
5:00 PM	19	43	0	1	0	33	5	0	6	0	14	0	0	0	0	0	121
5:15 PM	9	41	0	0	0	27	15	0	10	0	6	0	0	0	0	0	108
5:30 PM	15	36	0	1	0	29	9	0	14	0	10	0	0	0	0	0	114
5:45 PM	4	28	0	1	0	31	9	0	7	0	8	0	0	0	0	0	88
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	200	555	0	29	0	498	188	3	293	0	188	0	0	0	0	0	1954
APPROACH %'s :	25.51%	70.79%	0.00%	3.70%	0.00%	72.28%	27.29%	0.44%	60.91%	0.00%	39.09%	0.00%					
PEAK HR :	03:15 PM - 04:15 PM																TOTAL
PEAK HR VOL :	86	202	0	16	0	175	86	3	203	0	87	0	0	0	0	0	858
PEAK HR FACTOR :	0.632	0.682	0.000	0.667	0.000	0.795	0.717	0.750	0.479	0.000	0.621	0.000	0.000	0.000	0.000	0.000	0.699
	0.752				0.767				0.525								

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	596	91	185	472	11	194
Future Vol, veh/h	596	91	185	472	11	194
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	6	2	5	12	2	2
Mvmt Flow	727	111	226	576	13	237

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	838	0	1521	419
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	739	-
Critical Hdwy	-	-	4.2	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.25	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	773	-	109	583
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	433	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	773	-	77	583
Mov Cap-2 Maneuver	-	-	-	-	77	-
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	307	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.26	24.21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	432	-	-	773	-
HCM Lane V/C Ratio	0.579	-	-	0.292	-
HCM Ctrl Dly (s/v)	24.2	-	-	11.6	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	3.6	-	-	1.2	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	50	56	123	217	68
Future Vol, veh/h	65	50	56	123	217	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	88	98	216	381	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	853	440	500	0	-	0
Stage 1	440	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	330	617	1064	-	-	-
Stage 1	649	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	617	1064	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	24.53	2.73	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	563	-	382	-	-
HCM Lane V/C Ratio	0.092	-	0.529	-	-
HCM Ctrl Dly (s/v)	8.7	0	24.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	3	-	-

Intersection	
Int Delay, s/veh	12.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	89	106	76	167	127	144
Future Vol, veh/h	89	106	76	167	127	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	196	141	309	235	267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1032	295	0	0	450	0
Stage 1	295	-	-	-	-	-
Stage 2	737	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	258	744	-	-	1110	-
Stage 1	755	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	203	744	-	-	1110	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	373	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	38.78	0	4.27
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	203	744	1110	-
HCM Lane V/C Ratio	-	-	0.811	0.264	0.212	-
HCM Ctrl Dly (s/v)	-	-	71.2	11.6	9.1	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	1.1	0.8	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	243	205	346	111	31
Future Vol, veh/h	37	243	205	346	111	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	296	250	422	135	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	672	0	-	0	848	461
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	919	-	-	-	332	601
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	919	-	-	-	312	601
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	687	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.21	0	25.06
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	238	-	-	-	349
HCM Lane V/C Ratio	0.049	-	-	-	0.496
HCM Ctrl Dly (s/v)	9.1	0	-	-	25.1
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	2.6

Intersection	
Intersection Delay, s/veh	28.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	246	0	176	0	0	0	41	155	133	0	0	220
Future Vol, veh/h	246	0	176	0	0	0	41	155	133	0	0	220
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.92	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	362	0	259	0	0	0	45	228	196	0	0	324
Number of Lanes	1	1	0	0	1	0	0	1	2	0	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	1	2
HCM Control Delay, s/veh	35.2	0	22.6	26.1
HCM LOS	E	-	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	32%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	67	67	246	176	0	147	230
LT Vol	196	0	0	246	0	0	0	0
Through Vol	0	67	67	0	0	0	147	73
RT Vol	0	0	0	0	176	0	0	157
Lane Flow Rate	273	98	98	362	259	0	216	339
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.679	0.23	0.23	0.869	0.534	0	0.503	0.743
Departure Headway (Hd)	8.976	8.46	8.46	8.644	7.421	10.455	8.392	7.898
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	403	423	423	420	484	0	429	457
Service Time	6.747	6.231	6.231	6.412	5.188	8.155	6.165	5.67
HCM Lane V/C Ratio	0.677	0.232	0.232	0.862	0.535	0	0.503	0.742
HCM Control Delay, s/veh	28.9	13.8	13.8	47.3	18.4	13.2	19.4	30.4
HCM Lane LOS	D	B	B	E	C	N	C	D
HCM 95th-tile Q	4.9	0.9	0.9	8.7	3.1	0	2.7	6.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	157
Future Vol, veh/h	157
Peak Hour Factor	0.68
Heavy Vehicles, %	2
Mvmt Flow	231
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	679	16	88	688	3	137
Future Vol, veh/h	679	16	88	688	3	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	2	5	12	2	2
Mvmt Flow	780	18	101	791	3	157

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	799	0	1387	399
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	598	-
Critical Hdwy	-	-	4.2	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.25	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	800	-	134	600
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	512	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	800	-	117	600
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	447	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.15	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	551	-	-	800	-
HCM Lane V/C Ratio	0.292	-	-	0.126	-
HCM Ctrl Dly (s/v)	14.2	-	-	10.1	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	1.2	-	-	0.4	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	72	43	18	68	91	15
Future Vol, veh/h	72	43	18	68	91	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	66	28	105	140	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	312	152	163	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	681	895	1416	-	-	-
Stage 1	876	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	667	895	1416	-	-	-
Mov Cap-2 Maneuver	667	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.42	1.59	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	377	-	737	-	-
HCM Lane V/C Ratio	0.02	-	0.24	-	-
HCM Ctrl Dly (s/v)	7.6	0	11.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	24	59	36	29	100
Future Vol, veh/h	53	24	59	36	29	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	28	69	42	34	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	273	90	0	0	110	0
Stage 1	90	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	716	968	-	-	1480	-
Stage 1	934	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	968	-	-	1480	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.07	0	1.68
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	700	968	1480	-
HCM Lane V/C Ratio	-	-	0.088	0.029	0.023	-
HCM Ctrl Dly (s/v)	-	-	10.6	8.8	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	207	202	73	108	30
Future Vol, veh/h	28	207	202	73	108	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	225	220	79	117	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	299	0	-	0	545	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	286	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1262	-	-	-	499	779
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1262	-	-	-	486	779
Mov Cap-2 Maneuver	-	-	-	-	486	-
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	763	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.94	0	14.48
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	214	-	-	-	529
HCM Lane V/C Ratio	0.024	-	-	-	0.284
HCM Ctrl Dly (s/v)	7.9	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	36	0	40	0	0	0	2	51	168	0	0	142
Future Vol, veh/h	36	0	40	0	0	0	2	51	168	0	0	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	0	43	0	0	0	2	55	183	0	0	154
Number of Lanes	1	1	0	0	1	0	0	1	2	0	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	1	2
HCM Control Delay, s/veh	8.7	0	8.8	8.7
HCM LOS	A	-	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	57%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	84	84	36	40	0	95	82
LT Vol	53	0	0	36	0	0	0	0
Through Vol	0	84	84	0	0	0	95	47
RT Vol	0	0	0	0	40	0	0	35
Lane Flow Rate	58	91	91	39	43	0	103	89
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.091	0.131	0.131	0.067	0.06	0	0.151	0.124
Departure Headway (Hd)	5.672	5.17	5.17	6.154	4.952	5.844	5.267	4.968
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	692	692	581	720	0	680	720
Service Time	3.412	2.91	2.91	3.907	2.705	3.611	3.007	2.709
HCM Lane V/C Ratio	0.092	0.132	0.132	0.067	0.06	0	0.151	0.124
HCM Control Delay, s/veh	9	8.7	8.7	9.4	8	8.6	8.9	8.4
HCM Lane LOS	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.3	0.4	0.4	0.2	0.2	0	0.5	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	35
Future Vol, veh/h	35
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	38
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Int Delay, s/veh	8.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	596	95	191	472	22	212
Future Vol, veh/h	596	95	191	472	22	212
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	6	2	5	12	2	2
Mvmt Flow	727	116	233	576	27	259

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	843	0	1538	421
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	-	-	4.2	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.25	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	770	-	106	581
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	770	-	74	581
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	297	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.37	46.43
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	770	-
HCM Lane V/C Ratio	0.807	-	-	0.302	-
HCM Ctrl Dly (s/v)	46.4	-	-	11.7	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	6.9	-	-	1.3	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	50	56	152	227	68
Future Vol, veh/h	65	50	56	152	227	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	57	57	57	57
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	88	98	267	398	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	921	458	518	0	-	0
Stage 1	458	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	300	603	1048	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	267	603	1048	-	-	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	567	-	-	-	-	-
Stage 2	634	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	28.01	2.37	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	485	-	353	-	-
HCM Lane V/C Ratio	0.094	-	0.572	-	-
HCM Ctrl Dly (s/v)	8.8	0	28	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	3.4	-	-

Intersection	
Int Delay, s/veh	18.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	106	105	185	127	154
Future Vol, veh/h	95	106	105	185	127	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	196	194	343	235	285

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1121	366	0	0	537	0
Stage 1	366	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	228	679	-	-	1031	-
Stage 1	702	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	176	679	-	-	1031	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	358	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	63.86	0	4.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	176	679	1031	-
HCM Lane V/C Ratio	-	-	0.999	0.289	0.228	-
HCM Ctrl Dly (s/v)	-	-	121.2	12.4	9.5	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	8.1	1.2	0.9	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	39	243	205	352	129	38
Future Vol, veh/h	39	243	205	352	129	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	296	250	429	157	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	679	0	-	0	856	465
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	913	-	-	-	328	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	913	-	-	-	308	598
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.27	0	29.28
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	249	-	-	-	346
HCM Lane V/C Ratio	0.052	-	-	-	0.589
HCM Ctrl Dly (s/v)	9.2	0	-	-	29.3
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	3.6

Intersection	
Intersection Delay, s/veh	29.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	264	0	176	0	0	0	0	155	133	0	0	220
Future Vol, veh/h	264	0	176	0	0	0	0	155	133	0	0	220
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.92	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	388	0	259	0	0	0	0	228	196	0	0	324
Number of Lanes	1	1	0	0	1	0	0	1	2	0	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	1	2
HCM Control Delay, s/veh	39.2	0	18.2	26
HCM LOS	E	-	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	31%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	69%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	67	67	264	176	0	147	236
LT Vol	155	0	0	264	0	0	0	0
Through Vol	0	67	67	0	0	0	147	73
RT Vol	0	0	0	0	176	0	0	163
Lane Flow Rate	228	98	98	388	259	0	216	348
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.571	0.231	0.183	0.911	0.52	0	0.495	0.749
Departure Headway (Hd)	9.026	8.51	6.719	8.451	7.23	10.258	8.259	7.759
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	399	421	532	427	497	0	436	466
Service Time	6.794	6.277	4.485	6.214	4.993	7.958	6.024	5.524
HCM Lane V/C Ratio	0.571	0.233	0.184	0.909	0.521	0	0.495	0.747
HCM Control Delay, s/veh	23.2	13.8	11	53.6	17.6	13	18.9	30.4
HCM Lane LOS	C	B	B	F	C	N	C	D
HCM 95th-tile Q	3.4	0.9	0.7	9.9	3	0	2.7	6.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	163
Future Vol, veh/h	163
Peak Hour Factor	0.68
Heavy Vehicles, %	2
Mvmt Flow	240
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	8	3	268	243	5
Future Vol, veh/h	23	8	3	268	243	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	9	3	291	264	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	565	267	270	0	-	0
Stage 1	267	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	486	772	1294	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	485	772	1294	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.16	0.09	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1294	-	537	-	-
HCM Lane V/C Ratio	0.003	-	0.063	-	-
HCM Ctrl Dly (s/v)	7.8	-	12.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	0	271	247	5
Future Vol, veh/h	0	8	0	271	247	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	0	295	268	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	566	271	274	0	-	0
Stage 1	271	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	486	767	1289	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	486	767	1289	-	-	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	756	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.74	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1289	-	767	-	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Ctrl Dly (s/v)	0	-	9.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	9	5	246	250	5
Future Vol, veh/h	25	9	5	246	250	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	10	5	267	272	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	553	274	277	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	494	764	1286	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	769	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	492	764	1286	-	-	-
Mov Cap-2 Maneuver	575	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.22	0.16	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1286	-	616	-	-
HCM Lane V/C Ratio	0.004	-	0.06	-	-
HCM Ctrl Dly (s/v)	7.8	-	11.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	679	28	109	688	10	149
Future Vol, veh/h	679	28	109	688	10	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	2	5	12	2	2
Mvmt Flow	780	32	125	791	11	171

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	813	0	1443	406
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	646	-
Critical Hdwy	-	-	4.2	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.25	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	791	-	123	594
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	484	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	791	-	104	594
Mov Cap-2 Maneuver	-	-	-	-	104	-
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	407	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.42	17.99
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	458	-	-	791	-
HCM Lane V/C Ratio	0.399	-	-	0.158	-
HCM Ctrl Dly (s/v)	18	-	-	10.4	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.9	-	-	0.6	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	72	43	18	87	124	15
Future Vol, veh/h	72	43	18	87	124	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	66	28	134	191	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	392	202	214	0	-	0
Stage 1	202	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	613	838	1356	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	599	838	1356	-	-	-
Mov Cap-2 Maneuver	599	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.28	1.32	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	309	-	671	-	-
HCM Lane V/C Ratio	0.02	-	0.264	-	-
HCM Ctrl Dly (s/v)	7.7	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	74	24	78	48	29	133
Future Vol, veh/h	74	24	78	48	29	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	86	28	91	56	34	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	341	119	0	0	147	0
Stage 1	119	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	655	933	-	-	1435	-
Stage 1	907	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	640	933	-	-	1435	-
Mov Cap-2 Maneuver	674	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.6	0	1.35
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	674	933	1435	-
HCM Lane V/C Ratio	-	-	0.128	0.03	0.023	-
HCM Ctrl Dly (s/v)	-	-	11.1	9	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	207	202	94	120	35
Future Vol, veh/h	36	207	202	94	120	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	225	220	102	130	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	322	0	-	0	574	271
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1238	-	-	-	480	768
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1238	-	-	-	463	768
Mov Cap-2 Maneuver	-	-	-	-	463	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	749	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.19	0	15.54
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	267	-	-	-	509
HCM Lane V/C Ratio	0.032	-	-	-	0.331
HCM Ctrl Dly (s/v)	8	0	-	-	15.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	48	0	40	0	0	0	0	53	168	0	0	142
Future Vol, veh/h	48	0	40	0	0	0	0	53	168	0	0	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	0	43	0	0	0	0	58	183	0	0	154
Number of Lanes	1	1	0	0	1	0	0	1	2	0	0	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	1	2
HCM Control Delay, s/veh	8.8	0	8	8.7
HCM LOS	A	-	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	100%	0%	0%	100%	100%	46%
Vol Right, %	0%	0%	0%	0%	100%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	84	84	48	40	0	95	103
LT Vol	53	0	0	48	0	0	0	0
Through Vol	0	84	84	0	0	0	95	47
RT Vol	0	0	0	0	40	0	0	56
Lane Flow Rate	58	91	91	52	43	0	103	112
Geometry Grp	6	6	6	6	6	6	6	6
Degree of Util (X)	0.092	0.133	0.089	0.089	0.06	0	0.15	0.152
Departure Headway (Hd)	5.76	5.257	3.516	6.135	4.933	5.859	5.259	4.878
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	622	681	1015	582	723	0	680	733
Service Time	3.497	2.995	1.252	3.889	2.687	3.627	3.002	2.622
HCM Lane V/C Ratio	0.093	0.134	0.09	0.089	0.059	0	0.151	0.153
HCM Control Delay, s/veh	9.1	8.8	6.6	9.5	8	8.6	8.9	8.5
HCM Lane LOS	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.3	0.5	0.3	0.3	0.2	0	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	56
Future Vol, veh/h	56
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	61
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	6	12	111	189	18
Future Vol, veh/h	15	6	12	111	189	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	7	13	121	205	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	362	215	225	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	637	825	1344	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	631	825	1344	-	-	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.24	0.75	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1344	-	709	-	-
HCM Lane V/C Ratio	0.01	-	0.032	-	-
HCM Ctrl Dly (s/v)	7.7	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	0	123	176	18
Future Vol, veh/h	0	6	0	123	176	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	134	191	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	335	201	211	0	-	0
Stage 1	201	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	660	840	1360	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	893	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	660	840	1360	-	-	-
Mov Cap-2 Maneuver	693	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	893	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.32	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1360	-	840	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Ctrl Dly (s/v)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	6	17	107	164	18
Future Vol, veh/h	16	6	17	107	164	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	7	18	116	178	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	341	188	198	0	-	0
Stage 1	188	-	-	-	-	-
Stage 2	153	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	655	854	1375	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	646	854	1375	-	-	-
Mov Cap-2 Maneuver	683	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	875	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.15	1.05	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1375	-	723	-	-
HCM Lane V/C Ratio	0.013	-	0.033	-	-
HCM Ctrl Dly (s/v)	7.7	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	816	329	301	711	129	333
Future Volume (veh/h)	816	329	301	711	129	333
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1870	1826	1722	1870	1870
Adj Flow Rate, veh/h	938	321	346	817	148	337
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	6	2	5	12	2	2
Cap, veh/h	1005	342	374	2170	408	363
Arrive On Green	0.40	0.40	0.21	0.66	0.23	0.23
Sat Flow, veh/h	2610	858	1739	3358	1781	1585
Grp Volume(v), veh/h	639	620	346	817	148	337
Grp Sat Flow(s),veh/h/ln	1721	1657	1739	1636	1781	1585
Q Serve(g_s), s	36.7	37.1	20.1	11.6	7.2	21.5
Cycle Q Clear(g_c), s	36.7	37.1	20.1	11.6	7.2	21.5
Prop In Lane		0.52	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	687	661	374	2170	408	363
V/C Ratio(X)	0.93	0.94	0.93	0.38	0.36	0.93
Avail Cap(c_a), veh/h	808	778	419	2170	525	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	29.8	39.7	7.8	33.4	38.9
Incr Delay (d2), s/veh	14.7	16.2	23.8	0.0	0.2	19.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.5	24.3	15.8	5.5	5.3	14.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	44.4	46.0	63.5	7.8	33.6	58.4
LnGrp LOS	D	D	E	A	C	E
Approach Vol, veh/h	1259			1163	485	
Approach Delay, s/veh	45.2			24.4	50.8	
Approach LOS	D			C	D	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		28.3	27.3	47.7		75.0
Change Period (Y+Rc), s		4.6	5.1	6.5		6.5
Max Green Setting (Gmax), s		30.4	24.9	48.5		48.5
Max Q Clear Time (g_c+I1), s		23.5	22.1	39.1		13.6
Green Ext Time (p_c), s		0.2	0.1	2.1		1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.8
HCM 7th LOS	D

Intersection	
Int Delay, s/veh	47.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	136	64	66	309	525	114
Future Vol, veh/h	136	64	66	309	525	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	181	85	88	412	700	152

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1364	776	852	0	-	0
Stage 1	776	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 163	397	787	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 144	397	787	-	-	-
Mov Cap-2 Maneuver	~ 144	-	-	-	-	-
Stage 1	403	-	-	-	-	-
Stage 2	555	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	286.38	1.79	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	787	-	181	-	-
HCM Lane V/C Ratio	0.112	-	1.47	-	-
HCM Ctrl Dly (s/v)	10.2	-	286.4	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	16.7	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	122	136	192	193	162	306
Future Vol, veh/h	122	136	192	193	162	306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	186	263	264	222	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1258	395	0	0	527	0
Stage 1	395	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	189	654	-	-	1040	-
Stage 1	680	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 148	654	-	-	1040	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	325	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	26.53	0	3.25
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	256	654	1040	-
HCM Lane V/C Ratio	-	-	0.652	0.285	0.213	-
HCM Ctrl Dly (s/v)	-	-	42	12.7	9.4	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	4.1	1.2	0.8	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	117	445	251	416	134	64
Future Vol, veh/h	117	445	251	416	134	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	511	289	478	154	74

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	767	0	-	0	1052	383
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	843	-	-	-	222	615
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	558	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	843	-	-	-	186	615
Mov Cap-2 Maneuver	-	-	-	-	316	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	558	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	2.1	0	21.86
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	843	-	-	-	316	615
HCM Lane V/C Ratio	0.16	-	-	-	0.487	0.12
HCM Ctrl Dly (s/v)	10.1	-	-	-	26.7	11.6
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.6	-	-	-	2.5	0.4

Intersection	
Intersection Delay, s/veh	198
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	339	15	231	82	8	62	0	260	508	36	38	471
Future Vol, veh/h	339	15	231	82	8	62	0	260	508	36	38	471
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	424	19	289	103	10	78	0	325	635	45	48	589
Number of Lanes	1	1	0	1	1	0	0	1	2	0	1	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	212.8	21.2	132.1	291
HCM LOS	F	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	82%	0%	6%	0%	11%	0%	100%	38%
Vol Right, %	0%	0%	18%	0%	94%	0%	89%	0%	0%	62%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	339	205	339	246	82	70	38	314	413
LT Vol	260	0	0	339	0	82	0	38	0	0
Through Vol	0	339	169	0	15	0	8	0	314	157
RT Vol	0	0	36	0	231	0	62	0	0	256
Lane Flow Rate	325	423	257	424	308	103	88	48	393	516
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	1.055	1.316	0.789	1.529	1.011	0.393	0.308	0.17	1.353	1.717
Departure Headway (Hd)	13.411	12.888	12.76	15.441	14.259	12.48	11.325	15.02	14.494	14.038
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	273	284	285	242	258	290	319	240	255	263
Service Time	11.111	10.588	10.46	13.141	11.959	10.18	9.025	12.72	12.194	11.738
HCM Lane V/C Ratio	1.19	1.489	0.902	1.752	1.194	0.355	0.276	0.2	1.541	1.962
HCM Control Delay, s/veh	109.2	199.3	50.4	294.6	100	23	19	20.8	219.6	370.1
HCM Lane LOS	F	F	F	F	F	C	C	C	F	F
HCM 95th-tile Q	11.3	18.5	6.1	21.6	10	1.8	1.3	0.6	18	28.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	256
Future Vol, veh/h	256
Peak Hour Factor	0.80
Heavy Vehicles, %	2
Mvmt Flow	320
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	914	188	175	1020	146	311
Future Volume (veh/h)	914	188	175	1020	146	311
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1870	1826	1722	1870	1870
Adj Flow Rate, veh/h	1016	153	194	1133	162	290
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	2	5	12	2	2
Cap, veh/h	1154	174	238	1981	378	336
Arrive On Green	0.38	0.38	0.14	0.61	0.21	0.21
Sat Flow, veh/h	3090	451	1739	3358	1781	1585
Grp Volume(v), veh/h	582	587	194	1133	162	290
Grp Sat Flow(s),veh/h/ln	1721	1730	1739	1636	1781	1585
Q Serve(g_s), s	19.2	19.2	6.6	12.7	4.8	10.7
Cycle Q Clear(g_c), s	19.2	19.2	6.6	12.7	4.8	10.7
Prop In Lane		0.26	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	662	666	238	1981	378	336
V/C Ratio(X)	0.88	0.88	0.82	0.57	0.43	0.86
Avail Cap(c_a), veh/h	1371	1378	711	2607	890	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	17.4	25.5	7.2	20.8	23.1
Incr Delay (d2), s/veh	1.5	1.6	2.6	0.1	0.3	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.5	11.6	4.5	4.2	3.0	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.0	19.0	28.1	7.3	21.1	25.7
LnGrp LOS	B	B	C	A	C	C
Approach Vol, veh/h	1169			1327	452	
Approach Delay, s/veh	19.0			10.4	24.0	
Approach LOS	B			B	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	17.5	13.4	29.9		43.4
Change Period (Y+Rc), s	4.6	5.1	6.5		6.5
Max Green Setting (Gmax), s	30.4	24.9	48.5		48.5
Max Q Clear Time (g_c+I1), s	12.7	8.6	21.2		14.7
Green Ext Time (p_c), s	0.2	0.1	2.2		1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	15.9
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	12.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	166	46	46	291	308	58
Future Vol, veh/h	166	46	46	291	308	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	58	58	368	390	73

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	911	427	463	0	-	0
Stage 1	427	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	304	628	1098	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	288	628	1098	-	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	51.36	1.16	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1098	-	326	-	-
HCM Lane V/C Ratio	0.053	-	0.822	-	-
HCM Ctrl Dly (s/v)	8.5	-	51.4	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0.2	-	7	-	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	52	221	79	50	232
Future Vol, veh/h	91	52	221	79	50	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	58	248	89	56	261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	666	293	0	0	337	0
Stage 1	293	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	425	747	-	-	1222	-
Stage 1	757	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	405	747	-	-	1222	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	664	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.57	0	1.43
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	506	747	1222	-
HCM Lane V/C Ratio	-	-	0.202	0.078	0.046	-
HCM Ctrl Dly (s/v)	-	-	13.9	10.2	8.1	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.3	0.1	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	71	337	440	117	181	103
Future Vol, veh/h	71	337	440	117	181	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	366	478	127	197	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	605	0	-	0	879	303
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	338	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	969	-	-	-	287	693
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	264	693
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.57	0	19.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	969	-	-	-	381	693
HCM Lane V/C Ratio	0.08	-	-	-	0.516	0.161
HCM Ctrl Dly (s/v)	9	-	-	-	24.1	11.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	2.8	0.6

Intersection	
Intersection Delay, s/veh	100.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	97	6	57	40	9	42	0	54	675	21	33	859
Future Vol, veh/h	97	6	57	40	9	42	0	54	675	21	33	859
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	7	62	43	10	46	0	59	734	23	36	934
Number of Lanes	1	1	0	1	1	0	0	1	2	0	1	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	17.2	15.3	73.5	142.7
HCM LOS	C	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	91%	0%	10%	0%	18%	0%	100%	76%
Vol Right, %	0%	0%	9%	0%	90%	0%	82%	0%	0%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	450	246	97	63	40	51	33	573	378
LT Vol	54	0	0	97	0	40	0	33	0	0
Through Vol	0	450	225	0	6	0	9	0	573	286
RT Vol	0	0	21	0	57	0	42	0	0	92
Lane Flow Rate	59	489	267	105	68	43	55	36	622	411
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.142	1.115	0.605	0.308	0.178	0.131	0.151	0.085	1.389	0.898
Departure Headway (Hd)	9.164	8.652	8.591	11.132	9.977	11.493	10.391	8.787	8.276	8.102
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	394	426	422	325	362	314	347	410	442	452
Service Time	6.864	6.352	6.291	8.832	7.677	9.193	8.091	6.487	5.976	5.802
HCM Lane V/C Ratio	0.15	1.148	0.633	0.323	0.188	0.137	0.159	0.088	1.407	0.909
HCM Control Delay, s/veh	13.4	108	23.6	18.7	14.8	15.9	14.9	12.3	211.8	49.5
HCM Lane LOS	B	F	C	C	B	C	B	B	F	E
HCM 95th-tile Q	0.5	16.5	3.9	1.3	0.6	0.4	0.5	0.3	29	9.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	92
Future Vol, veh/h	92
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	100
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	816	333	306	711	140	349
Future Volume (veh/h)	816	333	306	711	140	349
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1870	1826	1722	1870	1870
Adj Flow Rate, veh/h	938	326	352	817	161	355
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	6	2	5	12	2	2
Cap, veh/h	996	344	377	2161	426	379
Arrive On Green	0.40	0.40	0.22	0.66	0.24	0.24
Sat Flow, veh/h	2599	867	1739	3358	1781	1585
Grp Volume(v), veh/h	642	622	352	817	161	355
Grp Sat Flow(s),veh/h/ln	1721	1655	1739	1636	1781	1585
Q Serve(g_s), s	39.6	40.1	21.9	12.5	8.3	24.2
Cycle Q Clear(g_c), s	39.6	40.1	21.9	12.5	8.3	24.2
Prop In Lane		0.52	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	683	657	377	2161	426	379
V/C Ratio(X)	0.94	0.95	0.93	0.38	0.38	0.94
Avail Cap(c_a), veh/h	756	727	392	2161	490	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	32.1	42.4	8.5	35.1	41.2
Incr Delay (d2), s/veh	17.8	19.6	27.9	0.0	0.2	24.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	26.8	26.6	17.4	6.3	6.2	17.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	49.8	51.7	70.4	8.5	35.3	65.9
LnGrp LOS	D	D	E	A	D	E
Approach Vol, veh/h	1264			1169	516	
Approach Delay, s/veh	50.8			27.1	56.4	
Approach LOS	D			C	E	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	31.0	29.1	50.4		79.4
Change Period (Y+Rc), s	4.6	5.1	6.5		6.5
Max Green Setting (Gmax), s	30.4	24.9	48.5		48.5
Max Q Clear Time (g_c+I1), s	26.2	23.9	42.1		14.5
Green Ext Time (p_c), s	0.1	0.0	1.8		1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.4
HCM 7th LOS	D

Intersection	
Int Delay, s/veh	53

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	136	64	66	336	534	114
Future Vol, veh/h	136	64	66	336	534	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	181	85	88	448	712	152

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1412	788	864	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 152	391	779	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 135	391	779	-	-	-
Mov Cap-2 Maneuver	~ 135	-	-	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	$ 328.18	1.68	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	779	-	171	-	-
HCM Lane V/C Ratio	0.113	-	1.562	-	-
HCM Ctrl Dly (s/v)	10.2	-	$ 328.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	17.7	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	8.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	127	136	219	209	162	315
Future Vol, veh/h	127	136	219	209	162	315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	174	186	300	286	222	432

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1318	443	0	0	586	0
Stage 1	443	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 173	615	-	-	989	-
Stage 1	647	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 134	615	-	-	989	-
Mov Cap-2 Maneuver	245	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	316	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	30.58	0	3.29
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	245	615	989	-
HCM Lane V/C Ratio	-	-	0.71	0.303	0.224	-
HCM Ctrl Dly (s/v)	-	-	49	13.4	9.7	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	4.8	1.3	0.9	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	120	445	251	422	152	75
Future Vol, veh/h	120	445	251	422	152	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	511	289	485	175	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	774	0	-	0	1063	387
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	838	-	-	-	218	612
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	838	-	-	-	182	612
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	2.15	0	24.15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	838	-	-	-	312	612
HCM Lane V/C Ratio	0.165	-	-	-	0.559	0.141
HCM Ctrl Dly (s/v)	10.1	-	-	-	30.2	11.8
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.6	-	-	-	3.2	0.5

Intersection	
Intersection Delay, s/veh	206.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	356	15	231	82	8	62	0	260	508	36	38	471
Future Vol, veh/h	356	15	231	82	8	62	0	260	508	36	38	471
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	445	19	289	103	10	78	0	325	635	45	48	589
Number of Lanes	1	1	0	1	1	0	0	1	2	0	1	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	234.4	20.9	132.5	297.6
HCM LOS	F	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	82%	0%	6%	0%	11%	0%	100%	37%
Vol Right, %	0%	0%	18%	0%	94%	0%	89%	0%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	339	205	356	246	82	70	38	314	419
LT Vol	260	0	0	356	0	82	0	38	0	0
Through Vol	0	339	169	0	15	0	8	0	314	157
RT Vol	0	0	36	0	231	0	62	0	0	262
Lane Flow Rate	325	423	257	445	308	103	88	48	393	524
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	1.055	1.316	0.789	1.606	1.011	0.393	0.308	0.17	1.352	1.741
Departure Headway (Hd)	13.519	12.996	12.868	15.48	14.299	12.281	11.127	15.183	14.658	14.198
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	270	284	282	240	255	294	325	238	251	262
Service Time	11.219	10.696	10.568	13.18	11.999	9.981	8.827	12.883	12.358	11.898
HCM Lane V/C Ratio	1.204	1.489	0.911	1.854	1.208	0.35	0.271	0.202	1.566	2
HCM Control Delay, s/veh	109.7	199.7	50.7	327.1	100.2	22.7	18.7	21	219.8	380.9
HCM Lane LOS	F	F	F	F	F	C	C	C	F	F
HCM 95th-tile Q	11.2	18.4	6.1	23.6	9.9	1.8	1.3	0.6	17.8	29.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	262
Future Vol, veh/h	262
Peak Hour Factor	0.80
Heavy Vehicles, %	2
Mvmt Flow	328
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	10	4	425	368	5
Future Vol, veh/h	21	10	4	425	368	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	11	4	462	400	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	873	403	405	0	-	0
Stage 1	403	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	320	648	1153	-	-	-
Stage 1	675	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	648	1153	-	-	-
Mov Cap-2 Maneuver	442	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	629	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.85	0.08	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1153	-	492	-	-
HCM Lane V/C Ratio	0.004	-	0.068	-	-
HCM Ctrl Dly (s/v)	8.1	-	12.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	429	373	5
Future Vol, veh/h	0	10	0	429	373	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	466	405	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	874	408	411	0	-	0
Stage 1	408	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	320	643	1148	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	320	643	1148	-	-	-
Mov Cap-2 Maneuver	443	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	631	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.69	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1148	-	643	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Ctrl Dly (s/v)	0	-	10.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	10	6	406	378	5
Future Vol, veh/h	23	10	6	406	378	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	11	7	441	411	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	868	414	416	0	-	0
Stage 1	414	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	323	639	1143	-	-	-
Stage 1	667	-	-	-	-	-
Stage 2	639	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	321	639	1143	-	-	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	639	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.95	0.12	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1143	-	489	-	-
HCM Lane V/C Ratio	0.006	-	0.073	-	-
HCM Ctrl Dly (s/v)	8.2	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	914	201	193	1020	153	322
Future Volume (veh/h)	914	201	193	1020	153	322
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1870	1826	1722	1870	1870
Adj Flow Rate, veh/h	1016	167	214	1133	170	302
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	2	5	12	2	2
Cap, veh/h	1144	188	257	2004	388	345
Arrive On Green	0.39	0.39	0.15	0.61	0.22	0.22
Sat Flow, veh/h	3049	486	1739	3358	1781	1585
Grp Volume(v), veh/h	590	593	214	1133	170	302
Grp Sat Flow(s),veh/h/ln	1721	1724	1739	1636	1781	1585
Q Serve(g_s), s	20.9	21.0	7.8	13.4	5.4	12.0
Cycle Q Clear(g_c), s	20.9	21.0	7.8	13.4	5.4	12.0
Prop In Lane		0.28	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	665	666	257	2004	388	345
V/C Ratio(X)	0.89	0.89	0.83	0.57	0.44	0.88
Avail Cap(c_a), veh/h	1276	1279	662	2428	828	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	18.7	27.1	7.5	22.1	24.7
Incr Delay (d2), s/veh	1.7	1.7	2.7	0.1	0.3	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.5	12.6	5.4	4.8	3.5	7.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.4	20.4	29.7	7.6	22.4	27.5
LnGrp LOS	C	C	C	A	C	C
Approach Vol, veh/h	1183			1347	472	
Approach Delay, s/veh	20.4			11.1	25.7	
Approach LOS	C			B	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	18.8	14.8	31.8		46.5
Change Period (Y+Rc), s	4.6	5.1	6.5		6.5
Max Green Setting (Gmax), s	30.4	24.9	48.5		48.5
Max Q Clear Time (g_c+I1), s	14.0	9.8	23.0		15.4
Green Ext Time (p_c), s	0.2	0.1	2.3		1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	17.1
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	15

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	166	46	46	309	339	58
Future Vol, veh/h	166	46	46	309	339	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	58	58	391	429	73

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	973	466	503	0	-	0
Stage 1	466	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	280	597	1062	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	264	597	1062	-	-	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	604	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	66.33	1.11	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1062	-	301	-	-
HCM Lane V/C Ratio	0.055	-	0.893	-	-
HCM Ctrl Dly (s/v)	8.6	-	66.3	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0.2	-	8.2	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	110	52	239	90	50	263
Future Vol, veh/h	110	52	239	90	50	263
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	58	269	101	56	296

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	727	319	0	0	370	0
Stage 1	319	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	391	722	-	-	1189	-
Stage 1	737	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	372	722	-	-	1189	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	640	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.57	0	1.31
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	481	722	1189	-
HCM Lane V/C Ratio	-	-	0.257	0.081	0.047	-
HCM Ctrl Dly (s/v)	-	-	15.1	10.4	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1	0.3	0.1	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	337	440	137	193	110
Future Vol, veh/h	84	337	440	137	193	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	366	478	149	210	120

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	627	0	-	0	918	314
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	951	-	-	-	271	682
Stage 1	-	-	-	-	540	-
Stage 2	-	-	-	-	672	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	951	-	-	-	245	682
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	672	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.83	0	21.58
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	951	-	-	-	365	682
HCM Lane V/C Ratio	0.096	-	-	-	0.575	0.175
HCM Ctrl Dly (s/v)	9.2	-	-	-	27.4	11.4
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	3.4	0.6

Intersection	
Intersection Delay, s/veh	104.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	108	6	57	40	9	42	0	54	675	21	33	859
Future Vol, veh/h	108	6	57	40	9	42	0	54	675	21	33	859
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	117	7	62	43	10	46	0	59	734	23	36	934
Number of Lanes	1	1	0	1	1	0	0	1	2	0	1	2

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay, s/veh	18	15.5	77.1	148.5
HCM LOS	C	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	91%	0%	10%	0%	18%	0%	100%	72%
Vol Right, %	0%	0%	9%	0%	90%	0%	82%	0%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	450	246	108	63	40	51	33	573	396
LT Vol	54	0	0	108	0	40	0	33	0	0
Through Vol	0	450	225	0	6	0	9	0	573	286
RT Vol	0	0	21	0	57	0	42	0	0	110
Lane Flow Rate	59	489	267	117	68	43	55	36	622	431
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.144	1.13	0.613	0.345	0.18	0.132	0.152	0.086	1.403	0.948
Departure Headway (Hd)	9.278	8.766	8.705	11.224	10.069	11.641	10.539	8.89	8.378	8.179
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	389	416	417	323	359	310	343	405	442	448
Service Time	6.978	6.466	6.405	8.924	7.769	9.341	8.239	6.59	6.078	5.879
HCM Lane V/C Ratio	0.152	1.175	0.64	0.362	0.189	0.139	0.16	0.089	1.407	0.962
HCM Control Delay, s/veh	13.5	113.6	24.2	19.7	15	16.1	15.1	12.4	218	59.4
HCM Lane LOS	B	F	C	C	B	C	C	B	F	F
HCM 95th-tile Q	0.5	16.9	4	1.5	0.6	0.5	0.5	0.3	29.3	11.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	110
Future Vol, veh/h	110
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	120
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	6	13	245	353	17
Future Vol, veh/h	14	6	13	245	353	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	7	14	266	384	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	393	402	0	-	0
Stage 1	393	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	412	656	1156	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	407	656	1156	-	-	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	756	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.86	0.41	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1156	-	546	-	-
HCM Lane V/C Ratio	0.012	-	0.04	-	-
HCM Ctrl Dly (s/v)	8.2	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	0	258	343	17
Future Vol, veh/h	0	6	0	258	343	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	280	373	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	663	382	391	0	-	0
Stage 1	382	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	427	665	1167	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	427	665	1167	-	-	-
Mov Cap-2 Maneuver	525	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.47	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1167	-	665	-	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Ctrl Dly (s/v)	0	-	10.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	7	20	243	333	16
Future Vol, veh/h	15	7	20	243	333	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	8	22	264	362	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	678	371	379	0	-	0
Stage 1	371	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	418	675	1179	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	410	675	1179	-	-	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	11.78	0.62	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1179	-	555	-	-
HCM Lane V/C Ratio	0.018	-	0.043	-	-
HCM Ctrl Dly (s/v)	8.1	-	11.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	596	91	185	472	11	194
Future Volume (veh/h)	596	91	185	472	11	194
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1870	1826	1722	1870	1870
Adj Flow Rate, veh/h	727	111	226	576	13	237
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	6	2	5	12	2	2
Cap, veh/h	1068	163	284	1970	16	292
Arrive On Green	0.36	0.36	0.16	0.60	0.19	0.19
Sat Flow, veh/h	3083	457	1739	3358	83	1506
Grp Volume(v), veh/h	418	420	226	576	251	0
Grp Sat Flow(s),veh/h/ln	1721	1729	1739	1636	1595	0
Q Serve(g_s), s	11.6	11.6	7.0	4.8	8.5	0.0
Cycle Q Clear(g_c), s	11.6	11.6	7.0	4.8	8.5	0.0
Prop In Lane		0.26	1.00		0.05	0.94
Lane Grp Cap(c), veh/h	614	617	284	1970	309	0
V/C Ratio(X)	0.68	0.68	0.80	0.29	0.81	0.00
Avail Cap(c_a), veh/h	1317	1323	630	2504	719	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.4	15.4	22.7	5.4	21.7	0.0
Incr Delay (d2), s/veh	1.3	1.3	5.0	0.1	5.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	7.8	5.0	1.4	5.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.7	16.7	27.7	5.5	26.9	0.0
LnGrp LOS	B	B	C	A	C	
Approach Vol, veh/h	838			802	251	
Approach Delay, s/veh	16.7			11.7	26.9	
Approach LOS	B			B	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	15.5	13.8	27.0		40.8
Change Period (Y+Rc), s	4.6	4.6	6.9		6.9
Max Green Setting (Gmax), s	25.4	20.4	43.1		43.1
Max Q Clear Time (g_c+I1), s	10.5	9.0	13.6		6.8
Green Ext Time (p_c), s	0.6	0.4	6.5		3.6

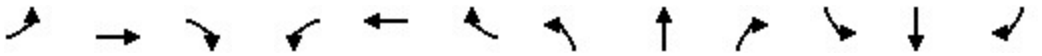
Intersection Summary	
HCM 7th Control Delay, s/veh	16.0
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	23.4
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	106	105	185	127	154
Future Vol, veh/h	95	106	105	185	127	154
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	196	194	343	235	285
Number of Lanes	1	1	1	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay, s/veh	14	37	16
HCM LOS	B	E	C

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	36%	0%	0%	0%	100%
Vol Right, %	64%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	290	95	106	127	154
LT Vol	0	95	0	127	0
Through Vol	105	0	0	0	154
RT Vol	185	0	106	0	0
Lane Flow Rate	537	176	196	235	285
Geometry Grp	3b	5	5	5	5
Degree of Util (X)	0.877	0.379	0.356	0.461	0.518
Departure Headway (Hd)	5.882	7.764	6.536	7.055	6.545
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	612	463	548	508	548
Service Time	3.941	5.535	4.306	4.828	4.317
HCM Lane V/C Ratio	0.877	0.38	0.358	0.463	0.52
HCM Control Delay, s/veh	37	15.2	12.9	15.8	16.2
HCM Lane LOS	E	C	B	C	C
HCM 95th-tile Q	10.2	1.7	1.6	2.4	3



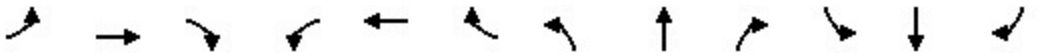
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	15	231	82	8	62	260	508	36	38	471	256
Future Volume (veh/h)	339	15	231	82	8	62	260	508	36	38	471	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.79	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	424	19	227	102	10	72	325	635	45	48	589	258
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	462	28	337	131	8	60	380	1494	106	79	649	284
Arrive On Green	0.26	0.24	0.24	0.07	0.05	0.05	0.21	0.45	0.43	0.04	0.28	0.27
Sat Flow, veh/h	1781	119	1417	1781	160	1149	1781	3356	237	1781	2351	1028
Grp Volume(v), veh/h	424	0	246	102	0	82	325	336	344	48	445	402
Grp Sat Flow(s),veh/h/ln	1781	0	1536	1781	0	1309	1781	1777	1816	1781	1777	1602
Q Serve(g_s), s	17.8	0.0	11.2	4.3	0.0	4.0	13.5	9.9	10.0	2.0	18.6	18.7
Cycle Q Clear(g_c), s	17.8	0.0	11.2	4.3	0.0	4.0	13.5	9.9	10.0	2.0	18.6	18.7
Prop In Lane	1.00		0.92	1.00		0.88	1.00		0.13	1.00		0.64
Lane Grp Cap(c), veh/h	462	0	365	131	0	68	380	791	809	79	490	442
V/C Ratio(X)	0.92	0.00	0.67	0.78	0.00	1.20	0.86	0.42	0.43	0.61	0.91	0.91
Avail Cap(c_a), veh/h	668	0	392	306	0	68	596	930	950	155	490	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	26.6	35.0	0.0	36.4	29.1	14.6	14.6	36.1	26.9	27.1
Incr Delay (d2), s/veh	11.0	0.0	3.1	3.7	0.0	173.8	4.3	0.1	0.1	2.8	20.1	22.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.4	0.0	7.6	3.5	0.0	8.2	10.0	6.7	6.9	1.7	15.4	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.6	0.0	29.7	38.7	0.0	210.2	33.4	14.7	14.8	38.9	46.9	49.2
LnGrp LOS	D		C	D		F	C	B	B	D	D	D
Approach Vol, veh/h		670			184			1005			895	
Approach Delay, s/veh		35.3			115.1			20.8			47.5	
Approach LOS		D			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	38.0	9.8	22.4	19.7	25.0	24.0	8.1
Change Period (Y+Rc), s	4.1	4.6	4.1	4.1	4.1	4.6	4.1	4.1
Max Green Setting (Gmax), s	5.9	39.4	13.2	19.6	24.9	20.4	28.8	4.0
Max Q Clear Time (g_c+I1), s	4.0	12.0	6.3	13.2	15.5	20.7	19.8	6.0
Green Ext Time (p_c), s	0.0	1.5	0.1	0.6	0.1	0.0	0.2	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	39.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



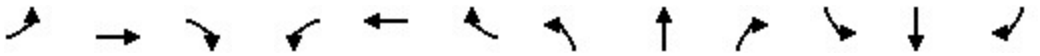
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	6	57	40	9	42	54	675	21	33	859	92
Future Volume (veh/h)	97	6	57	40	9	42	54	675	21	33	859	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	105	7	57	43	10	46	59	734	23	36	934	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	27	222	67	24	110	119	1353	42	93	1205	123
Arrive On Green	0.11	0.15	0.15	0.04	0.08	0.08	0.07	0.38	0.37	0.05	0.37	0.35
Sat Flow, veh/h	1781	176	1436	1781	291	1338	1781	3517	110	1781	3256	331
Grp Volume(v), veh/h	105	0	64	43	0	56	59	371	386	36	510	519
Grp Sat Flow(s),veh/h/ln	1781	0	1612	1781	0	1629	1781	1777	1851	1781	1777	1811
Q Serve(g_s), s	2.3	0.0	1.4	1.0	0.0	1.3	1.3	6.7	6.7	0.8	10.5	10.5
Cycle Q Clear(g_c), s	2.3	0.0	1.4	1.0	0.0	1.3	1.3	6.7	6.7	0.8	10.5	10.5
Prop In Lane	1.00		0.89	1.00		0.82	1.00		0.06	1.00		0.18
Lane Grp Cap(c), veh/h	197	0	249	67	0	134	119	684	712	93	657	670
V/C Ratio(X)	0.53	0.00	0.26	0.64	0.00	0.42	0.49	0.54	0.54	0.39	0.78	0.78
Avail Cap(c_a), veh/h	690	0	1011	263	0	632	211	981	1022	211	981	1000
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	15.4	19.6	0.0	18.0	18.6	9.9	9.9	18.9	11.5	11.6
Incr Delay (d2), s/veh	0.8	0.0	0.2	3.7	0.0	0.8	1.2	0.2	0.2	1.0	1.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.8	0.8	0.0	0.8	0.9	3.6	3.7	0.6	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	0.0	15.6	23.3	0.0	18.8	19.8	10.1	10.1	19.9	12.6	12.6
LnGrp LOS	B		B	C		B	B	B	B	B	B	B
Approach Vol, veh/h		169			99			816			1065	
Approach Delay, s/veh		17.2			20.8			10.8			12.8	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	19.7	5.7	10.5	6.1	19.1	8.7	7.5
Change Period (Y+Rc), s	4.1	4.6	4.1	4.1	4.1	4.6	4.1	4.1
Max Green Setting (Gmax), s	4.1	22.0	6.1	25.9	4.1	22.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	2.8	8.7	3.0	3.4	3.3	12.5	4.3	3.3
Green Ext Time (p_c), s	0.0	1.5	0.0	0.2	0.0	2.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	12.8
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



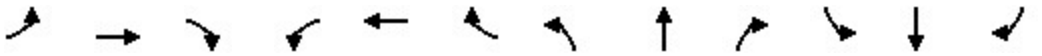
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	15	231	82	8	62	260	508	36	38	471	262
Future Volume (veh/h)	356	15	231	82	8	62	260	508	36	38	471	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.79	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	445	19	227	102	10	72	325	635	45	48	589	266
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	482	29	352	131	8	58	379	1474	104	78	629	283
Arrive On Green	0.27	0.25	0.25	0.07	0.05	0.05	0.21	0.44	0.43	0.04	0.27	0.26
Sat Flow, veh/h	1781	119	1420	1781	159	1144	1781	3355	237	1781	2324	1048
Grp Volume(v), veh/h	445	0	246	102	0	82	325	336	344	48	450	405
Grp Sat Flow(s),veh/h/ln	1781	0	1539	1781	0	1302	1781	1777	1816	1781	1777	1595
Q Serve(g_s), s	19.0	0.0	11.2	4.4	0.0	4.0	13.8	10.2	10.3	2.1	19.4	19.5
Cycle Q Clear(g_c), s	19.0	0.0	11.2	4.4	0.0	4.0	13.8	10.2	10.3	2.1	19.4	19.5
Prop In Lane	1.00		0.92	1.00		0.88	1.00		0.13	1.00		0.66
Lane Grp Cap(c), veh/h	482	0	381	131	0	66	379	781	798	78	481	432
V/C Ratio(X)	0.92	0.00	0.64	0.78	0.00	1.23	0.86	0.43	0.43	0.61	0.94	0.94
Avail Cap(c_a), veh/h	655	0	385	300	0	66	584	911	932	152	481	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	26.4	35.7	0.0	37.2	29.7	15.2	15.2	36.8	27.9	28.2
Incr Delay (d2), s/veh	13.4	0.0	2.8	3.7	0.0	186.0	4.9	0.1	0.1	2.9	25.7	28.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.5	0.0	7.6	3.6	0.0	8.4	10.3	7.0	7.2	1.7	16.8	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.2	0.0	29.2	39.4	0.0	223.1	34.6	15.3	15.4	39.7	53.6	56.2
LnGrp LOS	D		C	D		F	C	B	B	D	D	E
Approach Vol, veh/h		691			184			1005			903	
Approach Delay, s/veh		36.9			121.3			21.6			54.0	
Approach LOS		D			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	38.2	9.9	23.5	20.0	25.0	25.3	8.1
Change Period (Y+Rc), s	4.1	4.6	4.1	4.1	4.1	4.6	4.1	4.1
Max Green Setting (Gmax), s	5.9	39.4	13.2	19.6	24.9	20.4	28.8	4.0
Max Q Clear Time (g_c+I1), s	4.1	12.3	6.4	13.2	15.8	21.5	21.0	6.0
Green Ext Time (p_c), s	0.0	1.5	0.1	0.6	0.1	0.0	0.2	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.5
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	6	57	40	9	42	54	675	21	33	859	110
Future Volume (veh/h)	108	6	57	40	9	42	54	675	21	33	859	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	7	57	43	10	46	59	734	23	36	934	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	27	222	67	24	109	119	1371	43	92	1194	147
Arrive On Green	0.11	0.15	0.15	0.04	0.08	0.08	0.07	0.39	0.37	0.05	0.38	0.36
Sat Flow, veh/h	1781	176	1436	1781	291	1338	1781	3517	110	1781	3185	392
Grp Volume(v), veh/h	117	0	64	43	0	56	59	371	386	36	521	528
Grp Sat Flow(s),veh/h/ln	1781	0	1612	1781	0	1629	1781	1777	1851	1781	1777	1800
Q Serve(g_s), s	2.6	0.0	1.5	1.0	0.0	1.4	1.3	6.7	6.7	0.8	10.8	10.9
Cycle Q Clear(g_c), s	2.6	0.0	1.5	1.0	0.0	1.4	1.3	6.7	6.7	0.8	10.8	10.9
Prop In Lane	1.00		0.89	1.00		0.82	1.00		0.06	1.00		0.22
Lane Grp Cap(c), veh/h	197	0	249	67	0	132	119	693	721	92	666	675
V/C Ratio(X)	0.59	0.00	0.26	0.64	0.00	0.42	0.50	0.54	0.54	0.39	0.78	0.78
Avail Cap(c_a), veh/h	682	0	999	260	0	624	209	970	1010	209	970	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	15.6	19.8	0.0	18.3	18.8	9.8	9.8	19.2	11.5	11.6
Incr Delay (d2), s/veh	1.1	0.0	0.2	3.8	0.0	0.8	1.2	0.2	0.2	1.0	1.4	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	0.9	0.8	0.0	0.9	0.9	3.6	3.8	0.6	6.3	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	0.0	15.8	23.6	0.0	19.1	20.0	10.1	10.1	20.2	13.0	13.0
LnGrp LOS	B		B	C		B	C	B	B	C	B	B
Approach Vol, veh/h		181			99			816			1085	
Approach Delay, s/veh		17.7			21.0			10.8			13.2	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	20.1	5.7	10.6	6.1	19.5	8.7	7.5
Change Period (Y+Rc), s	4.1	4.6	4.1	4.1	4.1	4.6	4.1	4.1
Max Green Setting (Gmax), s	4.1	22.0	6.1	25.9	4.1	22.0	16.0	16.0
Max Q Clear Time (g_c+I1), s	2.8	8.7	3.0	3.5	3.3	12.9	4.6	3.4
Green Ext Time (p_c), s	0.0	1.5	0.0	0.2	0.0	2.0	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	13.0
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	596	93	189	472	17	205
Future Vol, veh/h	596	93	189	472	17	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	6	2	5	12	2	2
Mvmt Flow	727	113	230	576	21	250

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	840	0	1532	420
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	749	-
Critical Hdwy	-	-	4.2	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.25	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	772	-	107	582
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	428	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	772	-	75	582
Mov Cap-2 Maneuver	-	-	-	-	75	-
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	300	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.33	33.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	384	-	-	772	-
HCM Lane V/C Ratio	0.705	-	-	0.299	-
HCM Ctrl Dly (s/v)	33.9	-	-	11.6	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	5.2	-	-	1.3	-

Intersection	
Int Delay, s/veh	3.9

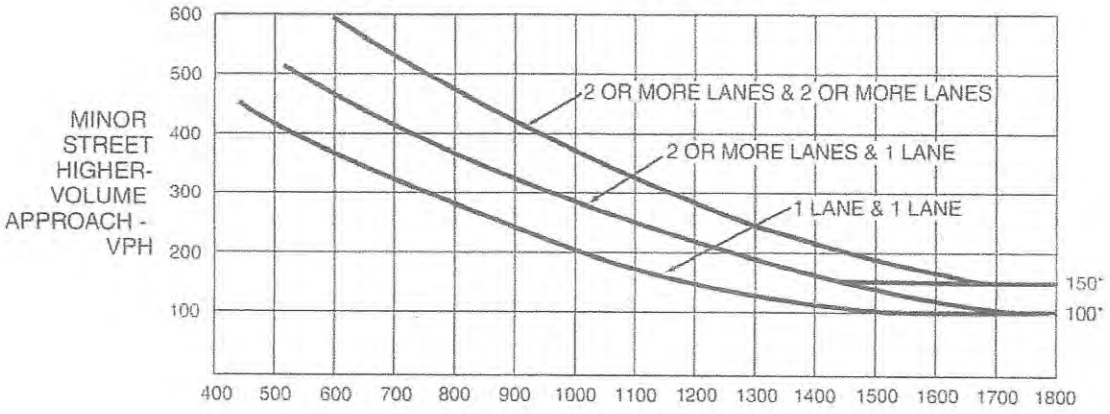
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	596	95	191	472	0	234
Future Vol, veh/h	596	95	191	472	0	234
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	6	2	5	12	2	2
Mvmt Flow	727	116	233	576	0	285

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	843	0	-	421
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.2	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.25	-	-	3.32
Pot Cap-1 Maneuver	-	-	770	-	0	581
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	770	-	-	581
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	3.37	17.04
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	581	-	-	770	-
HCM Lane V/C Ratio	0.491	-	-	0.302	-
HCM Ctrl Dly (s/v)	17	-	-	11.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	2.7	-	-	1.3	-

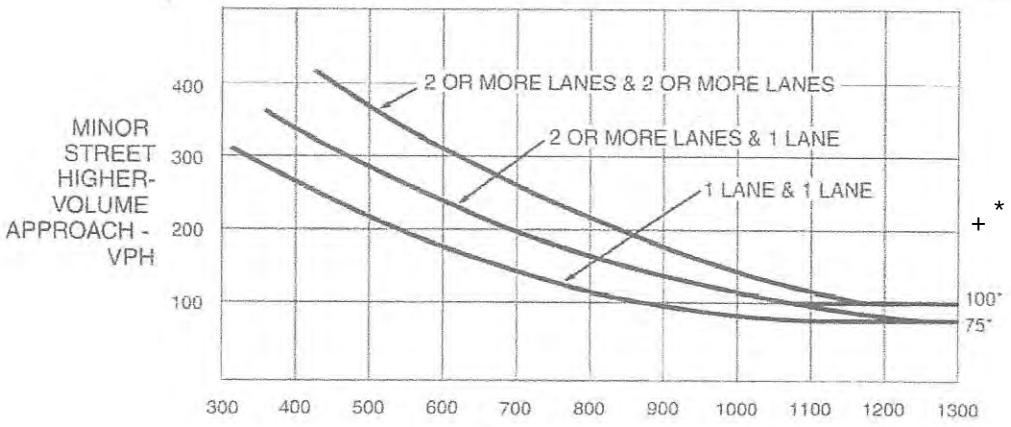
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



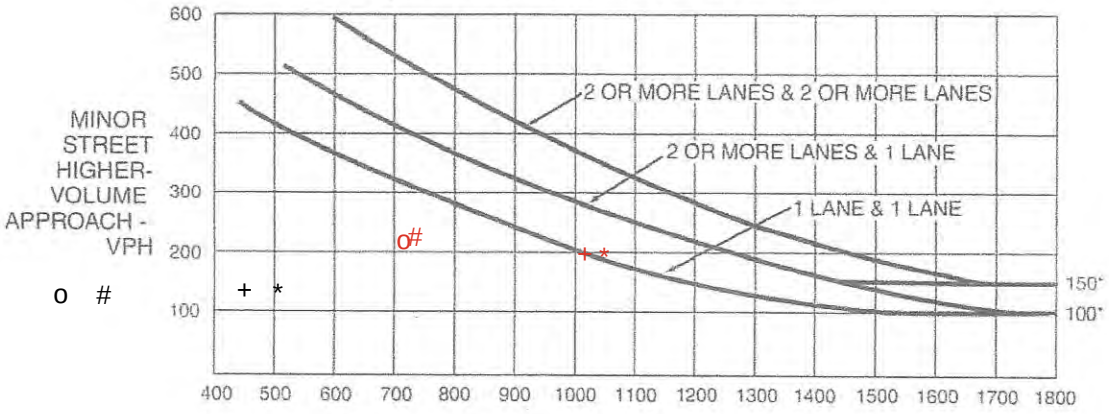
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM
o Exist PM
* Exist + Proj AM
# Exist + Proj PM

+ Cum AM
o Cum PM
* Cum + Proj AM
# Cum + Proj PM

SR 20 / EL MARGARITA RD

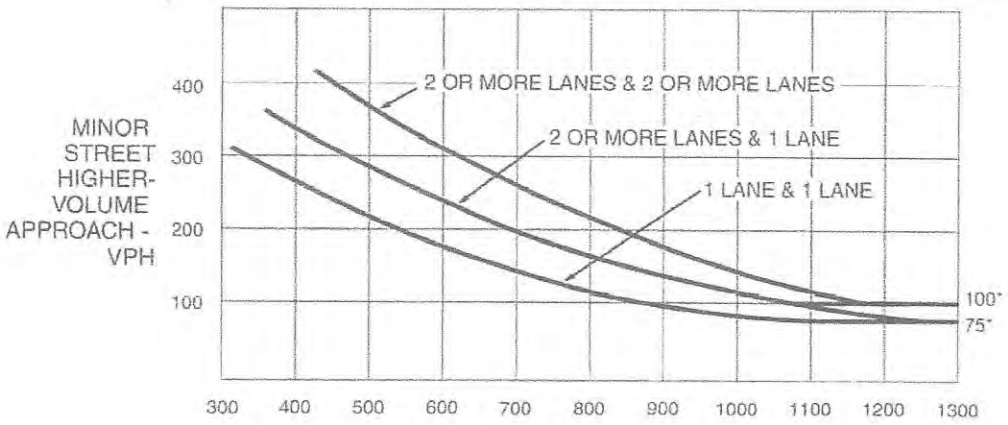
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

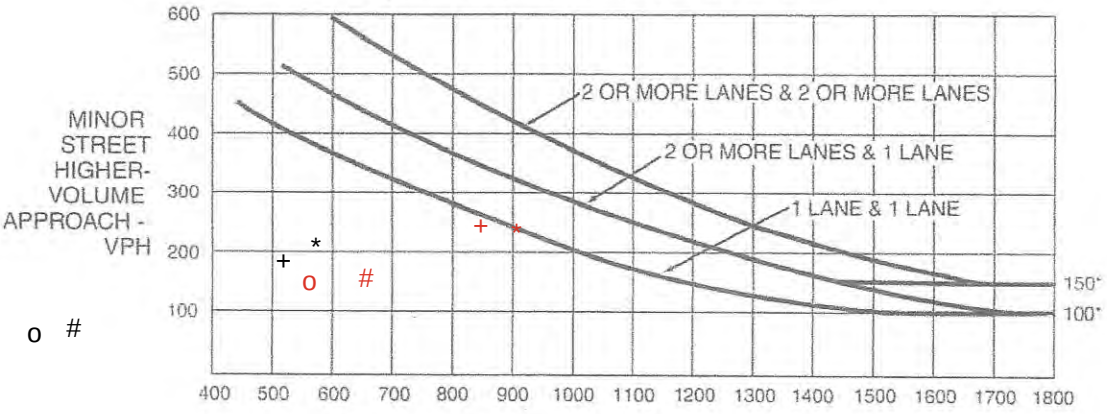


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM	+ Cum AM
o Exist PM	o Cum PM
* Exist + Proj AM	* Cum + Proj AM
# Exist + Proj PM	# Cum + Proj PM

EL MARGARITA RD / COLUSA FRONTAGE RD

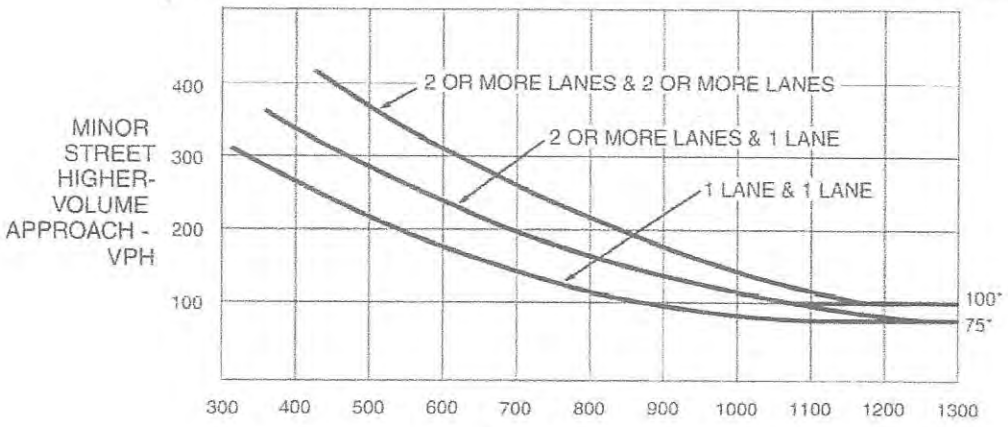
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



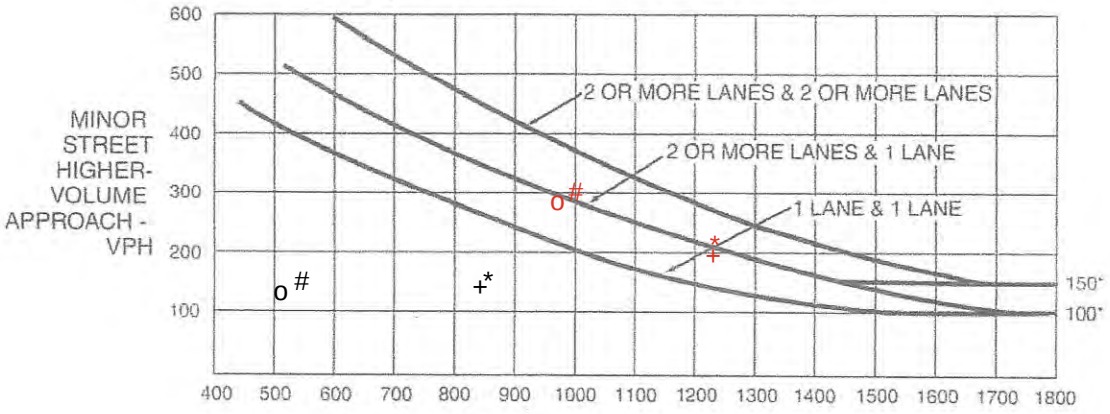
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM
o Exist PM
* Exist + Proj AM
# Exist + Proj PM

+ Cum AM
o Cum PM
* Cum + Proj AM
# Cum + Proj PM

EL MARGARITA RD / SPIRIT WAY

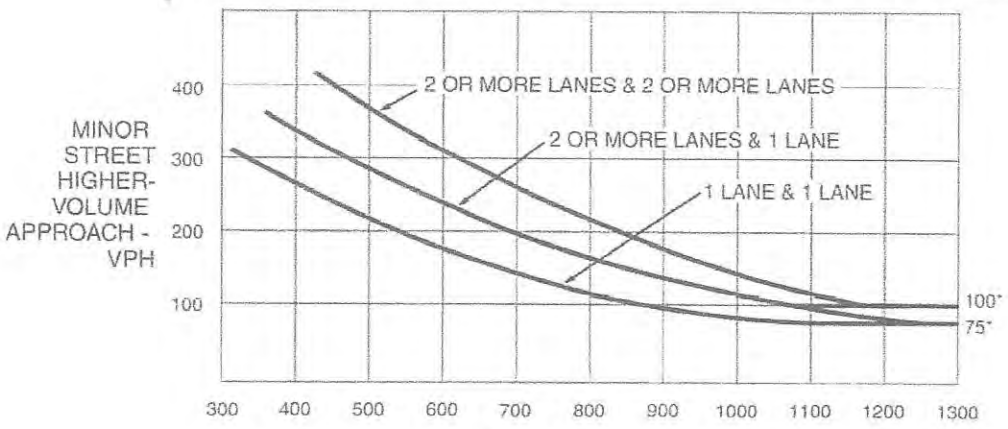
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

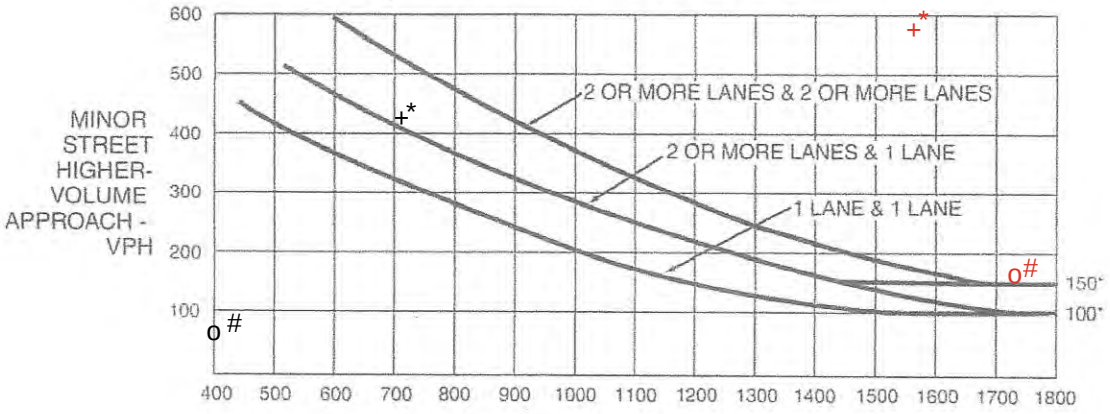


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM	+ Cum AM
o Exist PM	o Cum PM
* Exist + Proj AM	* Cum + Proj AM
# Exist + Proj PM	# Cum + Proj PM

EL MARGARITA RD / FRANKLIN RD

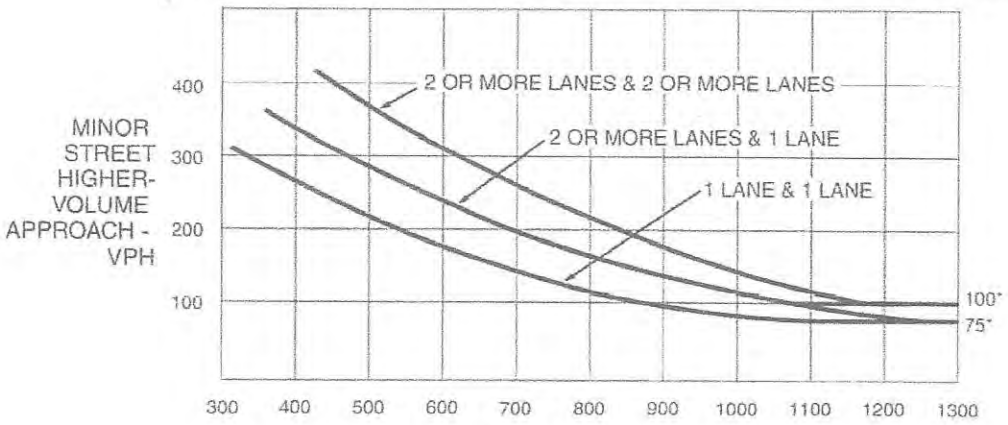
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

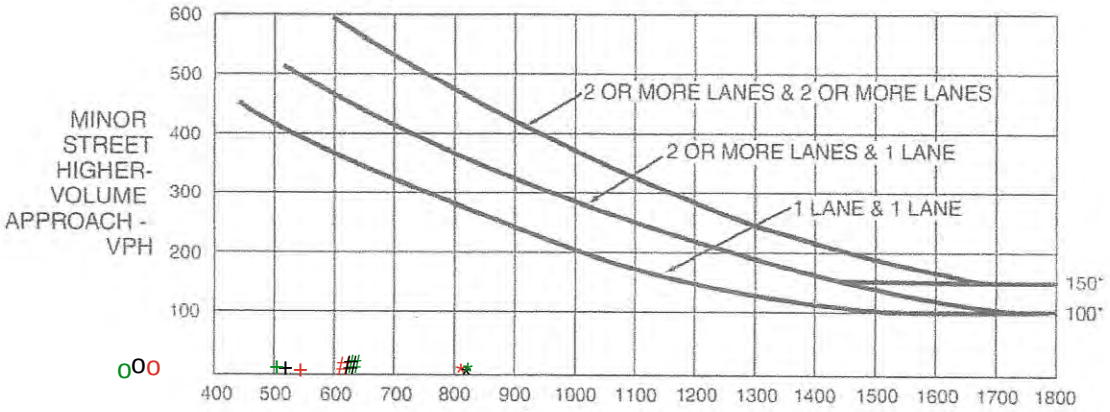


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

+ Exist AM	+ Cum AM
o Exist PM	o Cum PM
* Exist + Proj AM	* Cum + Proj AM
# Exist + Proj PM	# Cum + Proj PM

HARTER PRKWY / SPIRIT WAY

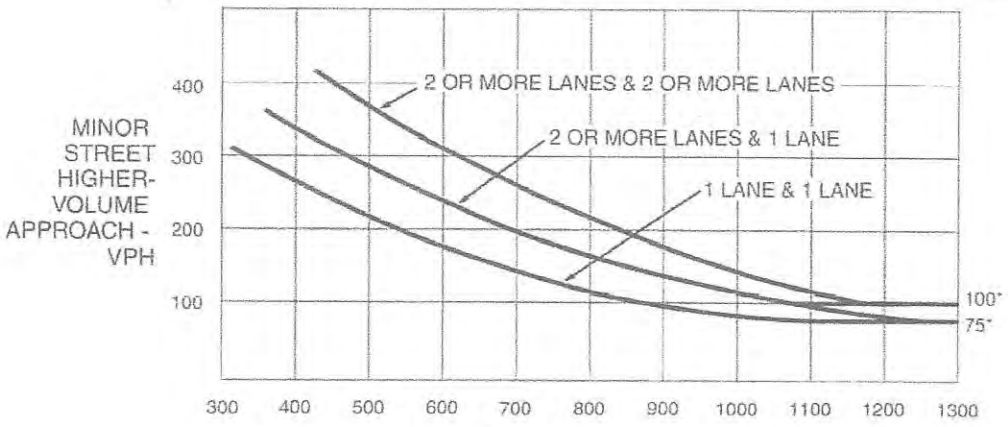
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Balkowitsch Dr	Escalante Dr	Florencio Dr
+ Exist + Proj AM	+ Exist + Proj AM	+ Exist + Proj AM
o Exist + Proj PM	o Exist + Proj PM	o Exist + Proj PM
* Cum + Proj AM	* Cum + Proj AM	* Cum + Proj AM
# Cum + Proj PM	# Cum + Proj PM	# Cum + Proj PM

EL MARGARITA RD / PROJECT INTERSECTIONS

CALVARY CHURCH AM / PM PEAK HOUR TRIP GENERATION RATES								
Land Use	**Quantity / Unit**	**Trip Per Unit**						
		Daily	**AM Peak Hour**			**PM Peak Hour**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Church (LU 560) [1]	53.48 ksf	7.60	0.32	62%	38%	0.49	44%	56%
Day Care Center (Pre-School) – (LU 565) [1]	50 Students	4.09	0.78	53%	47%	0.79	47%	53%
K-8 Private School (LU 530) [1]	270 Students	4.11	1.01	56%	44%	0.26	46%	54%
Church (LU 560)		406	17	11	7	26	12	15
Day Care Center (Pre-School) – (LU 565)		205	39	21	18	40	19	21
K-8 Private School (LU 530)		1110	273	153	120	70	32	38
Sub-Total		**1721**	**329**	184	145	**136**	62	74
Internal Trips (5%)								
Church (LU 560)		(20)	(1)	(1)	(0)	(1)	(1)	(1)
Day Care Center (Pre-School) – (LU 565)		(10)	(2)	(1)	(1)	(2)	(1)	(1)
K-8 Private School (LU 530)		(55)	(14)	(8)	(6)	(4)	(2)	(2)
Total Internal Trips		**(86)**	**(16)**	(9)	(7)	**(7)**	(3)	(4)
Net New Trips		**1635**	**312**	**175**	**138**	**129**	**59**	**70**

ksf – thousand square feet

numbers may not equal due to rounding

[1] *ITE Trip Generation*, 11th Edition

Local Transportation Analysis for Calvary Christian Center, March 6, 2024, Flecker Associates

MILNER C-STORE / GAS STATION AM / PM PEAK HOUR TRIP GENERATION RATES								
Land Use	**Quantity / Unit**	**Trip Per Unit**						
		Daily	**AM Peak Hour**			**PM Peak Hour**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Gas Station with Convenience Store[1]	9 VFP	265.12	16.06	50%	50%	18.42	50%	50%
Gas Station with Convenience Store (LU 945)		2386	145	72	72	166	83	83
Sub-Total		**2386**	**145**	72	72	**166**	83	83
Pass-By Trips								
C-Store / Gas Station *(59% Daily, 62% AM, 56% PM)*[2]		(1408)	(90)	(45)	(45)	(93)	(46)	(46)
Total Pass-By Trips		**(1408)**	**(90)**	(45)	(45)	**(93)**	(46)	(46)
Net New Trips		**978**	**55**	**27**	**27**	**73**	**36**	**36**

numbers may not equal due to rounding
[1]*ITE Trip Generation*, 11th Edition
[2]*ITE Trip Generation Handbook*, 3rd Ed

Local Transportation Analysis for Milner Gas Station, March 6, 2024, Flecker Associates

AM / PM PEAK HOUR TRIP GENERATION RATES DEAN PROPERTY								
Land Use	**Quantity / Unit**	**Trip Per Unit[1]**						
		Daily	**AM Peak Hour**			**PM Peak Hour**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Single Family Residential (LU 210)	1 DU	9.43	0.70	26%	74%	0.94	63%	37%
Independent Living (LU 252)	158 DU	3.24	0.20	34%	66%	0.25	56%	44%
Assisted Living (LU 254)	138 beds	2.60	0.18	60%	40%	0.24	39%	61%
Skilled Nursing (LU 620)	203 bed	3.06	0.14	72%	28%	0.14	33%	67%
Urgent Care (Clinic - LU 630)	5 ksf	37.6	2.75	81%	19%	3.69	30%	70%
MOB (LU 720)	34.55 ksf	36.00	3.10	79%	21%	3.93	30%	70%
Retail (<40 ksf)	34.55 ksf	54.45	2.36	40%	60%	6.59	50%	50%
Single Family Residential (LU 210)		9	1	0	1	1	1	0
Independent Living (LU 252)		512	32	11	21	40	22	17
Assisted Living (LU 254)		359	25	15	10	33	13	20
Skilled Nursing (LU 620)		621	28	20	8	28	9	19
Urgent Care (Clinic LU 630)		188	14	11	3	18	6	13
MOB (LU 720)		1,244	107	85	22	136	41	95
Retail (<40 ksf)		1,881	82	49	33	228	114	114
Sub-Total		**4,814**	**288**	191	97	**484**	205	279
Internal Capture[2]								
Single Family Residential (LU 210)		0	0	0	0	0	0	0
Independent Living (LU 252)		(92)	(5)	(2)	(3)	(5)	(2)	(3)
Assisted Living (LU 254)		0	0	0	0	0	0	0
Skilled Nursing (LU 620)		0	0	0	0	0	0	0
Urgent Care (Clinic - LU 630)		0	0	0	0	0	0	0
MOB (LU 720)		(100)	(10)	(8)	(2)	(14)	(4)	(10)
Retail (<40 ksf)		(188)	(4)	(2)	(2)	(23)	(11)	(11)
Total Internal Capture Trips		**(380)**	**(18)**	(12)	(7)	**(41)**	(18)	(23)
Net New Trips		**4,435**	**269**	**179**	**90**	**442**	**187**	**256**

numbers may not equal due to rounding

[1] *ITE Trip Generation*, 11th Edition

[2] includes motor vehicles, bicycles, walking

Local Transportation Analysis for Dean Property, August 5, 2024, Flecker Associates

FAIR SHARE CALCULATIONS

$$\frac{\text{(Cumulative + Project) - Cumulative}}{\text{Cumulative plus Project - Existing}}$$

SR 20 / El Margarita Rd

AM

2654-2619
2654-1549

3.17%

PM

2803-2772
2803-1611

2.60%

FAIR SHARE % **2.9%**

Harter Parkway / Spirit Way

AM

2329-2306
2329-1128

1.92%

PM

2014-1985
2014-591

2.04%

FAIR SHARE % **2.0%**