

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

FOR THE

MARTIN TIVOLI SUBDIVISION PROJECT

FEBRUARY 5, 2025

Prepared for:

City of Modesto
1010 10th Street
Modesto, CA 95354
(209) 577-5200

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



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Proposed Mitigated Negative Declaration Martin Tivoli Subdivision Project

Lead Agency: City of Modesto
1010 10th Street
Modesto, CA 95354
(209) 577-5200

Project Title: Martin Tivoli Subdivision Project

Project Location: Project site is a 19.95 acre site within the 454-acre Tivoli Specific Plan (TSP) planning area, which has been annexed into the incorporated limited of Modesto. The Project site is located about four miles northeast of Modesto's downtown core. State Route 99 is located six miles to the west. Kiernan Avenue (State Route 219) is one mile to the north. The Project site is bounded by the planned Claratina Avenue on the north, Oakdale Road on the west, Sylvan Avenue on the South, and Roselle Avenue on the east.

Project Description: The proposed Project includes a Vesting Tentative Subdivision Map to subdivide 19.95 acres into 185 medium density residential lots and 11 common area lots for streets, open space/basin, parking, emergency vehicle access, and utility easements. Lot sizes vary and include sizes ranging from approximately 36'x60', 35'x80', 38'x80', 38'x100', and 44'x80'. The proposed Project requires a General Plan Amendment, Specific Plan Amendment, and Vesting Tentative Map. The General Plan designates the Project site for Residential (R) and Regional Commercial (RC) land uses. The Specific Plan Amendment would change the Medium High Density Residential (MHDR), and the Regional Serving Commercial (RSC) areas to Medium Density Residential (MDR) making the entire Project site designated for MDR, the equivalent of the R-2 zoning district, except for the existing Very Low Density Residential (VLDR) with will have an open space/basin.

The open space/basin site is 1.98 acres and is located on the northeastern portion of the Project site. The location of this open space/basin site provides a buffer and separation from existing very low-density residential homes located to the northeast. There are ten residential lots located in the northwestern portion of the Project site. These lots are configured to be larger and have greater depth than the remaining lots to create a buffer from the Veterinary Clinic located to the northwest. The eastern portion of the site includes 57 parking spaces located at A Street and C Drive associated with the 36'x80 lots.

An emergency vehicle access is located at the west end of A Street to provide emergency access from the subdivision to Oakdale Road. The subdivision includes an existing irrevocable offer of dedication along Oakdale Road. The proposed Project includes sidewalk and landscaping frontage along Oakdale Road, and an access into the subdivision on C Drive from Oakdale Road. All improvements will be installed in accordance with the City of Modesto Standards. The storm drainage will be private storm drain basin Lot J and horizontal drain owned and maintained by the homeowner's association. Sanitary sewer will connect to the existing city of Modesto system. Domestic water will connect to the existing City of Modesto system. Common areas will be owned and maintained by the homeowner's association. The City of Modesto will own and maintain all public right-of-way (Oakdale Road). All roads within the development are private and will be owned and maintained by the homeowner's association. Street lighting will be in accordance with the City of Modesto standards and maintained by the City of Modesto. The internal roadways are designed to be 42' wide, with two 10' travel lanes, two 7' Parking lanes, one 5' sidewalk (one side only), 2' drive over curb, and 1' of landscape space

Findings: In accordance with the California Environmental Quality Act, the City of Modesto has prepared an Initial Study to determine whether the proposed project may have a significant adverse effect on the environment. The Initial Study and Proposed Mitigated Negative Declaration reflect the independent judgment of City of Modesto staff. On the basis of the Initial Study, the City of Modesto hereby finds:

Although the proposed project could have a significant adverse effect on the environment, there will not be a significant adverse effect in this case because the project has incorporated specific provisions to reduce impacts to a less than significant level and/or the mitigation measures described herein have been added to the project. A Mitigated Negative Declaration has thus been prepared.

The Initial Study, which provides the basis and reasons for this determination, is attached and/or referenced herein and is hereby made a part of this document.

Signature _____

Date _____

Proposed New Mitigation Measures:

Because the Project site is located within the approved Tivoli Specific Plan (TSP), for which there is a certified EIR, the proposed Project is bound by the relevant existing TSP EIR mitigation measures. In addition, there are specific new mitigation measures that were created based on this environmental evaluation and are specific to the proposed Project. The following are new Mitigation Measures that are extracted from the Initial Study. These measures are designed to avoid or minimize potentially significant impacts, and thereby reduce them to an insignificant level. Based on the analysis and conclusions of the Initial Study, the impacts of proposed project would be mitigated to less-than-significant levels with the implementation of the new mitigation measures presented below combined with the existing approved mitigation measures in the TSP EIR.

NOISE

Mitigation Measure NOI-1: The following measures shall be incorporated into the Project on-site construction operations:

- Noise-generating construction activities within the Project area shall adhere to the time restrictions of the City of Modesto General Plan to the maximum extent feasible.
- All noise-producing Project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the Project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of Project activity.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from the existing residences to the north.
- Project area and site access road speed limits shall be established and enforced during the construction period.
- In the event that unusual circumstances or emergencies prevent certain Project construction activities from complying with the Modesto requirements, then a noise control plan shall be developed to ensure that sufficient mitigation is implemented during Project construction to ensure adverse noise impacts are avoided.
- Notification of construction hours and durations shall be provided to the existing residences to the north of the project site.

Mitigation Measure NOI-2: The following measures shall be incorporated into the design:

- A solid noise barrier measuring 7 feet in height relative to backyard elevation should be constructed adjacent to the residences abutting Oakdale Road. The noise barrier locations are shown on Figure 2.
- The traffic noise barrier could take the form of masonry wall, earthen berm, or a combination of the two. Other materials may be acceptable but should be reviewed by an acoustical consultant prior to use.
- All north, west, and south-facing second-floor windows of residences proposed adjacent to Oakdale Road shall have a minimum Sound Transmission Class (STC) rating of 32. Figure 2 shows the residences where this mitigation measure would apply.
- Air conditioning shall be provided for all residences of this development to allow occupants to close doors and windows as desired for acoustic isolation.

Mitigation Measure NOI-3: The following shall be incorporated into the design:

- All west, south and east-facing second-floor windows of residences proposed adjacent to the southern site boundary where commercial development would occur in the future (plus 2 lots to the east), shall have a minimum Sound Transmission Class (STC) rating of 32. Figure 2 shows the residences where this mitigation measure would apply.

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INITIAL STUDY CHECKLIST

PROJECT TITLE

Martin Tivoli Subdivision

LEAD AGENCY NAME AND ADDRESS

City of Modesto
1010 10th Street
Modesto, CA 95354
(209) 577-5200

CONTACT PERSON AND PHONE NUMBER

Steve McMurtry
De Novo Planning Group
1020 Suncast Lane #106
El Dorado Hills, CA 95762
(916) 580-9818

PROJECT BACKGROUND AND PREVIOUS ENVIRONMENTAL REVIEW

TIVOLI SPECIFIC PLAN

In February 2008, the City of Modesto approved the Tivoli Specific Plan (TSP) and the associated Environmental Impact Report (EIR) (SCH#2005072125). The approved TSP area is 454 acres within the City of Modesto's Sphere of Influence with the goal of providing a balanced and integrated new community. This area is designed to support a wide range and mix of housing densities and types, regional serving commercial development, neighborhood level retail and commercial, the designation of a school site, and a continuous greenway/paseo to support walkability throughout the TSP area. The TSP required amendments to City's General Plan.

The TSP classified the planning area as Village Residential, a land use designation from the Modesto General Plan that is intended to provide for the development of urban "villages" comprised of mixed-use, transit-oriented neighborhoods that area able to accommodate a variety of residential unit types. This designation encourages the development of small-lot single family residential units. The TSP adopted land uses for the site that conform to the design and development standards within the VR designation.

PROPOSED MODIFICATION TO TSP

A 19.95-acre portion of the TSP planning area has been proposed for a General Plan Amendment to change a portion of the Project site currently designated for Regional Commercial to Residential. This proposal also includes a request to amend the TSP land use from RSC-2, and MHDR-3 to MDR. The TSP land use that is VLDR-2 on the northeast border of the Project site is proposed for a park/basin use, which is allowed under the VLDR-2 in the TSP and the Residential General Plan Land Use. The General Plan and Specific Plan amendments are intended to enable the subdivision and development of 185 medium density residential lots and 11 common area lots.

PROJECT LOCATION

The Project site is a 19.95 acres site within the 454-acre TSP planning area, which has been annexed into the incorporated limited of Modesto. The Project site is located about four miles northeast of Modesto's downtown core. State Route 99 is located six miles to the west. Kiernan Avenue (State Route 219) is one mile to the north. The Project site is bounded by the planned Claratina Avenue on the north, Oakdale Road on the west, Sylvan Avenue on the south, and Roselle Avenue on the east. Figure 1 provides the Regional Location, and Figure 2 provides a Project Vicinity Map.

PROJECT SETTING

EXISTING SITE CONDITIONS

The TSP has 85 separate parcels within the 454-acre planning area, of which the Project site is 19.95 acres on APN 083-004-057. Figure 3 provides the Assessor's Parcel Map.

SITE TOPOGRAPHY

The Project site is relatively flat and ranges in elevation from approximately 100 to 105 feet above mean sea level.

EXISTING SITE USES

The Project site is comprised of agricultural land uses, specifically orchard. Figure 4 provides an aerial photo that illustrates the existing Project site land uses.

EXISTING SURROUNDING USES

Uses within the surrounding area include the following:

- North – Village Oak Veterinary Hospital and single-family residential units.
- East – Agricultural land uses and single-family residential units.
- South – Agricultural land uses and commercial land uses.
- West – Single-family residential units.

PROJECT DESCRIPTION

The proposed Project is a subdivision of 19.95 acres for the development of 185 medium density residential lots and 11 common area lots. The proposed Project requires a General Plan Amendment, Specific Plan Amendment, and Vesting Tentative Map.

ENTITLEMENT REQUESTS

General Plan and Specific Plan Amendments

The General Plan designates the Project site for Residential (R) and Regional Commercial (RC) land uses. The western portion of the Project site that is designated RC would be amended to R making the entire Project site designated for Residential uses. The Zoning designation over the Project site is Specific Plan, which allows the governing Specific Plan to define the specific uses for the Project site. The TSP is the governing Specific Plan and has designated the Project site for Very Low Density Residential (VLDR), Medium High Density Residential (MHDR), and Regional Serving Commercial (RSC) uses. The Specific Plan Amendment would change the MHDR, and the RSC areas to Medium Density Residential (MDR) making the entire Project site designated for MDR, the equivalent of the R-2 zoning district, except for the VLDR which would remain the same. Table 1 and 2 provides a summary of the proposed changes in use.

TABLE 1: GROSS GENERAL PLAN LAND USE SUMMARY – DEVELOPMENT AREA (PER VESTING TENTATIVE MAP)

PROPOSED LAND USE DESIGNATIONS	EXISTING (ACRES)	PROPOSED (ACRES)
Residential	12.66	19.95
Regional Commercial	7.29	-
TOTAL	19.95	19.95

SOURCE: ASSOCIATED ENGINEERING GROUP, INC., 2024

TABLE 2: GROSS TIVOLI LAND USE SUMMARY – DEVELOPMENT AREA (PER VESTING TENTATIVE MAP)

PROPOSED LAND USE DESIGNATIONS	EXISTING (ACRES)	PROPOSED (ACRES)
Very Low Density Residential	2.55	2.55
Medium High Density Residential	4.87	-
Regional Serving Commercial	12.53	-
Medium Density Residential	-	17.4
TOTAL	19.95	19.95

SOURCE: ASSOCIATED ENGINEERING GROUP, INC., 2024

Vesting Tentative Subdivision Map

The proposed Project includes a Vesting Tentative Subdivision Map to subdivide 19.95 acres into 185 medium density residential lots and 11 common area lots for streets, open space/basin, parking, emergency vehicle access, and utility easements. Lot sizes vary and include sizes ranging from approximately 36'x60', 35'x80', 38'x80', 38'x100', and 44'x80'.

The open space/basin site is 1.98 acres and is located on the northeastern portion of the Project site. The location of this open space/basin site provides a buffer and separation from existing very low-density residential homes located to the northeast.

There are ten residential lots located in the northwestern portion of the Project site. These lots are configured to be larger and have greater depth than the remaining lots to create a buffer from the Veterinary Clinic located to the northwest.

The eastern portion of the site includes 57 parking spaces located at A Street and C Drive associated with the 36'x80' lots.

An emergency vehicle access is located at the west end of A Street to provide emergency access from the subdivision to Oakdale Road.

The subdivision includes an existing irrevocable offer of dedication along Oakdale Road. The proposed Project includes sidewalk and landscaping frontage along Oakdale Road, and an access into the subdivision on C Drive from Oakdale Road.

All improvements will be installed in accordance with the City of Modesto Standards. The storm drainage will be private storm drain basin Lot J and horizontal drain owned and maintained by the homeowner's association. Sanitary sewer will connect to the existing city of Modesto system. Domestic water will connect to the existing City of Modesto system. Common areas will be owned and maintained by the homeowner's association. The City of Modesto will own and maintain all public right-of-way (Oakdale Road). All roads within the development are private and will be owned and maintained by the homeowner's association. Street lighting will be in accordance with the City of Modesto standards and maintained by the City of Modesto.

The internal roadways are designed to be 42' wide, with two 10' travel lanes, two 7' Parking lanes, one 5' sidewalk (one side only), 2' drive over curb, and 1' of landscape space.

Figure 10 illustrates the Vesting Tentative Subdivision Map.

GENERAL PLAN AND ZONING DESIGNATIONS

EXISTING LAND USE AND ZONING DESIGNATIONS

The City of Modesto General Plan (2019), and the TSP (updated in 2016), detail the existing land use designations for the Project site. Figure 5 depicts the existing General Plan Land Use designations, and Figure 6 depicts the existing Tivoli land uses.

Existing General Plan Land Use

The Project site is designated as Residential and Regional Commercial on the existing General Plan Land Use Map. These uses are described below.

Residential (R)

a. Purpose and Intent. To provide for residential uses throughout the Modesto Urban Area. Residential uses include single-family detached housing, single-family attached housing, multi-family housing, and mobile homes. Small-lot single-family residential development is encouraged, subject to applicable zoning regulations, design guidelines and General Plan criteria. Compatible uses in the residential designation may include schools, parks, and religious or community facilities. Existing small-scale commercial and office uses are also deemed compatible.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan where residential land uses would be compatible with other existing and planned land uses.

c. Land Use Intensity. The land use intensity is a typical density of 6.6 dwelling units per gross acre, to a maximum of 7.5 dwelling units per gross acre, on an area-wide basis without requiring a General Plan Amendment, and between 10.9 and 29.0 dwelling units per gross acre for multi-family housing.

Regional Commercial (RC)

a. Purpose and Intent. To provide for large-scale commercial areas and regional retail Commercial uses serving the needs of the entire region. Regional Commercial uses serve a much larger population by providing commercial activities not needed on a regular basis. Their location is primarily determined by major transportation routes which allow convenient access.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan area that is located with adequate access to regional traffic routes and transit corridors.

c. Land Use Intensity. The land use intensity is a Floor Area Ratio of approximately 0.35.

Existing TSP Land Use

The Project site is designated as Very Low Density Residential, Medium High Density Residential, and Regional Serving Commercial on the TSP Land Use Map. These uses are described below.

Very Low Density Residential (VLDR)

The Very Low Density Residential (VLDR) designation provides area for large lot, “rural-oriented estate” homes within the TSP. All these homes will be either along or behind the Mable Avenue area, where similar homes now exist. The residential density will range from 1-3 DU’s/acre. The developable VLDR designation occurs on approximately 10 acres and will yield approximately 15 new large lot homes. Lot sizes are expected to average from 0.50 to 0.75 acres and will accommodate spacious detached single-family homes.

Medium High Density Residential (MHDR)

The Medium High Density Residential (MHDR) land use designation is intended to provide for the development of a variety of multi-family residential dwellings. The intent here is to, once again, allow for greater site planning and architectural design flexibility in order to stimulate a richer mix of predominantly rental (with some for sale) multi-family housing styles and selections. Flexibility is provided in both the development standards and design criteria and guidelines to both allow a variety of densities and styles while maintaining the overall limit range on the total number of MHDR dwelling units.

Regional Serving Commercial (RSC)

The Regional Serving Commercial (RSC) land use designation is intended to provide for regional commercial, entertainment and office uses. Development occurring within this designation will be coordinated and integrated in conformance with the design criteria and guidelines found in Chapter 5.0. A site specific and detailed site plan for development by the City is required in the RSC areas and will be incorporated as a part of the TSP.

RSC-2: RSC-2 is located at the corner of Oakdale Road the future extension of Bridgewood Avenue. The intended emphasis for this commercial center is also to be the location for more larger format uses (sized for only one) combined with smaller retail uses. Similar to RSC-1 high quality architecture landscaping, and amenities must be provided.

Existing General Plan Zoning Designations

The Project site is zoned as Specific Plan (SP) on the existing General Plan Zoning Map.

Specific Plan (SP)

Specific plans are established to enable land to be planned and developed as coordinated, comprehensive projects providing for systematic implementation of the General Plan, and provide a means to plan for specific areas, providing land use pattern, development standards, design guidelines, and development processes for these areas. The purpose and intent of the SP Zone is to permit various land uses including residential, industrial, and commercial development through Specific Plans, pursuant to Government Code Section 65450, et seq. The intent of this is to implement policies regarding certain uses, standards, and development review processes adopted through the Specific Plan process.

Existing TSP Zoning Designations

All land use designations within the TSP are linked to a corresponding zoning designation established in the Modesto Zoning Ordinance. Permitted uses specified by the corresponding zoning district of the Modesto Zoning Ordinance that are not identified by the TSP will apply. If there is a conflict regarding uses, the TSP shall prevail.

Very Low Density Residential (VLDR) → Low Density Residential (R-1)

Medium High Density Residential (MHDR) → Medium High Density Residential (R-3)

Regional Serving Commercial (RSC) → General Commercial (C-2)

PROPOSED LAND USE AND ZONING DESIGNATIONS

The City of Modesto General Plan (2019), and the TSP (updated in 2016), detail the existing land use designations for the Project site. Figure 7 depicts the proposed General Plan land use designation, and Figure 8 depicts the proposed TSP land use designations and Figure 9 depicts the proposed zoning.

Proposed General Plan Land Use

The Project site is designated as Residential and Regional Commercial on the existing General Plan Land Use Map. These uses are described below.

Residential (R)

a. Purpose and Intent. To provide for residential uses throughout the Modesto Urban Area. Residential uses include single-family detached housing, single-family attached housing, multi-family housing, and mobile homes. Small-lot single-family residential development is encouraged, subject to applicable zoning regulations, design guidelines and General Plan criteria. Compatible uses in the residential designation may include schools, parks, and religious or community facilities. Existing small-scale commercial and office uses are also deemed compatible.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan where residential land uses would be compatible with other existing and planned land uses.

c. Land Use Intensity. The land use intensity is a typical density of 6.6 dwelling units per gross acre, to a maximum of 7.5 dwelling units per gross acre, on an area-wide basis without requiring a General Plan Amendment, and between 10.9 and 29.0 dwelling units per gross acre for multi-family housing.

Proposed TSP Land Use

The Project site is designated as Very Low Density Residential, Medium High Density Residential, and Regional Serving Commercial on the TSP Land Use Map. The proposed Project would change the Medium High Density Residential, and Regional Serving Commercial use to Medium Density Residential. The Very Low Density Residential would remain the same. These uses are described below.

Medium Density Residential (MDR)

The Medium Density Residential (MDR) land use provides an opportunity to accommodate a variety of different housing types. Within this land use designation, creative site planning, unit clustering and design innovation will be encouraged to provide a more

traditional residential neighborhood appearance, that being characterized by a mix of homes, some with inviting porches and all with comfortable, shady streets. This mix is anticipated to offer a selection of housing types and styles, appealing to a range of market segments, from first-time buyers, to families and seniors.

Very Low Density Residential (VLDR)

The Very Low Density Residential (VLDR) designation provides area for large lot, “rural-oriented estate” homes within the TSP. All these homes will be either along or behind the Mable Avenue area, where similar homes now exist. The residential density will range from 1-3 DU’s/acre. The developable VLDR designation occurs on approximately 10 acres and will yield approximately 15 new large lot homes. Lot sizes are expected to average from 0.50 to 0.75 acres and will accommodate spacious detached single-family homes.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

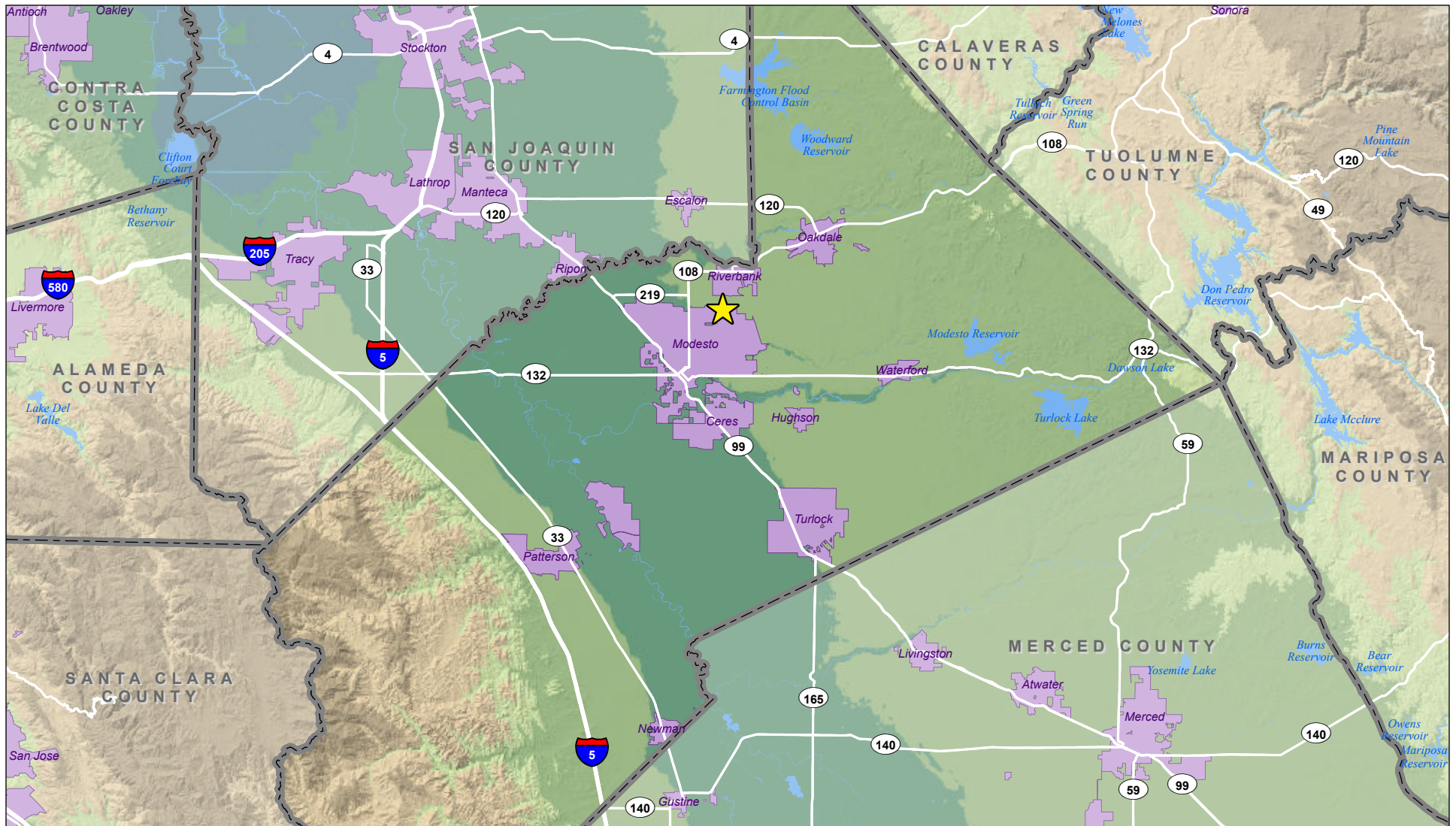
The City of Modesto will be the Lead Agency for the proposed Project, pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050. Actions that would be required from the City include, but are not limited to the following:

- Approval of City of Modesto General Plan Amendment;
- Approval of TSP Amendment;
- Approval of Tentative Subdivision Map.

The following agencies may be required to issue permits or approve certain aspects of the proposed project:

- Central Valley Regional Water Quality Control Board (CVRWQCB) – Storm Water Pollution Prevention Plan (SWPPP) for construction activities pursuant 2009-0009-DWQ Construction general permit;
- Central Valley Flood Protection – Discharge permit.

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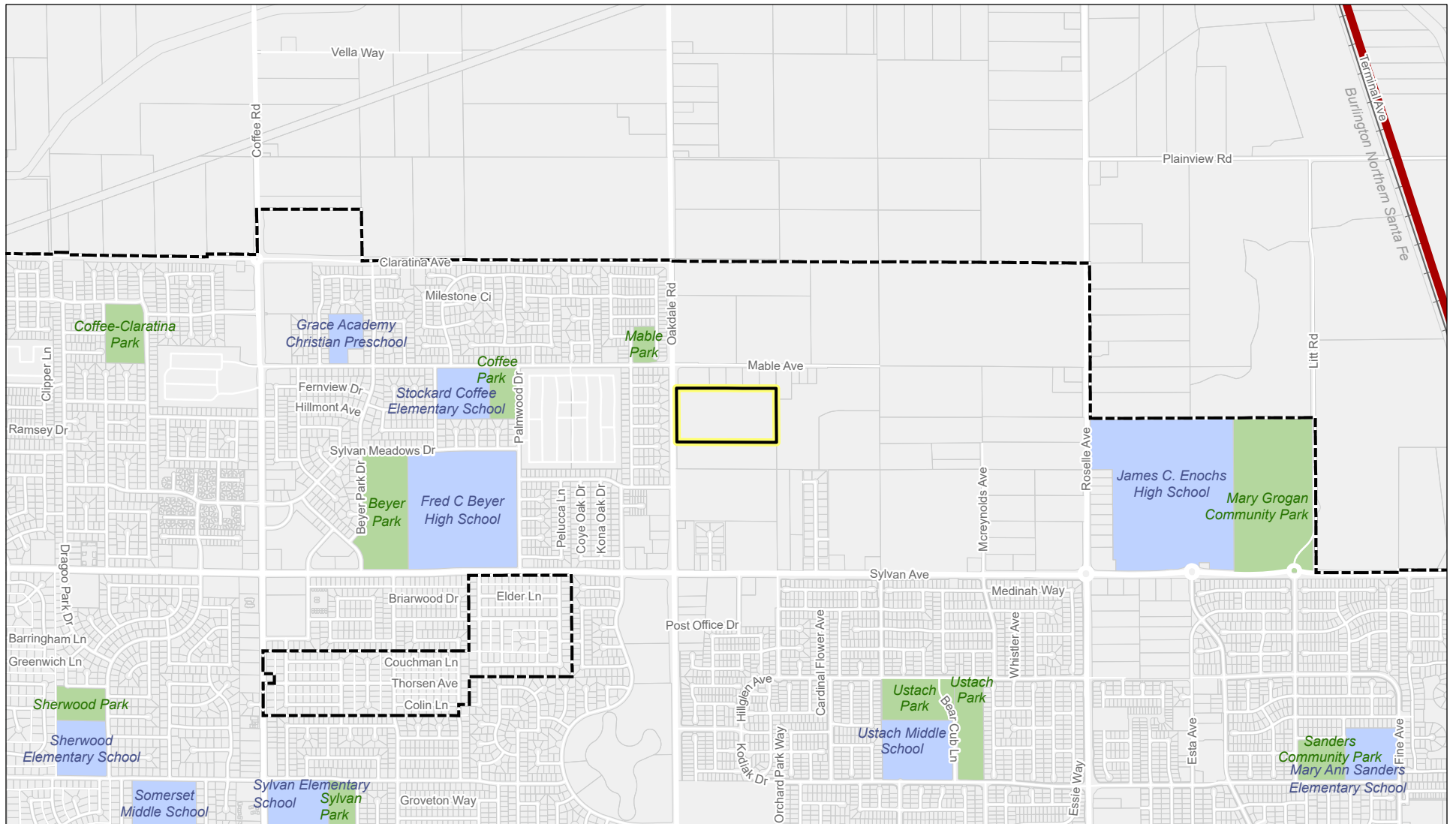
- Incorporated Area
- California Counties

Modesto Martin-Tivoli Subdivision






Figure 1. Regional Location Map



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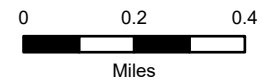


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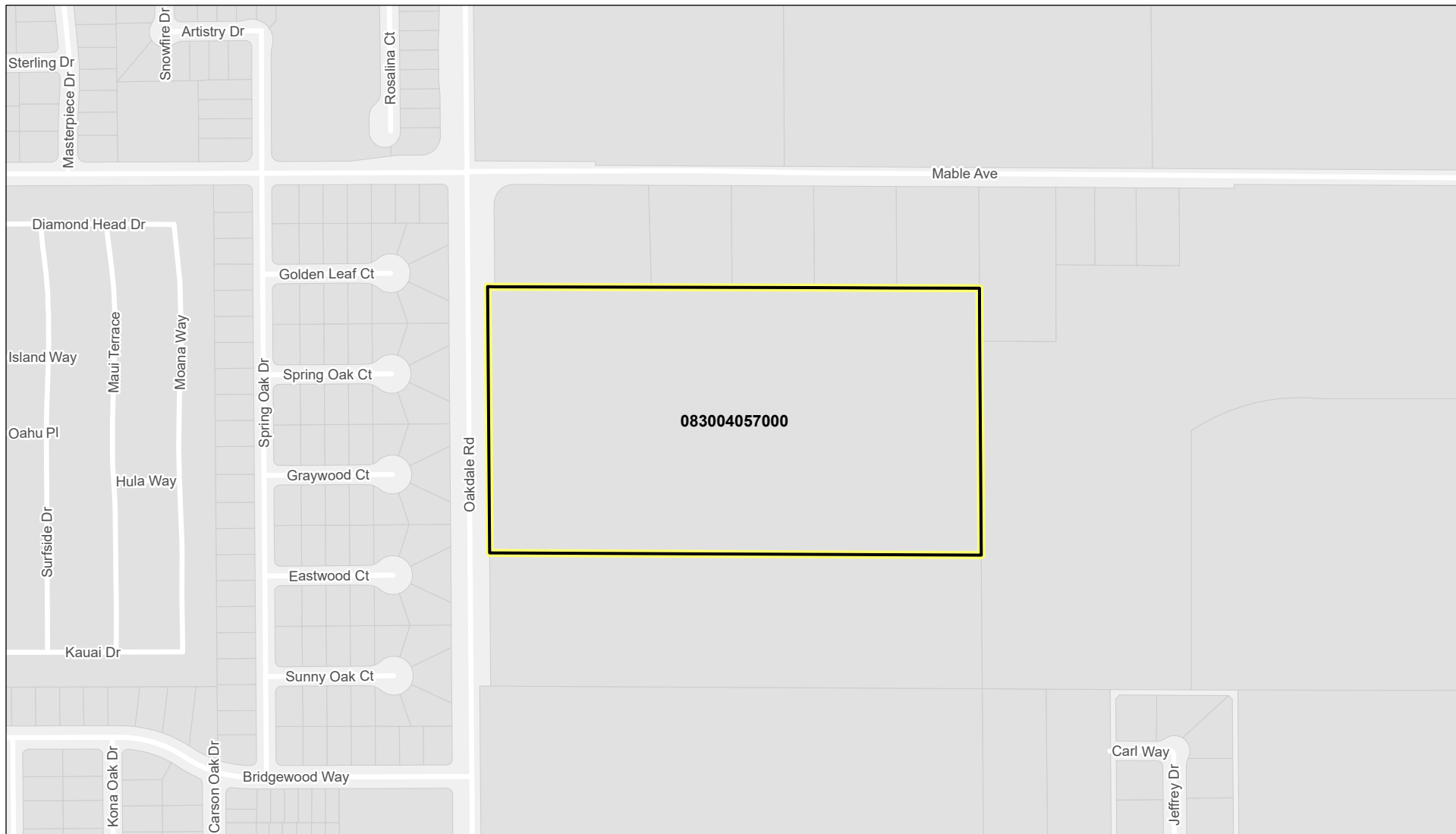
-  Project Site
-  Park
-  Modesto City Limits
-  School
-  Modesto SOI

Modesto Martin-Tivoli Subdivision


Figure 2. Project Vicinity Map



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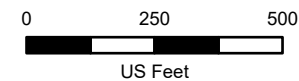


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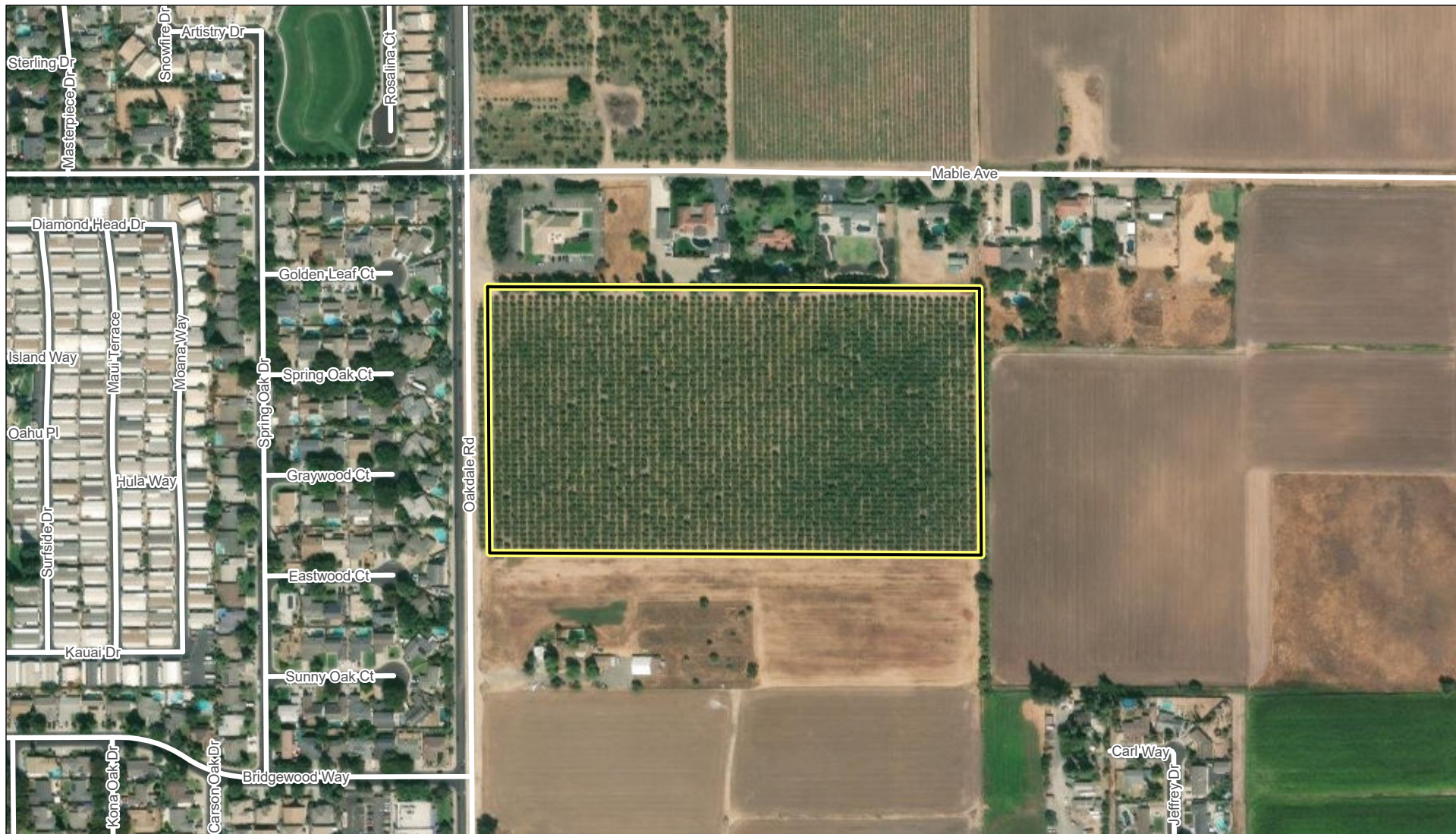
 Project Site

Modesto Martin-Tivoli Subdivision

Figure 3. Assessor's Parcel Number



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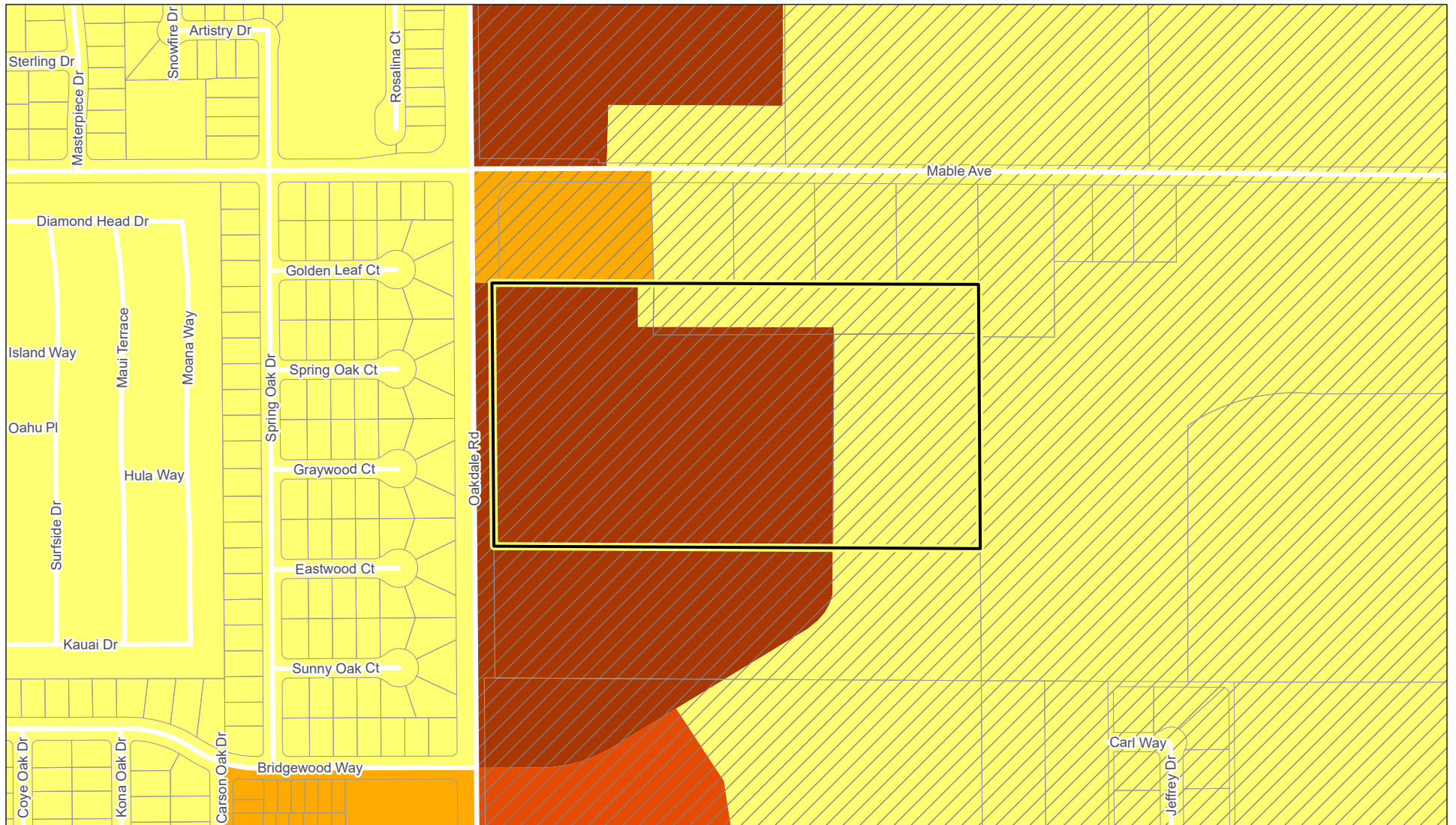
Project Site

Modesto Martin-Tivoli Subdivision

Figure 4. Aerial Map



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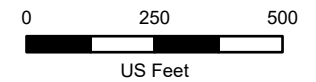
- Project Site
- Tivoli Specific Plan Area

Existing General Plan Land Use

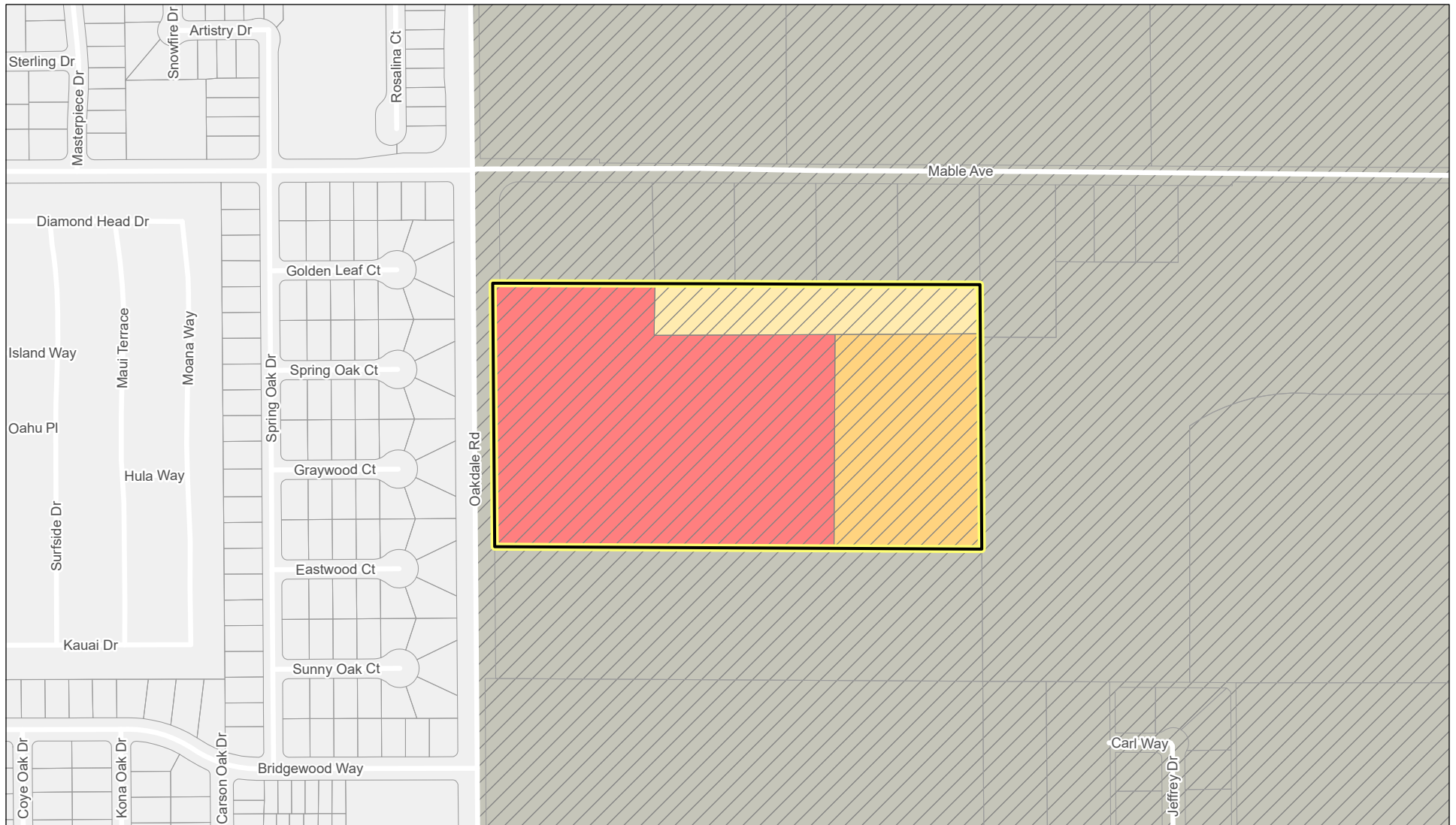
- R - Residential
- MU - Mixed Use
- C - Commercial
- RC - Regional Commercial

Modesto Martin-Tivoli Subdivision

Figure 5a. Existing Modesto General Plan Land Use



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- Project Site
- Tivoli Specific Plan Area

Tivoli Specific Plan Land Use

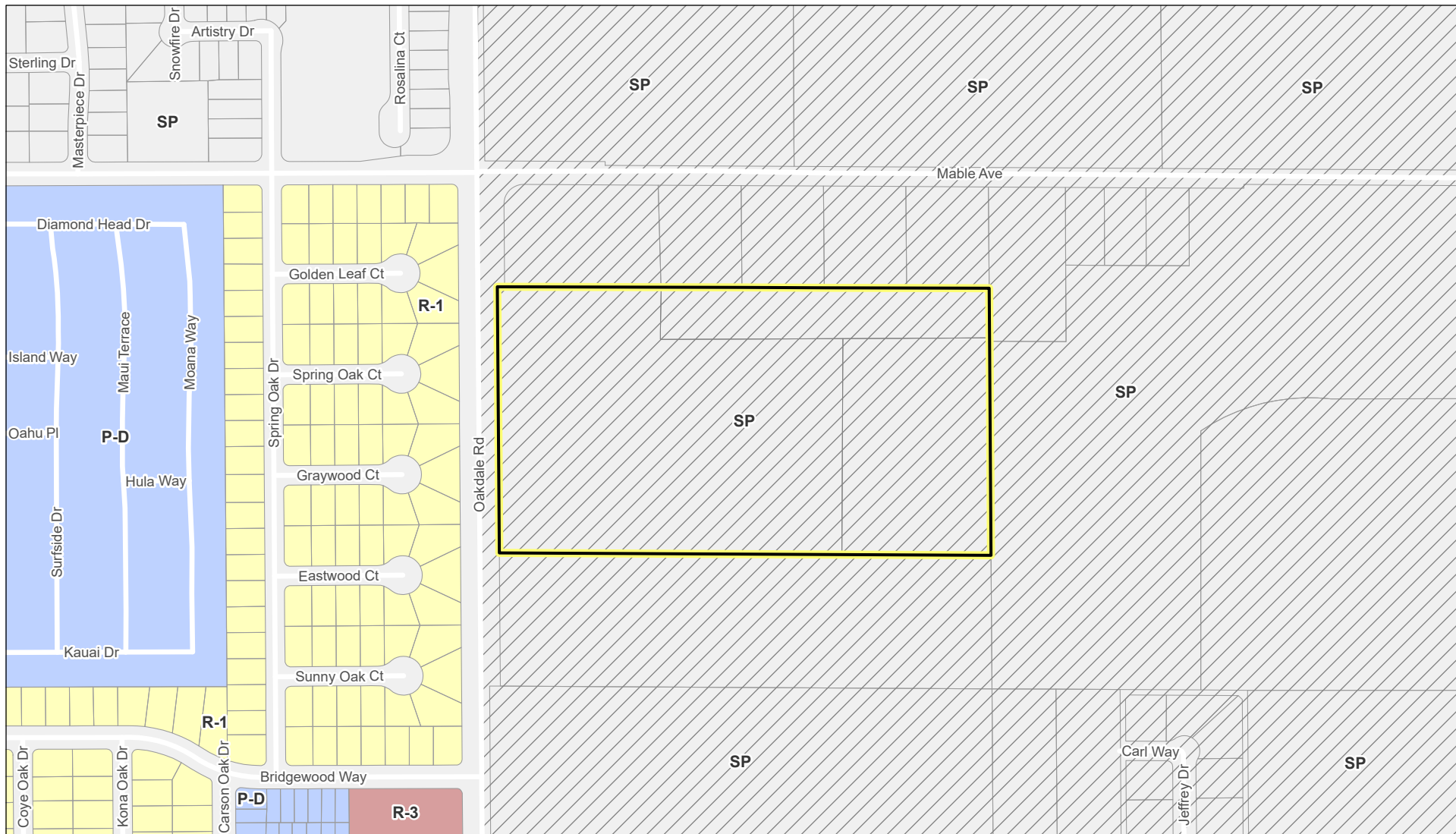
- Very Low Density Residential
- Medium High Density Residential
- Regional Serving Commercial
- Other Tivoli Specific Plan Land Use

Modesto Martin-Tivoli Subdivision

Figure 5b. Existing Tivoli Specific Plan Land Use



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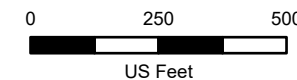
- Project Site
- Tivoli Specific Plan Area

Existing City of Modesto Zoning

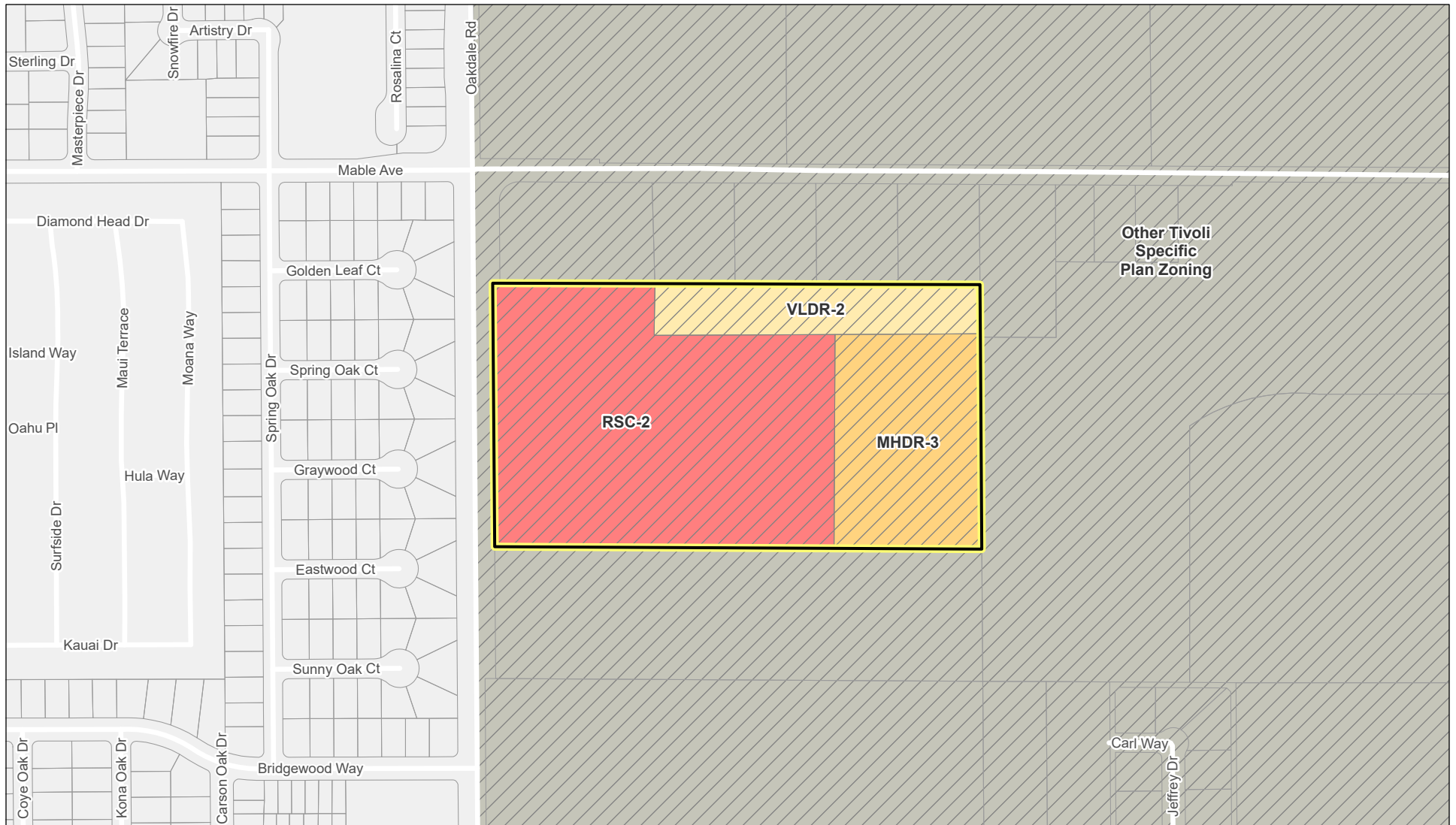
- P-D
- R-1
- R-2
- R-3
- SP

Modesto Martin-Tivoli Subdivision

Figure 6a. Existing Modesto General Plan Zoning Map



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LEGEND

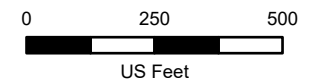
- Project Site
- Tivoli Specific Plan Area

Tivoli Specific Plan Zoning

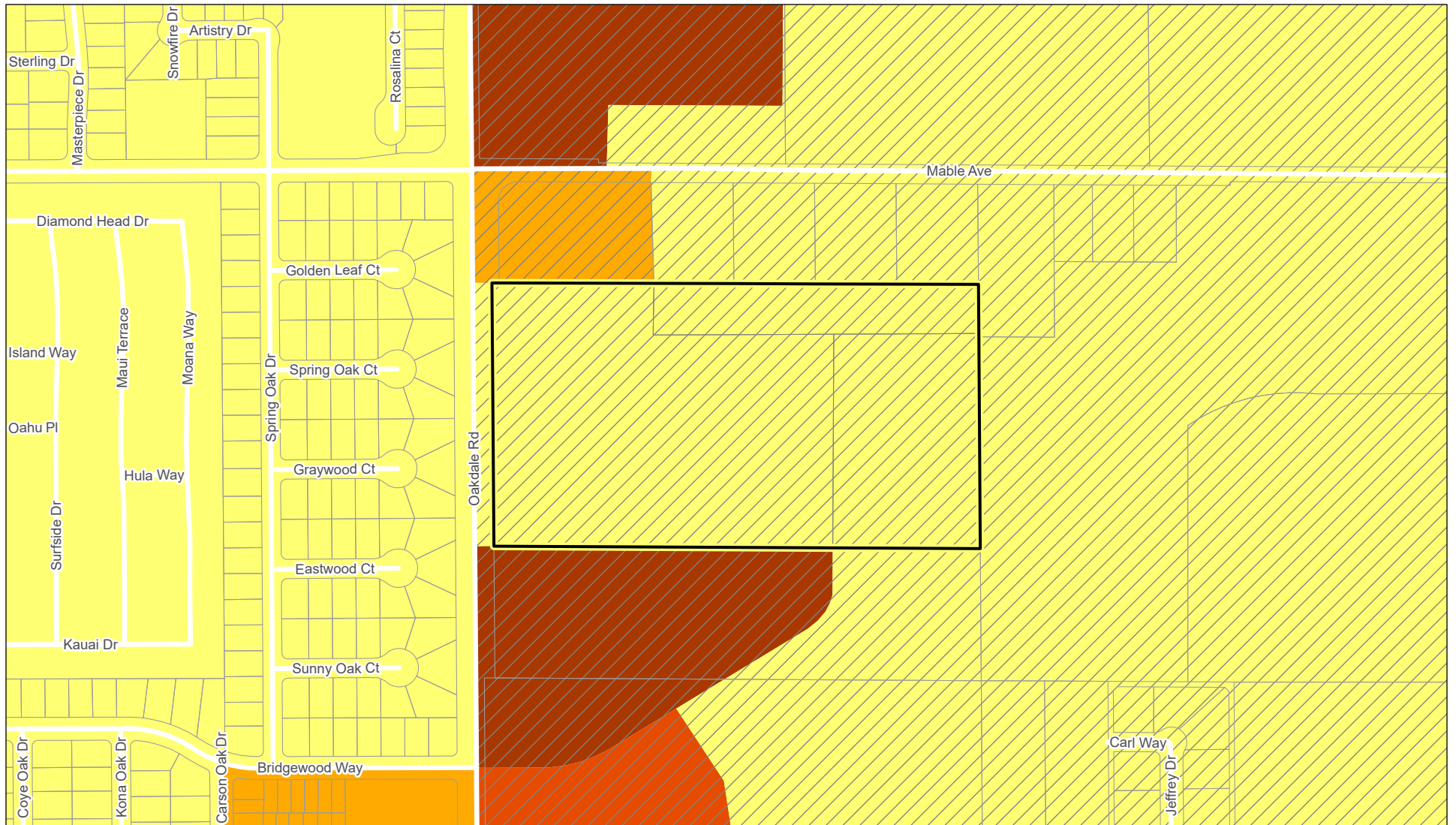
- VLDR-2
- MHDR-3
- RSC-2
- Other Tivoli Specific Plan Zoning

Modesto Martin-Tivoli Subdivision

Figure 6b. Existing Tivoli Specific Plan Zoning Map



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LEGEND

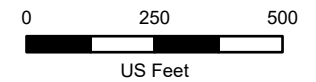
- Project Site
- Tivoli Specific Plan Area

Proposed General Plan Land Use

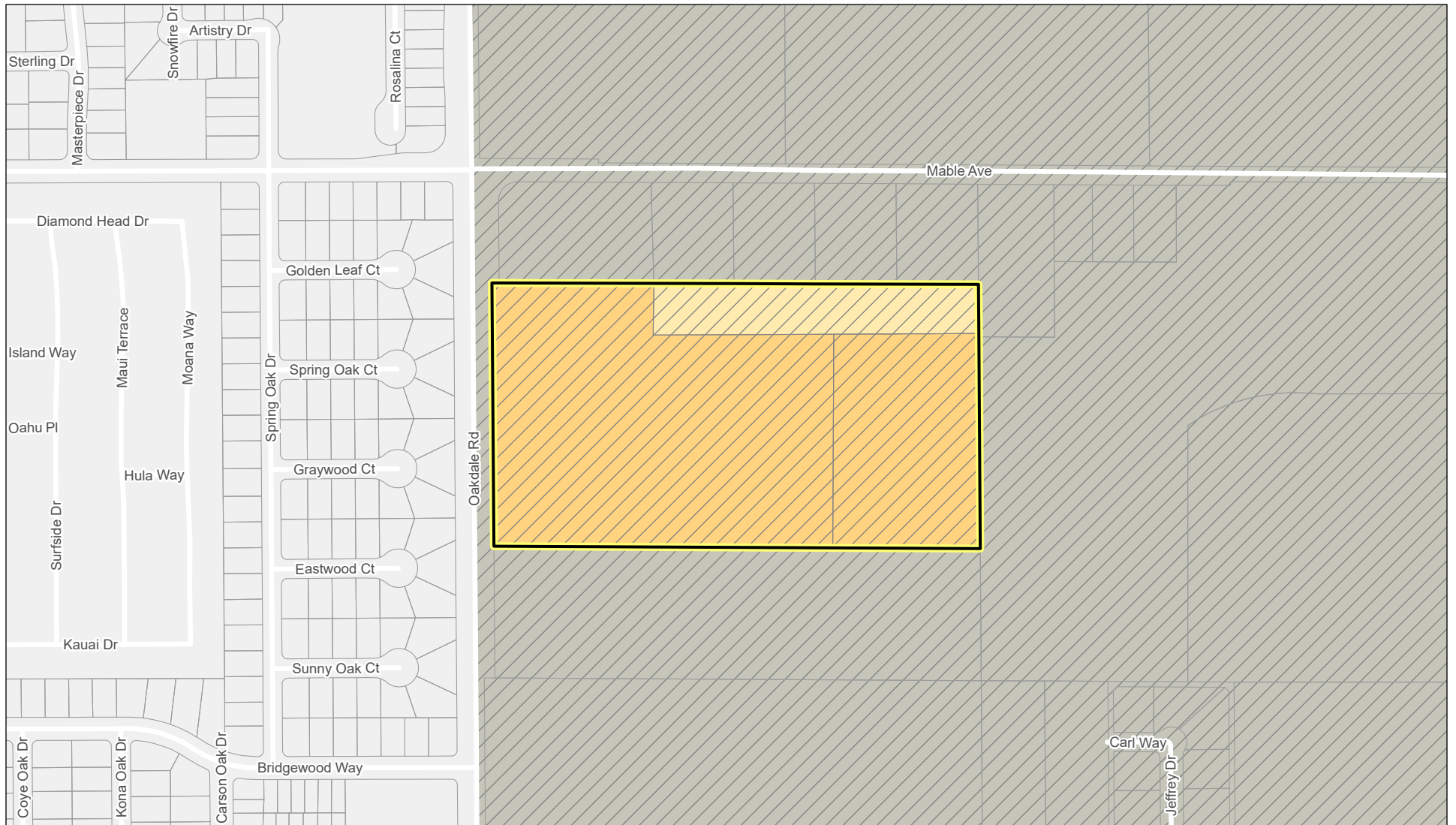
- C - Commercial
- MU - Mixed Use
- R - Residential
- RC - Regional Commercial

Modesto Martin-Tivoli Subdivision






Figure 7. Proposed Modesto General Plan Land Use



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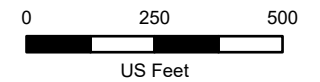


LEGEND

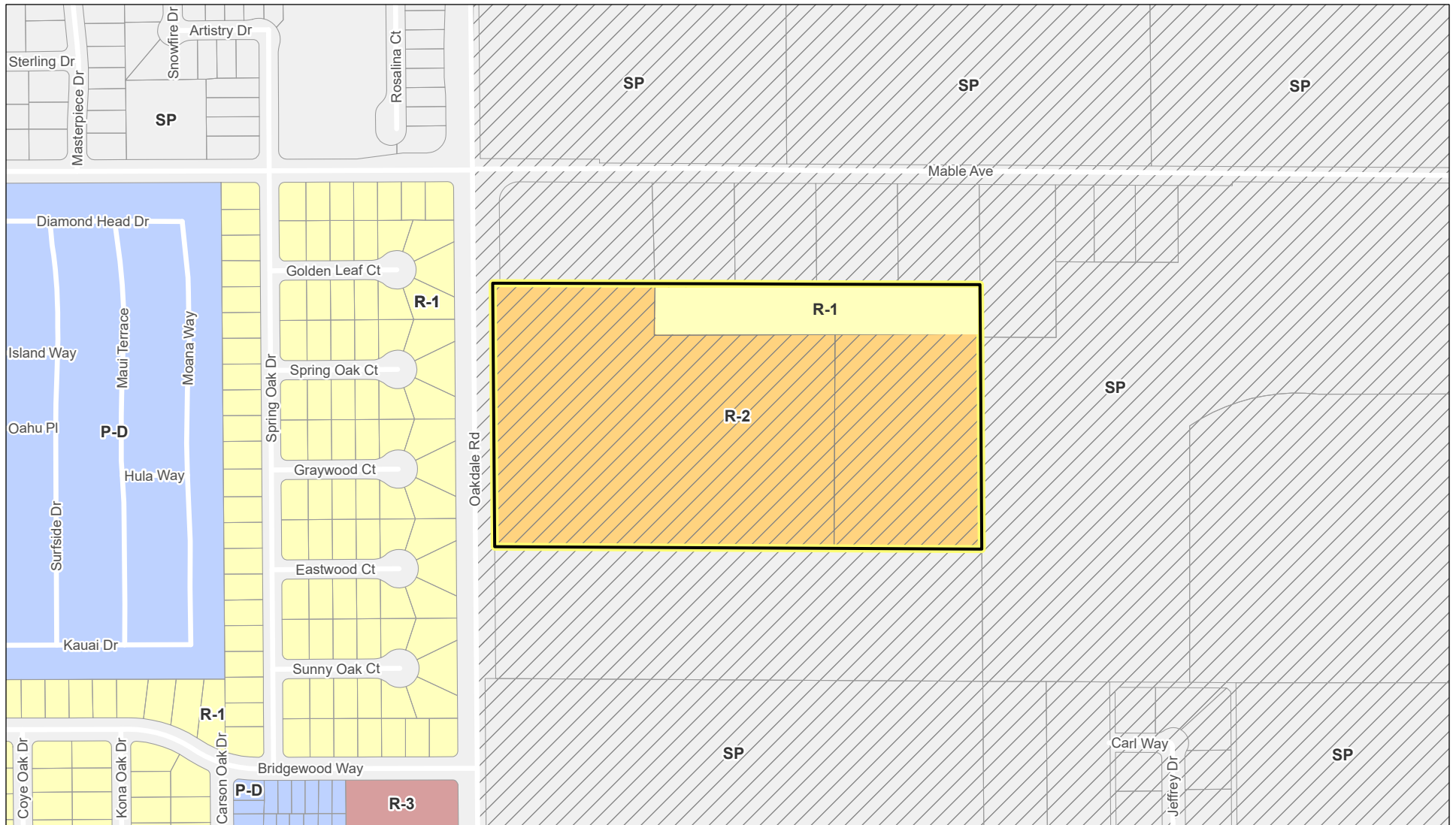
-  Project Site
-  Tivoli Specific Plan Area
- Tivoli Specific Plan Land Use**
 -  Very Low Density Residential
 -  Medium Density Residential
 -  Other TSP Land Use

Modesto Martin-Tivoli Subdivision

Figure 8. Proposed Tivoli Specific Plan Land Use



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LEGEND

- Project Site
- Tivoli Specific Plan Area

Proposed City of Modesto Zoning

- P-D
- R-1
- R-2
- R-3

Modesto Martin-Tivoli Subdivision

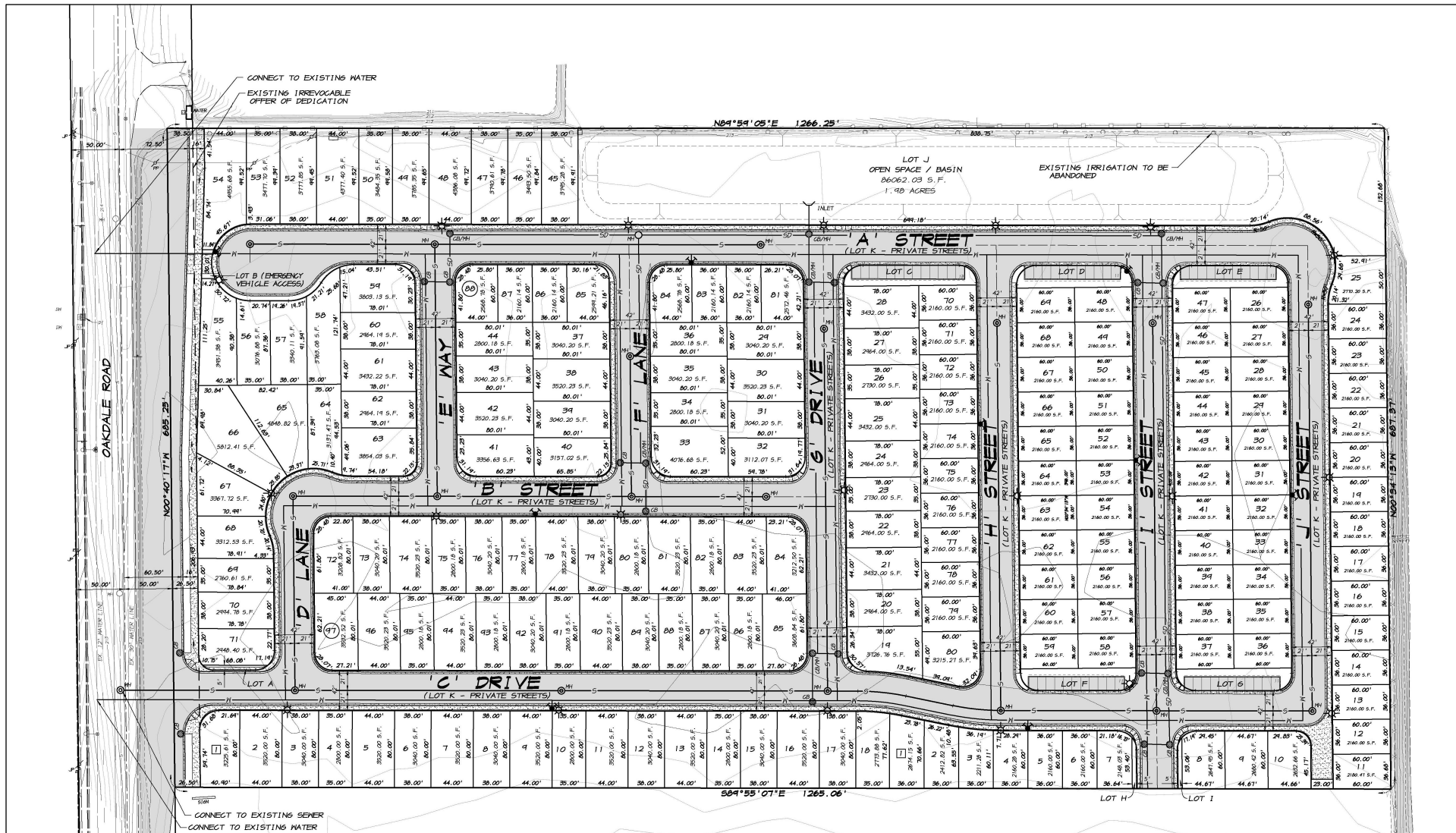
Figure 9. Proposed Modesto Zoning



0 250 500
US Feet



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Modesto Martin-Tivoli Subdivision

Figure 10. Tentative Map

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

None of the environmental factors listed below would have potentially significant impacts because of development of this project, as described on the following pages.

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

DETERMINATION

Based on 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.
X	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier 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.

Signature

Date

EVALUATION INSTRUCTIONS

- 1) 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).
- 2) 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.
- 3) 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.
- 4) "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 Section XVII, "Earlier Analyses," may be cross-referenced).
- 5) Earlier analyses 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. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of 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.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a) The significance criteria or threshold, if any, used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact to less than significant.

EVALUATION OF ENVIRONMENTAL IMPACTS

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- **Potentially Significant Impact.** This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- **Less than Significant with Mitigation Incorporated.** This response applies when 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.
- **Less than Significant Impact.** A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- **No Impact.** These issues were either identified as having no impact on the environment, or they are not relevant to the project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 21 environmental topic areas.

I. AESTHETICS

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The aesthetic characteristics of these uses will be guided by, and conform to, the design guidelines within the Modesto General Plan, the TSP and its associated EIR, and the City's Neighborhood Compatibility Guidelines. The associated design guidelines are as follows.

Modesto General Plan

Chapter III. Community Development Policies

C. Land Use Goals and Policies

Policy III.C.2. Protect Established Neighborhoods. Preserve, protect, and enhance established neighborhoods by providing sensitive transitions between and among adjoining neighborhoods, and by requiring new development – both private and public – to respect and respond to those existing physical characteristics, buildings, streetscapes, open spaces, and urban form that contribute to the overall character and livability of the neighborhood.

Policy III.C.11. Development Guidelines. Apply Neighborhood Compatibility Guidelines, Multi-Family Residential Design Guidelines, Guidelines for Small-Lot Single-Family Residential

Developments, and other adopted development guidelines, as appropriate to new construction, additions to existing structures, replacement of existing buildings/land uses, and other neighborhood improvements.

Policy III.C.12. Residential Design. For new residential development, include a range of lot sizes, varied setbacks, and orient buildings to the street (e.g. entry, windows).

TSP

5.3 Medium Density (MDR) and Medium High Density Residential (MHDR)/Multi-Family Design Criteria Guidelines and Standards

Section 5.3.2 Architectural Guidelines and Standards is intended to influence the design of multi-family residential buildings in the TSP planning area to achieve internal conformity between buildings, and external conformity to neighboring homes. These guidelines ensure that MDR developments in the TSP planning area will take into account the height, scale, form, and proximity of other single-family developments to ensure a similar aesthetic character is maintained and does not disrupt existing neighborhood styles. These design guidelines include requirements for both building and landscape features including. The site lighting criteria for Community Commercial (CC), Neighborhood Commercial (NC), and Professional Office (PO) may be generally applied to MDR uses in the TSP planning area, excluding specific requirements for light poles and lighting structures for MDR units.

5.4 General Commercial (GC), Neighborhood Commercial (NC), and Professional Office (PO)

Section 5.4.6 Lighting Guidelines and Standards is intended to influence the design of lighting fixtures in GC, NC, and PO uses. As per Section 5.3, these lighting guidelines also generally apply to MDR uses. This section dictates that a lighting plan will be required with final plan applications for developments in the TSP planning area. These requirements also set standards regarding illumination levels, color of lighting, building mounted lighting, and other specifications.

TSP Final EIR

Chapter IV. Environmental Setting, Impacts and Mitigation

L. Utilities and Services Systems

Visual Resources:

Impact C.1 Development of the project would change the existing agricultural visual character of the project site. (***Less than Significant***).

Impact C.2 Proposed commercial development under the TSP would require higher levels of outdoor lighting than surrounding residential development, creating the potential for glare on nearby residential properties. (***Less than Significant***).

Impacts C.1 and C.2 in the Draft EIR for the TSP were to determine to be less than significant and did not require mitigation measures.

City of Modesto Neighborhood Compatibility Guidelines

The Neighborhood Compatibility Guidelines are intended to provide guidance for projects identified as being subject to discretionary review for compliance with these Guidelines. This included new two-story houses, which is applicable to this Project. In areas that have other established design guidelines (such as a Specific Plan that includes its own design guidelines), these Guidelines may be used to supplement the other guidelines only where there is no conflict between them. These guidelines include general requirements for:

A. Privacy

1. Locate and design second stories, especially with regard to floor plan layout and window placement to avoid direct views into private rear yard areas of neighborhood properties.
2. Utilize clerestory windows, fixed windows with translucent/obscured glass, or offset windows, as appropriate, at window locations that would otherwise provide direct views into private rear yard areas of neighboring properties.
3. Include screening elements (such as louvers, lattice, or solid walls), as appropriate, to protect neighbors' privacy from views that would be otherwise possible from balconies, decks, landings, stairs, and similar features.
4. For all new houses, and additions on sloped properties adjacent to Dry Creek and the Tuolumne River, apply the same considerations with respect to privacy and views into neighbors' yard areas as would apply to second-story additions and new two-story houses elsewhere in the City.

B. Scale & Massing

1. Scale

- a. Design a new or modified house so that it is of a similar scale to that of the neighboring houses: it should not appear overwhelming or disproportionate in comparison.
- b. If a new house or addition is proposed to be larger than the surrounding houses, utilize design techniques (as discussed in Sections 2-6 below) to reduce the apparent mass and scale in a manner that is compatible with the neighborhood.

2. Massing

- a. If there is a pattern of footprints and buildings forms with similar complexity contributing to a common level of massing within a neighborhood, respect the established pattern with compatible designs for new houses and additions.
- b. When designing an addition to an existing house, avoid making the garage appear more prominent than it was previously as viewing from the street. Avoid designs for both additions and new houses in which the garage constitutes more than half the total width of the façade.

3. Location of Second Story

- a. To the extent possible, locate second-story additions over the living areas of a house rather than over the garage. Avoid second-story additions that are located exclusively over the garage.

- b. In predominantly single-story neighborhoods, and where existing second stories are reduced in prominence, locate a second-story addition away from the front of the house to reduce its prominence. Full height two-story front elevations are strongly discouraged in neighborhoods where there are no existing houses with full height two-story front elevations in the vicinity.
- 4. Second-Story Setbacks
 - a. In predominantly one-story neighborhoods, and where existing second stories are reduced in prominence, utilize an additional setback for the second floor to reduce the impact of increased massing from new second stories.
 - b. A full height two-story wall may be allowed at minimum setback only where there is already an adjacent house with a full height two-story wall at minimum setback along the shared property line.
- 5. Lowering the Eave Line
 - a. Utilize lowered eave lines to eliminate the need for full height two-story walls where they would be adjacent to existing single-story or lowered eave line houses.
 - b. In predominantly one-story neighborhoods, where there are no other full height two-story houses, attic conversions or attic additions with dormers are strongly encouraged instead of full height second-story additions.
- 6. Complexity of Roof Form
 - a. Where there is an established pattern or roof form, complexity, and style in a neighborhood (including shape, materials, and massing), the design of a new house or addition should be consistent with the pattern.
 - b. Utilize secondary and minor roof forms to reduce the apparent massing of the house wherever appropriate and consistent with the architectural style of the house and the neighborhood.
 - c. Added roof forms should be compatible with the slope, massing and complexity of the primary roof. Secondary roof line should mimic the primary roof line.
 - d. On additions and other added roof forms, match new roofing materials to the existing roof, unless all roofing materials on the entire house are replaced.
- 7. Solar Access
 - a. Design the location, scale and massing of an addition or new house to avoid imposing an excessive amount of shadow upon neighbors' pools or yard areas.
 - b. Design the location, scale and massing of an addition or new house to avoid imposing shadows that are detrimental to the function of neighbors' solar collectors.
- 8. Special Considerations for Sloped Properties Along Dry Creek and Tuolumne River

- a. On sloped properties adjacent to Dry Creek and the Tuolumne River, design new homes and additions to step down with the slope, and/or excavate a portion of the house into the slope. Doing so will help to avoid increasing the apparent mass with a tall wall and reduce the visual impact on neighbors and views of the house from the stream channel and public park areas.

C. Architectural Consistency

1. General Guidelines

- a) The architecture of a new house should be consistent with the architectural style and era in which its neighborhood was built.
- b) Design the architecture of an addition to be consistent with the original architecture of the existing house. Where previous additions or modifications have been inconsistent with the original architecture, restoration of the original architecture is encouraged, particularly where it will improve compatibility with the neighborhood.
- c) On second-story additions and new two-story houses, maintain architectural continuity of materials and detailing around all sides of the house, especially where two-story houses back onto and are visible from adjacent streets or other public areas.

2. Exterior Materials

- a) The types of materials used should be consistent with the architectural style of the house and compatible with the neighborhood. If the materials already used on an existing house are appropriate and compatible with the neighborhood, match the materials used on an addition to the existing materials. The materials subject to review may include (but are not limited to): roofing, siding, trim, windows and doors.
- b) Use exterior materials that are of a comparable or better quality than those already in use on the existing house and in the surrounding neighborhood. If the original materials on a house have been replaced with lower quality materials or materials that are not compatible with the neighborhood or architectural style, replacement of the incompatible materials with the original types of materials is strongly encouraged.
- c) On sloped properties adjacent to Dry Creek and the Tuolumne River, use exterior materials that are visually compatible with the natural colors, vegetation, and terrain to minimize visual impact on neighbors and views of the house from the river channel or park areas.

3. Articulation

- a) Where changes are proposed to an existing house, avoid eliminating articulation features that reduce the apparent mass of the house into smaller components.
- b) Utilize design features, materials, and appropriate architectural detailing (including the placement of windows) that will increase articulation and

break up the appearance of long walls in a manner that is consistent with the architectural style of the house and the neighborhood.

- c) The articulation of walls should relate directly back to the underlying building form and the footprint upon which it is based. Avoid decorative features that appear to be arbitrarily placed and unrelated to the underlying form of the house.

D. Lot Pattern & Neighborhood Layout

1. Lot Size

- a) The size of any new lots proposed within an established neighborhood should not vary more than twenty (20) percent from the typical existing lot. The typical lot shall be defined as that lot area, rounded to the nearest 1,000 square feet, which is most common within the “neighborhood” (as defined by the Neighborhood Compatibility Guidelines). However, consideration may be given for excluding from this evaluation those lots which, because of special circumstances, are much larger or much smaller than typical (such as the lots around a cul-de-sac, which are usually much larger than the typical lot).
- b) The width of any new lots proposed within an established neighborhood should be comparable to the average width of the existing lots fronting on the same street within the same block, assuming that the difference among existing lot widths is not so great that the average is unrepresentative of the neighborhood character.

2. Lot Configuration

- a) A flag lot should not be allowed on property which does not have a minimum depth of 200 feet.
- b) A flag lot should not be allowed on property with a total width of greater than 100 feet and otherwise sufficient to accommodate two minimum width lots. This restriction may be adjusted to accommodate minimum setback requirements for an existing structure on the property.
- c) That portion of a flag lot occupied by the driveway and providing access to the buildable portion of the lot should not be counted toward minimum lot area, nor should it be included in total lot area for the purpose of calculating lot coverage. The buildable portion of a flag lot, not counting the driveway portion, should meet the minimum lot size requirement for the zone.

3. Parking Arrangements, Garages and Driveways

- a) New garages, whether part of an addition or a new house, should be consistent with the prevailing pattern in the neighborhood with respect to location of the garage relative to the house, the size and configuration of the garage, and the manner of access.
- b) In a neighborhood with existing alleys, utilize the alleys for new houses and additions in a manner that is consistent with the neighborhood.

Where existing garages are located in back and accessed from an alley, locate new garages in back with access from the alley.

- c) Where garages are accessed from the street, consider design solutions for reducing prominence of the garage, for example: recess the garage behind the front of the house; use two single-width garage doors in place of one double-width door; utilize a side-entry garage, when it is located entirely in front of the house, instead of facing it toward the street; or add a porch or prominent entry feature to draw attention away from the garage. In general, garages should be reduced in prominence as much as possible, and remain subordinate to the primary function of a house as residence, according to what is compatible with the neighborhood character.
- d) New houses and additions in a neighborhood of garage-forward house designs do not need to maintain a garage-forward design in order to be compatible with the neighborhood, as long as they are consistent with other essential design characteristics in the neighborhood.
- e) Place driveways so as to minimize harm to existing street trees and preserve opportunities to add new street trees. Consider narrowing or tapering the driveway toward the street; a driveway does not need to be as wide as the garage throughout its entire length. Minimize the expanse of pavement in front yards as much as practical.

Application of these Guidelines will vary between each proposal and will require review on a case-by-case basis. The review process is intended to help achieve development that strikes a balance between the sometimes-competing interests of the project applicant and the City. The City generally does not dictate styles of design, instead preferring to encourage creativity and variety while advocating compatibility in scale and “flavor” with the surrounding neighborhoods.

Responses to Checklist Questions

a) Have a substantial adverse effect on a scenic vista? Response: The General Plan does not designate specific scenic vistas on the Project site or vicinity. There are no scenic vistas on the Project site. Therefore, there is ***no impact*** related to a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? Response: The Project site is not located within view of a state scenic highway. Interstate 5 (I-5) is the only highway section in Stanislaus County listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System. This highway segment runs north-south adjacent to the California Aqueduct along the western hills of the Central Valley. The City of Modesto is located approximately 12 miles southwest of I-5, and the Project site is not visible from this highway segment. Therefore, there is ***no impact*** related to a state scenic highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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? Responses: Implementation of the proposed Project would change the existing visual character of the Project site from a primarily agricultural site (orchard) to an urbanized site. Impacts related

to a change in visual character are largely subjective and very difficult to quantify. People have different reactions to the visual quality of a project or a project feature, and what is considered “attractive” to one viewer may be considered “unattractive” to other viewers.

The agricultural lands (orchard) on the Project site provide visual relief from urban and suburban developments, and help to define the character of a region. The greatest impact would be to those residents that live immediately adjacent to the Project site and are used to seeing the existing orchard (i.e. the residents to the north and west). There would also be an impact to people that regularly drive along Oakdale Road and are used to seeing the existing orchard.

The loss of agricultural lands can have a cumulative impact on the overall visual character and quality of a region. However, the change in visual quality and character of the Project site from agricultural lands to urban uses was previously anticipated and approved for the Project site through the adoption of the TSP. While the approval was for different land uses, the change of land use from the RC to R in the General Plan, and from RSC, and MHDR to MDR in the TSP, does not materially change the impacts to visual quality and character of the Project site that were already anticipated under the TSP.

The General Plan specifically identifies areas along the Tuolumne River and Dry Creek as significant visual features. The Tuolumne River and Dry Creek are not within the boundary of the Project site, nor are they visible from the Project site. The proposed Project will have no impact on these visual features.

Project implementation would introduce residential uses, as well as supporting infrastructure into an area that was planned and approved for a mix of residential and commercial uses. The proposed uses are unlikely to degrade the existing character of the Project site in comparison to the approved uses under the TSP. Surrounding agricultural and residential land uses would remain unchanged.

The City design standards, including the Tivoli Specific Plan Design Guidelines, ensure quality and cohesive design of development projects and ensure that public views from transportation corridors are of the highest quality. The City design standards are incorporated into site plans and improvement plans. Consistency with the Tivoli Specific Plan Design Guidelines would ensure a ***less than significant*** impact relative to this topic.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? Response: Implementation of the proposed Project would introduce new sources of light and glare. New sources of glare would occur primarily from the windshields of vehicles travelling to and from the Project site. There is also the potential for reflective building materials and windows to result in increases in daytime glare. Residential lighting would be consistent with other residential areas throughout Modesto. A detailed lighting plan has not been prepared at this design stage, but will at future stages (i.e. street lighting plan at improvement plan phase, building lighting at the building plan phase). These areas will have plans developed during site plan review, but for the purposes of this analysis, it has been assumed that streetlights, exterior building lighting, and safety lighting will be installed throughout the residential areas consistent with other typical developments with these uses in Modesto.

Section 9-8.18 of the Modesto Municipal Code contains standards and provisions related to exterior lighting for developments. The primary purpose of this section is to regulate lighting to balance the safety and security needs for lighting with the City’s desire to prevent emissions of light or glare beyond the property line, or upward into the sky.

Without a detailed lighting plan, increase of light spillover and nighttime lighting to adjacent properties is a potentially significant impact. The City has existing standards that require a street lighting plan to be completed as part of the improvement plans for review and approval by the City. All proposed outdoor lighting to meet applicable city standards regulating outdoor lighting to minimize any impacts resulting from outdoor lighting on adjacent properties. Additionally, all outdoor lighting sources of 1,000 lumens or greater must be fully shielded. Implementation of the City's existing lighting standards would reduce potential impacts associated with nighttime lighting and light spillage onto adjacent properties to a ***less than significant*** level.

II. AGRICULTURE AND FORESTRY RESOURCES

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				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

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of agricultural impacts will be guided by, in part, the policies and standards within the Modesto General Plan, the TSP, and its associated EIR.

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

D. Agricultural Resources Policies

Policy VII.D.4[a]. Do not annex agricultural land unless urban development consistent with the General Plan has been approved by the City.

Policy VII.D.4[b]. Support the continuation of agricultural uses on lands designated for urban uses until urban development is imminent.

Policy VII.D.4[c]. Encourage the County to retain agricultural uses on lands surrounding the Urban Area General Plan area and on lands within the Urban Area General Plan area pending their annexation to the City or development by mutual agreement with the County.

Policy VII.D.4[d]. Where necessary to promote planned City growth, encourage development of those agricultural lands that are already compromised by adjacent urban development or contain property required for the extension of infrastructure or other public facilities, before considering urban development on agricultural lands that are not subject to such urban pressures.

Policy VII.D.4[e]. For any subsequent project that is adjacent to an existing agricultural use, the project proponent may incorporate measures to reduce the potential for conflicts with the agricultural use. Potential measures to be implemented may include the following:

1. Include a buffer zone of sufficient width between proposed residences and the agricultural use; and,
2. Inform residents about the possible exposure to agricultural chemicals.

TSP Final EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

B. Agricultural Resources:

Impact B.1 Implementation of the proposed Project would directly result in the permanent loss of Prime Farmland. (***Significant***).

Impact B.2 Development of the proposed Project may burden continued agricultural operation surrounding the project site, and within the Project site, prior to development under the proposed Specific Plan. (***Less than Significant***).

Impact B.3 Implementation of the proposed Project would incrementally contribute to the cumulative loss of prime agricultural land in the Modesto area and in eastern Stanislaus County. (***Significant***).

Responses to Checklist Questions

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?

Response: The proposed Project represents a General Plan Amendment and rezone to revise the land use and zoning designations established by the Previously Approved Project within the 19.95-acre Project site. The potential for the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) was addressed in the EIR for the previously approved TSP.

The proposed Project is within the boundary of the TSP and proposes a rezone of the Project site from RSC, and MHDR to MDR, with the VLDR remaining the same. This change of use would result in the same physical environmental impact that was already anticipated in the TSP, which assumes that the Project site would convert from an agricultural use to an urban use. The proposed amendments do not cause an impact greater than what has already been considered in the EIR for the TSP.

Development of the site would extend the urbanized area incrementally northward and eastward as originally anticipated in the General Plan and TSP. The TSP concluded that the loss of Prime Farmland would be a significant, irreversible, and unavoidable impact, and mitigation was recommended to minimize the impact to the extent possible. Consistent with the conclusions from the TSP EIR, the direct loss of Prime Farmland would remain a significant, irreversible, and unavoidable impact of the project. The City Council has considered farmland mitigation programs, and has adopted a statement of overriding considerations for the conversion of this prime farmland. There are no new impacts not already considered in the statement of overriding considerations.

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

Response: The Project site has been annexed into the city of Modesto and is not under a Williamson Act contract. The proposed Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. Implementation of the proposed Project would have ***no impact*** relative to this issue.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?

Response: The Project site is not forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526). The proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Implementation of the proposed Project would have ***no impact*** relative to this issue.

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

Response: The Project site is not forest land. The proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. Implementation of the proposed Project would have ***no impact*** relative to this issue.

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?

Response: The Project site does not contain forest land, and there is no forest land in the vicinity of the Project site. The Project site would result in a conversion of the farmland to non-farmland. This impact has already been considered with the approval of the TSP, and the certification of the TSP EIR. The proposed Project does not involve any other changes in the existing environment not disclosed under the previous responses 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. Implementation of the proposed Project would have ***no impact*** relative to this issue.

III. AIR QUALITY

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of air quality impacts will be guided by, in part, the policies and standards within the Modesto General Plan, the TSP, and its associated EIR.

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

H. Air Quality

Air quality policies are distributed throughout the proposed General Plan amendment chapters, recognizing the comprehensive structure of this integrated policy document. The following Air Quality and Climate Change-related policies would apply throughout the UAGP planning area.

Policy VII.H.2[a]. Implement measures to reduce motor vehicle use and related ozone precursor and PM10 emissions through changes to the transportation infrastructure. Potential measures to be implemented may include those shown in Section V-2 of the Final Master Environmental Impact Report.

Policy VII.H.2[b]. Implement measures to reduce vehicle use and associated emissions related to existing and future land use development in the City of Modesto. Potential measures to be implemented may include those shown in Section V-2 of the Final Master Environmental Impact Report.

Policy VII.H.2[c]. Implement measures to reduce emissions associated with energy use by residences and businesses. Potential measures to be implemented may include those shown in Section V-2 of the Draft Master EIR.

Policy VII.H.2[d]. The City of Modesto recognizes the efforts of the San Joaquin Valley Air Pollution Control District to identify the cumulative transportation and air quality impacts of all General Plan amendments approved during the previous year. This measure is intended to

track the effectiveness of current air quality–related programs and guide revision to these programs through periodic review of cumulative air quality impacts in the City.

The City of Modesto encourages employers to implement the following measures:

1. In-house matching services (for carpools and vanpools) at employers with over 100 weekday employees, or at large development sites occupied by several smaller employers, or coordination with Caltrans' (Commuter Computer" program;
2. Employer-based dissemination of commute information;
3. Employer subsidies for transit passes and incorporation of transit stop facilities into site design;
4. A program to guarantee rideshare participants a ride home in case of emergency;
5. Flex-time scheduling;
6. Site plan design that encourages pedestrian movement between adjacent land uses;
7. Incentives such as preferred parking for carpools;
8. Encouraging submission of site plans featuring mixed land uses or "neo traditional" design; and,
9. Encouraging employers to experiment with telecommuting options, where feasible.

The following policies are intended to reduce air quality impacts through inter-agency coordination.

Policy VII.H.2[e]. Work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.

Policy VII.H.2[f]. Coordinate with other jurisdictions and other regional agencies in the San Joaquin valley to establish parallel air quality programs and implementation measures (trip reduction ordinances, indirect source programs, etc.)

Policy VII.H.2[g]. Implement measures to reduce emissions associated with future development through the CEQA review process. Section V-2 of the MEIR describes those measures to be implemented, as well as additional measures that may be implemented at the discretion of the City.

Policy VII.H.2[h]. Consult with the SJVAPCD during CEQA review for discretionary projects with the potential for causing adverse air quality impacts.

Policy VII.H.2[i]. Consider supporting investment in geographic information system technology.

The following policies are intended to reduce air quality impacts through public outreach and education programs.

Policy VII.H.2[j]. Work to improve the public's understanding of the land use, transportation, and air quality link.

Policy VII.H.2[k]. Encourage local public and private groups to provide air quality education programs.

The following policies are intended to minimize exposure of the public to toxic air contaminants (TACs) and noxious odors from industrial, manufacturing, and processing facilities.

Policy VII.H.2[l]. Encourage new air pollution sources such as, but not limited to, industrial, manufacturing, and processing facilities to be located an adequate distance (based on pollutant dispersion characteristics, site orientation, prevailing winds, etc.) from residential areas and other sensitive receptors.

Policy VII.H.2[m]. Implement measures to reduce the temporary, yet potentially significant, local air quality impacts from construction activities. Potential measures to be implemented may include those measures shown in Section V-2 of Master Environmental Impact Report.

Policy VII.H.2[n]. Require residential development projects and projects categorized as sensitive receptors (hospitals, schools, convalescent homes, etc.) to be located an adequate distance from existing and potential sources of toxic and/or odorous emissions such as freeways, major arterials, industrial sites, refuse transfer or disposal site, and hazardous materials locations.

The following policies are intended to accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the City of Modesto.

Policy VII.H.2[o]. Determine project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.

Policy VII.H.2[p]. Ensure that identified air quality impacts are consistently and fairly mitigated.

Policy VII.H.2[q]. Ensure all air quality mitigation measures are feasible, implementable, and cost effective.

Policy VII.H.2[r]. Identify the cumulative transportation and air quality impacts of all General Plan amendments approved during the previous year.

Policy VII.H.2[s]. Reduce the air quality impacts of development projects that may be insignificant by themselves, but cumulatively are significant.

Policy VII.H.2[t]. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Policy VII.H.2[u]. Review of new development shall be coordinated with SJVAPCD staff to ensure all projects subject to the SJVAPCD Rule 9510 (Indirect Source Review) comply fully with the rule. This rule fulfills the SJVAPCD's emissions reduction commitments in the PM10 and Ozone Attainment Plans through emission reductions from the construction and use of development projects through design features and onsite measures. Rule 9510 applies to any application that seeks to gain a final discretionary approval for a development project, or any portion thereof, which meets certain minimum thresholds.

Policy VII.H.2[v]. A Construction Health Risk Assessment shall be required on a project-by-project basis if, at the direction of SJVAPCD after applicant consultation, the specific project is considered to have a potentially significant project-level health risk impact, through refined modeling using 2015 OEHHA guidance (or the latest accepted methodology), to identify impacts and, if necessary, include measures determined by SJVAPCD to reduce exposure.

Policy VII.H.2[w]. Future development that includes sensitive receptors (such as schools, hospitals, daycare centers, or retirement homes) located within the setback distances from highways, railroads, local roadways, and stationary sources specified below shall require site-specific analysis to determine the level of TAC and PM_{2.5} exposure. This analysis shall be conducted following methodology and procedures recommended by SJVAPCD and OEHHA. If the site-specific analysis reveals significant exposures, such as cancer risk greater than 20 in one million or acute or chronic hazards with a Hazard index greater than 1.0, additional measures (described below) shall be required to reduce the risk such that the threshold is not exceeded.

Setback screening distances:

- a) Gasoline dispensing facilities: 300 feet for large facilities (3.6 million gallons of throughput a year or more) and 50 feet for smaller facilities;
- b) Dry cleaning facilities: 300 feet for facilities that emit Perchloroethylene;
- c) Distribution centers: 1,000 feet;
- d) Chrome platers: 1,000 feet;
- e) Freeways, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day or more: 500 feet;
- f) BNSF rail line: 800 feet from 2020-2024, and 500 feet for 2025 and later; and,
- g) UP rail line: 200 feet east of the rail line and 300 feet west of the rail line from 2020-2024, and 100 feet east of the rail line and 200 feet west of the rail line for 2025 or later.

Future non-residential developments containing potentially significant TAC sources would be evaluated in consultation with SJVAPCD to ensure that they do not cause a significant health risk in terms of excess cancer risk greater than 20 in one million, or acute or chronic hazards with a Hazard Index greater than 1.0. This analysis shall be conducted following methodology and procedures recommended by SJVAPCD and OEHHA. If the site-specific analysis reveals significant exposures, additional measures shall be required as described below to reduce the risk to below the threshold.

If the analysis shows the cancer risk exposure is significant, then the project sponsor shall submit performance specifications and design details to demonstrate that lifetime residential exposures would be reduced to a level of less-than-significant under the applicable threshold subject to approval by the City. The specifications or design standards may include the following or other comparable measures:

- i. Install air filtration systems rated MERV-13 or higher and a maintenance plan for the air filtration system shall be implemented.
- ii. Plant trees and/or vegetation between sensitive receptors and pollution sources, if feasible. Trees that are best suited to trapping particulate matter shall be planted, including the following: Pine (*Pinus nigra* var. *maritime*), Cypress (*X Cupressocyparis leylandii*), Hybrid poplar (*Populus deltoids X trichocarpa*), and Redwoods (*Sequoia sempervirens*).
- iii. Design sites to locate sensitive receptors as far as possible from any freeways, roadways, diesel generators, distribution centers, and rail lines.

- iv. Locate operable windows, balconies, and building air intakes as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods.

Policy VII.H.2[x]. Coordinate land use planning to prevent new odor complaints. Consult with SJVAPCD, as necessary, to identify the potential for odor complaints from various existing and planned or proposed land uses and development projects. Prohibit new sources of odors that have the potential to result in frequent odor complaints unless it can be shown that potential odor complaints can be mitigated where feasible. Prohibit sensitive receptors from locating near odor sources where frequent odor complaints would occur, unless it can be shown that potential odor complaints can be mitigated where feasible.

The following policies are consistent with the SJVAPCD Air Quality Guidelines for General Plans and are intended to integrate land use planning, transportation planning, and air quality planning to make the most efficient use of public resources and to create a healthier and more livable environment.

Policy VII.H.2[y]. Consider air quality when planning the land uses and transportation systems to accommodate the expected growth in this community.

Policy VII.H.2[z]. All transportation improvement projects to be included in regional transportation plans (TRP, RTIP, CMP, etc.) should be consistent with air quality goals and policies of the General Plan.

Policy VII.H.2[aa]. Consult with transit providers to determine project impacts on long-range transit plans and ensure that impacts are mitigated where feasible.

Policy VII.H.2[bb]. Work with the Housing Authority, transit providers, and developers to encourage the construction of low-income housing developments that use transit-oriented and pedestrian-oriented design principles.

Policy VII.H.2[cc]. Work with Caltrans and the Regional Transportation Planning Agency to minimize the air quality, mobility, and social impacts of large-scale transportation projects on existing neighborhoods.

The following policies are intended to ensure that new development provides the facilities and programs that improve the effectiveness of transportation control measures and congestion management programs.

Policy VII.H.2[gg]. Work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives.

Policy VII.H.2[hh]. Work to establish public/private partnerships to develop satellite and neighborhood work centers for telecommuting.

Policy VII.H.2[ii]. Encourage the development of state-of-the-art communication infrastructure linked to the rest of the world.

The following policies are consistent with the SJVAPCD Air Quality Guidelines for General Plans and are intended to reduce emissions of PM₁₀ and other particulates with local control potential.

Policy VII.H.2[jj]. Reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible in accordance with the requirements of SJVAPCD Regulation VII. Regulation VIII was adopted to reduce the amount of particulate matter suspended in the atmosphere as a result of emissions generated from anthropogenic (man-made) fugitive dust sources.

Policy VII.H.2[kk]. Require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions in accordance with the requirements of SJVAPCD Regulation VIII and are appropriate to the scale and intensity of use.

Policy VII.H.2[ll]. Reduce PM₁₀ emissions from City-maintained roads to the maximum extent feasible

The following controls are required to be implemented at all construction sites.

Policy VII.H.2[mm]. Effectively stabilize dust emissions using water, chemical stabilizer/suppressant, cover with a tarp or other suitable cover or vegetative ground cover, all disturbed areas, including storage piles, which are not being actively utilized for construction purposes.

Policy VII.H.2[nn]. Effectively stabilize dust emissions using water, chemical stabilizer/suppressant, all onsite unpaved roads and off-site unpaved access roads.

Policy VII.H.2[oo]. Effectively control fugitive dust emissions utilizing application of water or by presoaking all land clearing, grubbing scraping, excavation, land leveling, grading, cut & fill, and demolition activities.

Policy VII.H.2[pp]. Wet all exterior surfaces of buildings that are more than six stories tall during demolition.

Policy VII.H.2[qq]. When materials are transported off site, cover all materials, or effectively wet them to limit visible dust emissions, and maintain at least six inches of freeboard space from the top of the container.

Policy VII.H.2[rr]. Limit operations or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday (the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)

Policy VII.H.2[ss]. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, effectively stabilize said piles for fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

Policy VII.H.2[tt]. Within urban areas, immediately remove trackout when it extends 50 or more feet from the site at the end of each workday.

Policy VII.H.2[uu]. Prevent carryout and trackout for any site with 150 or more vehicle trips per day.

The following measures should be implemented at construction sites when required to mitigate significant PM₁₀ impacts (note, these measures are to be implemented in addition to Regulation VIII requirements).

Policy VII.H.2[vv]. Limit traffic speeds on unpaved roads to 15 mph.

Policy VII.H.2[ww]. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent (1%).

Policy VII.H.2xx]. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.

Policy VII.H.2[yy]. Install wind breaks at windward side(s) of construction areas.

Policy VII.H.2[xx]. Suspend excavation and grading activity when winds exceed 20 mph (regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent (20%) opacity limitation).

Policy VII.H.2[aaa]. Limit the area subject to excavation, grading, and other construction activity at any one time.

TSP Final EIR

E. Air Quality

Climate and Meteorology

The climate of the San Joaquin Valley is generally controlled by a semi-permanent subtropical high-pressure system located in the northern Pacific Ocean. In the summer, this high-pressure system provides clear skies, high temperatures, and low humidity. Very little precipitation occurs during the summer months because storms are blocked by the high-pressure system. Beginning in the fall and continuing through the winter, the high-pressure system weakens and moves south, allowing storms to move through the area. Temperature, winds, and rainfall are more variable during the winter months. Winter weather patterns include periods of stormy weather with rain and gusty winds, clear weather that can occur after a storm, or persistent fog.

The predominant annual wind direction in the project area is from the north through west, northwest. These winds mainly occur through the spring, summer, and fall. In the winter, the winds tend to be either from the northwest or from the southeast depending on the stormflow. Persistent fog forms due to low wind speeds and stable thermal conditions during the winter or nighttime. Higher winds during daylight hours and during the spring, summer, and fall allow region-wide transport of pollutants throughout the valley.

Impact E.1. Emissions of criteria pollutants during project construction would contribute to existing violations of the ambient air quality standards in the region. (***Significant and Unavoidable***)

Mitigation Measure E.1. The construction plans for each group of building permits shall incorporate the following recommendations from the District to minimize emissions during construction phases:

- *The project developers shall review Regulation VIII of the San Joaquin Valley Air Pollution Control District regulations and submit a compliance plan to the City of Modesto prior to commencing any phase of construction. The compliance plan must demonstrate that the current requirements of Regulation VIII will be implemented.*

- *Prior to the issuance of construction contracts, the project developers shall perform a review of new technology, as it relates to heavy-duty equipment, to determine what, if any, advances in emissions reduction are available for use. It is anticipated that in the near future both NO_x and PM₁₀ control equipment will be available. The San Joaquin Valley Air Pollution Control District should be consulted during this process.*
- *The project developers shall limit traffic speed on unpaved roads to 15 miles per hour.*
- *The project developers shall install sandbags or other control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.*
- *The project developers shall install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site, to prevent track-out of soil to public roadways.*
- *The project developers shall install windbreaks at windward sides of construction areas, if necessary to prevent wind-blown dust.*
- *The project developers shall suspend excavation and grading activity when winds exceed 20 miles per hour.*
- *The project developers shall limit the area subject to excavation, grading, and other construction activity at any one time.*
- *The project developers shall ensure that the accumulation of mud or dirt is expeditiously removed from adjacent public streets at least once every 24 hours when construction activities are occurring (the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions).*
- *The project developers shall use alternative-fuel construction equipment, where feasible.*
- *The project developers shall minimize idling time (e.g., to a 10-minute maximum).*
- *The project developers shall limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use to the minimum practical.*
- *The project developers shall replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set), where feasible.*
- *The project developers shall take steps to curtail construction activity during periods of high ambient pollutants concentrations; this may include reducing construction activity during the peak hour of vehicular traffic on adjacent roadways or ceasing construction activity during days declared as Spare the Air days by the San Joaquin Valley Air Pollution Control District.*
- *The project developers shall implement activity management to reduce cumulative short-term impacts.*

Implementation of these mitigation measures would reduce impacts of construction-related PM₁₀ and impacts of ozone precursors from construction equipment exhaust, but in the opinion of the City of Modesto, not to a less-than-significant level. This impact would therefore remain significant and unavoidable.

Impact E.2. Emissions of criteria pollutants during project operation would contribute to existing violations of the ambient air quality standards in the region. (**Significant and Unavoidable**).

Mitigation Measure E.2a. *The site design shall fulfill the following requirements to reduce emissions from motor vehicle activity:*

- *The project developers shall incorporate improvements for transit service, including bus turnouts, transit loading areas, and shelters.*
- *The project developers shall incorporate sidewalks and bicycle paths throughout the site and connect those facilities to any nearby pedestrian and bicycle facilities, including those located at open space areas, parks, schools, or commercial areas.*
- *The project developers shall incorporate secure bicycle storage and parking facilities throughout the site.*

Mitigation Measure E.2b. *The project developers shall prepare a trip reduction plan to reduce emissions from motor vehicle activity. The plan shall be reviewed and approved by the City of Modesto prior to occupation of each element of the proposed project. To be compliant with the policies of the Urban Area General Plan, the trip reduction plan shall address how the following features would be implemented:*

- *Provision of matching services (for participants in carpools and vanpools) by employers with over 100 weekday employees or coordination with Caltrans' "Commuter Computer" program;*
- *Employer-based dissemination of commute information;*
- *Employer subsidies for transit passes and incorporation of transit stop facilities into site design;*
- *A program to guarantee rideshare participants a ride home in case of emergency;*
- *Flex-time scheduling;*
- *Site plan design which encourages pedestrian movement between adjacent land uses;*
- *Incentives such as preferred location of 4 percent of parking for carpoolers and hybrid or other clean-fuel vehicles; and*
- *Encouraging employers to experiment with telecommuting options, where feasible.*

Mitigation Measure E.2c. *The site design shall fulfill the following requirements to reduce emissions from energy consumption:*

- *The project developers shall incorporate energy efficient building design features including automated control systems for heating and air conditioning and overall energy efficiency at least 10 percent beyond the requirements of the California Energy Code (Title 24, California Code of Regulations), using features such as increased wall and ceiling insulation beyond Energy Code requirements, light colored roof materials to reflect heat, and energy efficient lighting and lighting controls.*

- *The project developers shall design buildings with windows and/or skylights oriented to maximize natural cooling and heating in accordance with the California Energy Commission's 2005 Building Energy Efficiency Standards.*
- *The project developers shall incorporate approved deciduous trees to provide shade on the south- and west-facing sides of buildings.*

Implementation of these mitigation measures would reduce impacts to regional ozone and particulate matter concentrations, but the impacts would remain significant and unavoidable.

Impact E.3. Motor vehicles emissions would locally contribute to elevated concentrations of carbon monoxide. (***Less than Significant***).

Impact E.4. Emissions during project operation would cause sensitive receptors to be exposed to TACs. (***Less than Significant***).

Impact E.5. Emissions of objectionable odors could occur during project operation. (***Less than Significant***).

Responses to Checklist Questions

a) Conflict with or obstruct implementation of the applicable air quality plan? b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Responses: Air quality emissions would be generated during construction and during operation of the proposed Project. Operational emissions would come primarily from vehicle emissions from vehicle trips generated by the proposed Project and from the use of energy (i.e., electricity and natural gas) within the proposed Project buildings.

Construction-Related Emissions

The SJVAPCD's approach to analysis of construction impacts is to require implementation of effective and comprehensive control measures, rather than to require detailed quantification of emission concentrations for modeling of direct impacts. PM₁₀ emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are several feasible control measures that can be reasonably implemented to significantly reduce PM₁₀ emissions from construction activities. The SJVAPCD has determined that, on its own, compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Tables 6-2 and 6-3 of the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (as appropriate) would constitute sufficient mitigation to reduce construction PM₁₀ impacts to a level considered less than significant.

Construction would result in numerous activities that would generate dust. The fine, silty soils in the Project site and often strong afternoon winds exacerbate the potential for dust, particularly in the summer months. Impacts would be localized and variable. Construction impacts are anticipated to last for approximately eight years. The initial phase of Project construction would involve grading and site preparation activities, followed by building construction. Construction activities that could generate dust and vehicle emissions are primarily related to grading, soil excavation, and other ground-preparation activities, as well as building construction.

Control measures are required and enforced by the SJVAPCD under Regulation VIII. The SJVAPCD considers construction-related emissions from all projects in this region to be mitigated to a less than significant level if SJVAPCD-recommended PM₁₀ fugitive dust rules and equipment exhaust emissions controls are implemented. The proposed Project would be required to comply with all applicable measures from SJVAPCD Rule VIII.

Table AIR-1 (below) provides the maximum construction-related criteria pollutant emissions modeling results for the proposed Project from CalEEMod in comparison to the SJVAPCD thresholds for criteria air pollutants. It should be noted that these emission results are conservative, since they do not account for the existing scenario conditions, which would be replaced by the proposed Project scenario.

As shown in Table AIR-1, none of the proposed Project's maximum construction-related emissions modeling results would not exceed the SJVAPCD criteria pollutant thresholds.

Table AIR-1: Proposed Project Maximum Construction Emissions (tons/year)

<i>Emissions Type</i>	<i>Proposed Project Emissions</i>	<i>SJVAPCD Threshold</i>	<i>Above Threshold in Proposed Project?</i>
ROG	1.1	10	N
NO _x	1.4	10	N
CO	2.0	100	N
PM ₁₀	0.3	15	N
PM _{2.5}	0.1	15	N
SO _x	<0.1	27	N

Source: CalEEMod, v. 2022.1

Operational Emissions

For the purposes of this operational air quality analysis, actions that violate Federal standards for criteria pollutants (i.e., primary standards designed to safeguard the health of people considered to be sensitive receptors while outdoors and secondary standards designed to safeguard human welfare) are considered significant impacts. Additionally, actions that violate State standards developed by the California Air Resources Board (CARB) or criteria developed by the SJVAPCD, including thresholds for criteria pollutants, are considered significant impacts.

SJVAPCD Rule 9510 Indirect Source Review

District Rule 9510 requires developers of large residential, commercial, and industrial projects to reduce smog-forming (NO_x) and particulate (PM₁₀ and PM_{2.5}) emissions generated by their projects. The Rule applies to many project types, including to projects which, upon full build-out, will include 50 residential units or more. Project developers are required to reduce:

- 20 percent of construction-exhaust nitrogen oxides;
- 45 percent of construction-exhaust PM₁₀;
- 33 percent of operational nitrogen oxides over 10 years; and
- 50 percent of operational PM₁₀ over 10 years.

Developers are encouraged to meet these reduction requirements through the implementation of on-site mitigation; however, if the on-site mitigation does not achieve the required baseline emission reductions, the Project applicant will mitigate the difference by paying an off-site fee to the District. Fees reduce emissions by helping to fund clean-air projects in the District. The proposed Project would be required to consult with the SJVAPCD regarding the applicability of Rule 9510 Indirect Source Review including the fees.

Criteria Pollutant Emissions and Thresholds

The proposed Project operational emissions are provided in Table AIR-2 (below) (further detail is provided in Appendix A), in comparison to the SJVAPCD criteria pollutant thresholds.

Table AIR-2: Project Operational Criteria Pollutant Emissions (tons/year)

<i>Emissions Type</i>	<i>Proposed Project Emissions</i>	<i>SJVAPCD Threshold</i>	<i>Above Threshold in Proposed Project?</i>
ROG	2.7	10	N
NO _x	1.1	10	N
CO	7.6	100	N
PM ₁₀	1.3	15	N
PM _{2.5}	0.35	15	N
SO _x	<0.1	27	N

Source: CalEEMod, v. 2022.1

As shown above, the proposed Project would not exceed the applicable SJVAPCD thresholds associated with operational emissions. Therefore, the proposed Project on an individual level would have a ***less than significant*** impact regarding operational emissions.

Conclusion

Development of the site would extend the urbanized area incrementally northward and eastward as originally anticipated in the General Plan and TSP. The TSP concluded that the Air Quality impacts would be a significant and unavoidable impact, and mitigation was recommended to minimize the impact to the extent possible. Compliance with the existing TSP mitigation (Mitigation Measure E.1, E.2a, E.2b, and E.2c) would be required. Consistent with the conclusions from the TSP EIR, the impacts from Air Quality would remain significant and unavoidable for the TSP. The City has adopted a statement of overriding considerations for the Air Quality impacts. There are no new impacts not already considered in the statement of overriding considerations. In fact, on a project-level, it is noted that the proposed Project would have ***a less than significant*** impact related to the potential to conflict with or obstruct implementation of the applicable air quality plan, or to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations? Response: Sensitive receptors are those parts of the population that can be severely impacted by air pollution. Sensitive receptors include children, the elderly, and the infirm. Although there are existing residences located to the north, west, south, and southeast of the Project site, there are no schools located adjacent to the Project site. The nearest school (Fred C Beyer High School) is located approximately 0.41 miles to the southeast of the Project site, at its closest point.

Implementation of the proposed Project would not expose these sensitive receptors to substantial pollutant concentrations. Air emissions would be generated during the construction and operational phases of the proposed Project. The construction phase of the proposed Project would be temporary and short-term, and the implementation of all State, Federal, and SJVAPCD requirements would greatly reduce pollution concentrations generated during construction activities. Moreover, as described under Responses a) and b), previously, the proposed Project's construction and operational-related emissions would be below the applicable Air District thresholds of significance. Therefore, impacts to sensitive receptors would be negligible and this is a ***less than significant*** impact.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? Response: The proposed Project would not generate objectionable odors. People in the immediate vicinity of construction activities may be subject to temporary odors typically associated with construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration.

Examples of facilities that are known producers of operational odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g., auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant. If a project would locate receptors and known odor sources in proximity to each other further analysis may be warranted; however, if a project would not locate receptors and known odor sources in proximity to each other, then further analysis is not warranted.

The proposed Project does not include any of the uses. Additionally, construction activities would be temporary and minor. Lastly, other emissions are evaluated in responses a-c), as provided above. As such, implementation of the proposed Project would have a ***less than significant*** impact relative to this topic.

IV. BIOLOGICAL RESOURCES

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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 US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				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

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of biological impacts will be guided by, in part, the policies and standards within the Modesto General Plan, the TSP and its associated EIR.

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

E. Wildlife and Other Natural Resources

Policies in the Planned Urbanizing Area. Incorporate the following measures into Environmental Impact Reports for Specific Plans in the Planned Urbanizing Area.

VII.E.3 [a]. For all lands within the Planned Urbanizing Area, conduct site-specific surveys, by a qualified biologist, to determine whether any sensitive natural communities or species are present within the proposed development area. These studies focus on proposed development

within any lands included within a potential biological resource study area, as delineated on Figure V-7-1 in the MEIR. Prior to considering development applications, coordinate with the USFWS and CDFW regarding listed species and potential for impacts. Employ the measures recommended by the USFWS and/or CDFW to avoid an incidental take.

Conduct Surveys at the appropriate season to best determine the likelihood of occurrence and employ accepted methodologies as determined by USFWS and CDFW. Record the significant results of such surveys onto the City's existing biological resources map for future planning purposes.

VII.E.3 [b]. Avoid and preserve all areas occupied or potentially occupied by special-status species, where feasible. Protect areas that can be avoided by fencing, signage, or establishment of buffer zones appropriate to the species and/or habitat involved. Generally, a minimum 100-foot buffer of undeveloped land would be necessary. Improve this buffer area through sustainable habitat restoration. Require the protected habitat to be managed so as to contribute to the long-term conservation of the species and ecosystems on which they depend.

Where state and/or federally listed species are determined to be present, consult with the USFWS and/or CDFW in accordance with the California and/or federal Endangered Species Acts to determine mitigation measures to avoid and minimize impacts to those species. If other special-status species are determined to be present and cannot be avoided, then implement species-specific mitigation measures to minimize impacts on those species through informal consultation with USFWS and/or CDFW. Incorporate the mitigation measures and other recommendations of these agencies into the development plan.

VII.E.3 [c]. Additional measures to protect sensitive habitats may be implemented. Potential measures to be implemented may include measures listed in Table V-7-1 in the Final Master Environmental Impact Report.

TSP Final EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

H. Biological Resources:

Impact H.1 Implementation of the TSP could result in loss of foraging habitat for White-tailed Kites and Northern Harriers. **(Less than Significant)**.

Impact H.2 Implementation of the TSP could result in loss of breeding and foraging habitat for Tricolored Blackbirds and Loggerhead Shrikes. **(Less than Significant)**.

Impact H.3 Implementation of the TSP would result in loss of wetland habitat. **(Significant)**. *(There is no wetland habitat within the Project site.)*

Impact H.4 Implementation of the TSP could disturb nesting Swainson's Hawk. **(Significant)**.

Mitigation Measure H.4: *Pre-construction surveys to avoid nest disturbance.*

Impact H.5 Implementation of the Specific Plan would result in loss of Swainson's Hawk foraging habitat. **(Significant)** *(There is no Swainson's hawk foraging habitat within the Project site.)*

Impact H.6 Implementation of the Specific Plan would result in loss of occupied Burrowing Owl habitat. (*Significant*).

Mitigation Measure H.6a: Implementation of formal CDFG guidelines to avoid and minimize impacts to Burrowing Owls.

Mitigation Measure H.6b: Compensation for loss of Burrowing Owl habitat.

Impact H 7 Implementation of the Specific Plan would result in cumulative loss of Swainson's Hawk and Burrowing Owl habitat. (*Significant*).

Mitigation Measure H.7: Same as Mitigation Measures H.4, and H.6.

Habitat Characteristics

The Project site is in the northeast portion of Modesto. This site is situated on a nearly level floodplain comprised of deep, fertile soils. The entire Project site is comprised of orchards. The immediate surrounding area is primarily characterized by agricultural habitat types including orchards, vineyards, forage crops, and urban uses. The area surrounding the Project site also includes numerous irrigation ditches.

These orchards support scattered patches of ruderal (herbaceous, non-native) plants, included rip-gut brome (*Bromus diandrus*), Mediterranean barley (*Hordeum murinum ssp. Gussoneanum*), black mustard (*Brassica nigra*), wild radish (*Raphanus sativus*), filaree (*Erodium sp.*), soft chess brome (*Bromus hordeaceus*), fiddleneck (*Amsinckia menziesii*), cheeseweed (*Malva parviflora*) and shepherd's purse (*Capsella bursa-pastoris*) along sporadically below the tree canopy and along the access roads around the perimeter of the orchards. However, most of the orchard habitat is devoid of vegetation, due to weed control and crop production activities.

Orchards typically provide limited habitats for wildlife, as frequent disturbances associated with crop production (e.g. pruning, spraying, harvesting, and watering) limit the potential for most wildlife species to persist in these habitats. White-tailed Kites (*Elanus leucurus*) and Swainson's Hawks (*Buteo swainsoni*) are not likely to nest within these orchards because they are intolerant of frequent disturbance. Additionally, the orchards do not provide quality foraging opportunities for these raptor species. Common reptiles such as the side-blotched lizard (*Uta stansburiana*) are known to persist under these conditions, and some common bird species are attracted to nut crops and can be abundant in orchards, such as the American Crow (*Corvus brachyrhynchos*) and Yellow-billed Magpie (*Pica nuttalli*). Burrowing animals, such as California ground squirrels (*Spermophilus beecheyi*) and gophers (*Thomomys sp.*), are typically discouraged in orchards due to damage they cause to crops and irrigation systems.

Responses to Checklist Questions

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? Response: The following discussion is based, in part, on the EIR for the TSP which included surveys of the Project site to identify threatened, endangered, or special status species present in the vicinity. In addition, new field surveys were performed, and new record searches of the CNDDB, USFWS IPAC, and CNPS Inventory were performed and are provided in Appendix B. Table Bio-1 provides a list of special status plants known within the region. Table Bio-2 provides a list of special status wildlife known within the region.

There are historical records of the presence for the various plants and wildlife species, including those listed in the Tables above. Some of these species are discussed in the TSP EIR. The Project site is an orchard habitat, which is not quality foraging habitat for any of these wildlife species, and the intensive disturbance to the ground associated with the agricultural practices limits the ability for the plant species to establish. Overall, none of these special status plants or wildlife are anticipated to occur in the orchard and none of these species were observed during field surveys. There is some limited opportunity for special status birds to occur at times within the orchard given their mobility. The California Fish and Wildlife Code 3503 prohibits the unlawful taking, possession, or needless destruction of the nest or eggs of any bird, and Section 3513 prohibits the unlawful taking of any migratory, nongame bird. Mitigation H.4 from the TSP EIR requires preconstruction surveys for raptors prior to disturbance. With this mitigation, the impact from the proposed project would be *less than significant*.

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 US Fish and Wildlife Service? Responses: There is no riparian habitat on the Project site, therefore, implementation of the proposed Project would have *no impact* on riparian habitats or natural communities.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? Response: There is no wetland habitat on the Project site, therefore, implementation of the proposed Project would have *no impact* on wetlands.

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? Response: The EIR for the TSP did not document any identified wildlife corridors or wildlife nursery site on, or adjacent to, the Project site. Furthermore, the field surveys did not reveal any wildlife corridors or nursery sites. Therefore, the proposed Project would have a *less than significant* impact relative to this topic.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Responses: The Project site is a part of the TSP planning area, which has been annexed into the City of Modesto. The change of use does not conflict with General Plan or other existing standards and/or ordinances intended to provide biological resources. Implementation of this Project would have a *less than significant impact* relative to this issue.

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? Responses: There is no applicable habitat conservation plan. Therefore, implementation of the proposed Project would have *no impact*.

TABLE BIO-1: SPECIAL-STATUS PLANT SPECIES

COMMON AND SCIENTIFIC NAME	STATUS ^a FED/STATE/ CNPS	DISTRIBUTION	PREFERRED HABITATS	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE IN STUDY AREA
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	–/–/1B.2	Merced, Solano, and Yolo counties. Historically more widespread.	Grassy flats and vernal pool margins, on alkali soils, below 200 feet.	March-June	Low
Alkali-sink goldfields <i>Lasthenia chrysantha</i>	–/–/1B.1	Solano, Sacramento, San Joaquin, Stanislaus, Merced, San Benito, Madera, Fresno, Kings, Tulare and Kern and counties.	Vernal pools. Alkaline. Between 0-200 m.	February-June	Low
California alkali grass <i>Puccinellia simplex</i>	–/–/1B.2	Glen, Colusa, Butte, Sutter, Yolo, Napa, Solano, Contra Costa, San Joaquin, Alameda, Santa Clara, Stanislaus, Merced, Madera, Fresno, Monterey, Kings, Tulare Kern, Los Angeles, and San Bernardino and counties.	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernal mesic. Sinks, flats, and lake margins. Between 1-915 m.	March-May	Low
Lemmon's jewelflower <i>Caulanthus lemmonii</i>	–/–/1B.2	Alameda, San Joaquin, Stanislaus, Merced, Fresno, San Benito, Monterey, Kings, San Luis Obispo, Kern, Santa Barbara, and Ventura counties.	Pinyon and juniper woodland, valley and foothill grassland. Between 75-1,585 m.	March-May	Low
Shining navarretia <i>Navarretia nigelliformis</i> ssp. <i>radians</i>	–/–/1B.2	Butte, Colusa, Contra Costa, San Joaquin, Alameda, Stanislaus, Merced, Mariposa, Madera, San Benito, Monterey, Fresno, Tulare, San Luis Obispo counties	Cismontane woodland, valley and foothill grassland, vernal pools. Apparently in grassland, and not necessarily in vernal pools. Between 60-975 m.	April-July	Low
Spiny-sepaled button-celery <i>Eryngium spinosepalum</i>	–/–/1B.2	Contra Costa, San Joaquin, Calaveras, Stanislaus, Merced, Mariposa, Madera, Fresno, Tulare, San Luis Obispo, and Kern counties.	Vernal pools, valley and foothill grassland. Some sites on clay soil of granitic origin; vernal pools, within grassland. Between 15-1,270 m.	April-May	Low
Heartscale <i>Atriplex cordulata</i>	–/–/1B.2	Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Madera, Merced, San Luis Obispo, Solano, and Stanislaus counties. Western Central Valley and valleys of adjacent foothills.	Alkali grassland, alkali meadow, and alkali scrub, 0-1,837 feet.	April-October	Low
Lesser saltscale <i>Atriplex minuscula</i>	–/–/1B.1	Alameda, Butte, Fresno, Kern, Madera, Merced, Tulare counties.	Alkali grassland, alkali meadow, alkali scrub, and saltbush scrub, between 50 and 650 feet.	May-October	Low

COMMON AND SCIENTIFIC NAME	STATUS: FED/STATE/CNPS	DISTRIBUTION	PREFERRED HABITATS	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE IN STUDY AREA
Vernal pool (persistent-fruited) saltscale <i>Atriplex persistens</i>	—/—/1B.2	Colusa, Glenn, Madera, Merced, Solano, and Tulare counties.	Dry beds of vernal pools, on alkaline soils, between 33 and 380 feet.	June-October	Low
subtle orache <i>Atriplex subtilis</i>	—/—/1B.2	Butte, Fresno, Kings, Kern, Madera, Merced, Stanislaus, and Tulare counties.	Alkaline soils, valley and foothill grassland between 130 and 330 feet.	June-October	Low
Big tarplant <i>Blepharizonia plumosa</i>	—/—/1B.1	Alameda, Contra Costa, San Joaquin, and Stanislaus counties.	Valley and foothill grassland, 100- 1,650 feet.	July-October	Low
Lemmon's jewel-flower <i>Caulanthus coulteri</i> var. <i>lemmonii</i>	—/—/1B.2	Western Central Valley and valleys of adjacent foothills on west side of Central Valley.	Pinyon and juniper woodland, and valley and foothill grassland, between 250 and 4,000 feet.	March-May	Low
Beaked clarkia <i>Clarkia rostrata</i>	—/—/1B.3	Merced, Mariposa, and Stanislaus Counties. Central Sierra Nevada Foothills, San Joaquin Valley, Hell Hollow, and Merced River drainage:	Cismontane woodland, Valley and foothill grassland, 200-1,500 feet.	April-May	Low
Delta button-celery <i>Eryngium racemosum</i>	—/E/1B.1	San Joaquin River delta, floodplains, and adjacent Sierra Nevada foothills: Calaveras, Merced, San Joaquin*, and Stanislaus Counties	Riparian scrub, seasonally inundated depressions along floodplains on clay soils, below 100 feet.	June-October	Low
Spiny-sealed button-celery <i>Eryngium spinosepalum</i>	—/—/1B.2	Fresno, Madera, Stanislaus, Tulare, and Tuolumne counties.	Valley and foothill grasslands and vernal pools, between 260 and 2,000 feet.	April-June	Low
Diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	—/—/1B.1	Interior foothills of south Coast Ranges from Contra Costa County to Stanislaus County. Carrizo Plain in San Luis Obispo County.	Grassland, chenopod scrub, on clay soils, where grass cover is sparse enough to allow growth of low annuals below 3,200 feet.	March-April	Low

COMMON AND SCIENTIFIC NAME	STATUS: FED/STATE/ CNPS	DISTRIBUTION	PREFERRED HABITATS	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE IN STUDY AREA
Talus fritillary <i>Fritillaria falcata</i>	—/—/1B.2	South inner coast ranges. Alameda, Monterey, San Benito, Santa Clara, and Stanislaus counties.	Chaparral, oak woodland, closed- cone coniferous forest, on serpentine talus between 1,000- 5,000 feet.	March-May	Low
Legenere <i>Legenere limosa</i>	—/—/1B.1	Primarily located in the lower Sacramento Valley, also from north Coast Ranges, northern San Joaquin Valley, and Santa Cruz Mountains.	Deep, seasonally wet habitats such as vernal pools, ditches, marsh edges, and river banks, below 500 feet.	May-June	Low
Merced monardella <i>Monardella leucocephala</i>	—/—/1A	Presumed extirpated, last seen in 1941, historically known from northern San Joaquin Valley.	Moist, sub-alkaline soils associated with low elevation grassland, in sandy depressions and riverbeds valley and foothill grassland, 115-330 feet.	May-August	Low
Colusa grass <i>Neostapfia colusana</i>	T/E/1B.1	Colusa, Glenn, Merced, Solano, Stanislaus, and Yolo counties.	Vernal pools on adobe soils.	May-August	Low
San Joaquin Valley orcutt grass <i>Orcuttia inaequalis</i>	T/E/1B.1	Fresno, Madera, Merced, Stanislaus, and Tulare counties.	Vernal pools from 100 to 2,500 feet.	April–September	Low
Greene's tuctoria <i>Tuctoria greenei</i>	E/R/1B.1	Butte, Fresno, Glenn, Madera, Merced, Shasta, San Joaquin, Stanislaus, Tehama, and Tulare counties.	Vernal pools between 100 and 3,500 feet.	May–September	Low

SOURCES: CNDDDB 2024; CNPS 2024.

NOTES:

- * = EXTIRPATED FROM THIS COUNTY.
 CNDDDB = CALIFORNIA NATURAL DIVERSITY DATABASE.
 CNPS = CALIFORNIA NATIVE PLANT SOCIETY.

STATUS EXPLANATIONS:

FEDERAL

- E = LISTED AS ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
 T = LISTED AS THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
 — = NO STATUS DEFINITION.

STATE

COMMON AND SCIENTIFIC NAME	STATUS: FED/STATE/ CNPS	DISTRIBUTION	PREFERRED HABITATS	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE IN STUDY AREA
<p><i>E</i> = LISTED AS ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.</p> <p><i>R</i> = LISTED AS RARE UNDER THE CALIFORNIA NATIVE PLANT PROTECTION ACT AND CALIFORNIA ENDANGERED SPECIES ACT.</p> <p>— = NO STATUS DEFINITION.</p> <p>CALIFORNIA NATIVE PLANT SOCIETY (CNPS)</p> <p><i>1A</i> = RANK 1A SPECIES: PRESUMED EXTIRPATED IN CALIFORNIA AND EITHER RARE OR EXTINCT ELSEWHERE</p> <p><i>1B</i> = RANK 1B SPECIES: RARE, THREATENED, OR ENDANGERED IN CALIFORNIA AND ELSEWHERE</p> <p><i>2A</i> = RANK 2A SPECIES: PRESUMED EXTIRPATED IN CALIFORNIA, BUT COMMON ELSEWHERE</p> <p><i>2B</i> = RANK 2B SPECIES: RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE</p> <p><i>3</i> = RANK 3 SPECIES: PLANTS ABOUT WHICH MORE INFORMATION IS NEEDED—A REVIEW LIST</p> <p><i>4</i> = RANK 4 SPECIES: PLANTS OF LIMITED DISTRIBUTION—A WATCH LIST</p> <p>CNPS CODE EXTENSIONS:</p> <p>.1 = SERIOUSLY THREATENED IN CALIFORNIA (OVER 80% OF OCCURRENCES THREATENED / HIGH DEGREE AND IMMEDIACY OF THREAT)</p> <p>.2 = FAIRLY THREATENED IN CALIFORNIA (20- 80% OF OCCURRENCES THREATENED)</p> <p>.3 = NOT VERY THREATENED IN CALIFORNIA (<20% OF OCCURRENCES THREATENED OR NOT CURRENT THREATS KNOWN)</p> <p>DEFINITIONS OF LEVELS OF OCCURRENCE LIKELIHOOD:</p> <p>HIGH: KNOWN OCCURRENCE OF PLANT WITHIN 5 MILES OF THE PROJECT FROM NATURAL DIVERSITY DATA BASE, CALIFORNIA NATIVE PLANT SOCIETY INVENTORY, OR OTHER DOCUMENTS; AND SUITABLE HABITAT AND MICROHABITAT CONDITIONS PRESENT.</p> <p>MODERATE: KNOWN OCCURRENCE OF PLANT IN STANISLAUS COUNTY, BUT MORE THAN 5 MILES FROM THE PROJECT, FROM NATURAL DIVERSITY DATA BASE, CALIFORNIA NATIVE PLANT SOCIETY INVENTORY, OR OTHER DOCUMENTS; OR SUITABLE HABITAT CONDITIONS PRESENT, BUT SUITABLE MICROHABITAT CONDITIONS UNLIKELY TO BE PRESENT OR OF POOR QUALITY.</p> <p>LOW: PLANT NOT KNOWN TO OCCUR IN THE REGION FROM THE NATURAL DIVERSITY DATA BASE, CALIFORNIA NATIVE PLANT SOCIETY INVENTORY, OR OTHER DOCUMENTS IN THE VICINITY OF THE PROJECT, OR PLANT IS KNOWN ONLY HISTORICALLY FROM THE REGION; AND HABITAT CONDITIONS OF POOR QUALITY.</p> <p>NONE: PLANT NOT KNOWN TO OCCUR IN THE REGION FROM THE NATURAL DIVERSITY DATA BASE, CALIFORNIA NATIVE PLANT SOCIETY INVENTORY, OR OTHER DOCUMENTS IN THE VICINITY OF THE PROJECT; AND SUITABLE HABITAT NOT PRESENT IN ANY CONDITION.</p>					

TABLE BIO-2: SPECIAL-STATUS WILDLIFE SPECIES

COMMON AND SCIENTIFIC NAME	STATUS: FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
INVERTEBRATES				
American bumble bee <i>Bombus pensylvanicus</i>	--/--	Southern Arizona, New Mexico, and California	Long-tongued; forages on a wide variety of flowers including vetches (<i>Vicia</i>), clovers (<i>Trifolium</i>), thistles (<i>Cirsium</i>), sunflowers (<i>Helianthus</i>), etc. Nests above ground under long grass or underground. Queens overwinter in rotten wood or underground.	None

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
Crotch's bumble bee <i>Bombus crotchii</i>	--/CE	Occur in the United States and Baja California in Mexico. Occur primarily in California, Western Desert, and adjacent foothills. Distributed throughout most of southwestern North America.	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	None
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E/SSI	Disjunct occurrences in Solano, Stanislaus, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, turbid vernal pools in annual grasslands. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	None
California linderiella <i>Linderiella occidentalis</i>	--/--	It has been documented on most land forms, geologic formations and soil types supporting vernal pools in California, at altitudes as high as 1,150 meters (3,770 ft) above sea level. Most common in the Central Valley.	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	None
Moestan blister beetle <i>Lytta moesta</i>	--/SSI	Historical distribution Fresno, Kern, Madera, Santa Cruz, Stanislaus, and Tulare counties.	Vernal pool grasslands within the Central Valley. Thought to depend on dried vernal pool habitat and solitary vernal pool bees as hosts.	None
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/SSI	Riparian and wetland habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with blue elderberry shrubs; elderberries are the host plant	None
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/SSI	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in astatic rain-filled pools. Inhabit small, clear-water sandstone- depression pools and grassed swale, earth slump, or basalt-flow depression pools	None
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/SSI	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds with clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	None

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
Western bumble bee <i>Bombus occidentalis</i>	--/CE	Occur in the western United States and western Canada.	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	None
<i>FISH</i>				
Steelhead, Central Valley DPS <i>Oncorhynchus mykiss irideus</i>	T/--	The Central Valley ESU includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries.	Preferred spawning habitat for steelhead is in cool to cold perennial streams with high dissolved oxygen levels and fast flowing water. Abundant riffle areas for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.	None
Green sturgeon - southern DPS <i>Acipenser medirostris</i> pop. 1	T/SSC	Spawns in the Sacramento, Feather and Yuba Rivers. Presence in upper Stanislaus and San Joaquin Rivers may indicate spawning.	Spawning site fidelity. Non-spawning adults occupy marine/estuarine waters. Delta Estuary is important for rearing juveniles. Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder.	None
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	--/SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes.	Occurs in slow-moving river sections and dead end sloughs. Requires flooded vegetation for spawning and foraging for young. Splittail are primarily freshwater fish, but are tolerant of moderate salinity and can live in water where salinity levels reach of 10-18 parts per thousand.	None
Hardhead <i>Mylopharodon conocephalus</i>	--/SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage.	Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic Centrarchids predominate.	None
<i>AMPHIBIANS</i>				
California tiger salamander	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, from Yolo County south to Tulare	Inhabits grassland, oak woodland, ruderal, and seasonal pool habitats. Seasonal ponds and vernal pools are crucial to breeding.	None

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
<i>Ambystoma californiense</i>		County. Also in the coastal valleys and foothills, from Sonoma County south to Santa Barbara County; Sonoma and Santa Barbara populations are listed as Federal Endangered.	Adults utilize mammal burrows as estivation habitat.	
Foothill yellow-legged frog <i>Rana boylei</i>	--/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	None
Western spadefoot <i>Spea hammondi</i>	--/SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Shallow temporary pools formed by winter rains are essential for breeding and egg-laying.	None
REPTILES				
Northern California legless lizard <i>Anniella pulchra</i>	--/SSC	California legless lizards are found in California and Mexico. They are found from western central California (San Joaquin and the coastal regions), through northwestern Baja California, and as far south as Colonia Guerrero, Mexico.	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	None
San Joaquin coachwhip <i>Masticophis flagellum ruddocki</i>	--/SSC	The San Joaquin Coachwhip has been found in Alameda, Contra Costa, Kern, Lake, Merced, San Benito, San Joaquin, Stanislaus, and Tulare counties, but may be found in appropriate habitat throughout the San Joaquin Valley, especially along the western edge.	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	None

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
(Northern) Western pond turtle <i>Actinemys [Emys] marmorata</i>	--/SSC	Occurs along the northern coast of California east to the Sierra Nevada and south through the Delta and Central Valley.	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	None
<i>BIRDS</i>				
Cackling (=Aleutian Canada) goose <i>Branta hutchinsii leucopareia</i>	--/WL	The entire population winters in Butte Sink, then moves to Los Banos, Modesto, the Delta, and East Bay reservoirs; stages near Crescent City during spring before migrating to breeding grounds.	Winters on lakes and inland prairies. Forages on natural pasture or that cultivated to grain; loaf on lakes, reservoirs, ponds.	Low. The dense orchard is not optimal habitat.
California horned lark <i>Eremophila alpestris actia</i>	--/WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills.	Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Low. The dense orchard is not optimal habitat.
Great blue heron <i>Ardea herodias</i>	--/--	Found throughout much of North America and into Central and South America. Common throughout California.	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Low. The dense orchard is not optimal habitat.
Loggerhead shrike <i>Lanius ludovicianus</i>	--/SSC	Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches and fairly dense shrubs and brush for nesting.	Low-Moderate. The orchard is not optimal habitat, but it could be used for foraging if nest sites are in the vicinity.
Least Bell's vireo <i>Vireo bellii pusillus</i>	E/E	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms.	Found below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Low. The orchard is not optimal habitat.
Merlin <i>Falco columbarius</i>	--/WL	Most of the prairie Merlins move into the southern and central U.S. and northern	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches. Clumps of trees or	Low. The dense orchard is not optimal habitat.

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
		Mexico, although some in urban areas remain there year-round.	windbreaks are required for roosting in open country.	
Prairie falcon <i>Falco mexicanus</i>	--/WL	The breeding range of the prairie falcon extends southward from central British Columbia through much of the western United States and reaches as far south as northern Mexico. Prairie falcons winter throughout their breeding range, as far south as central Mexico and as far east as the Mississippi River.	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Low. The dense orchard is not optimal habitat.
Snowy egret <i>Egretta thula</i>	--/--	Found mostly throughout North, Central, and South America. Breeds in coastal and inland wetlands. Their range has been limited over time due to habitat destruction and hunting. A migratory species that relocates from the United States and Canada to Mexico, Central America, South America, and the West Indies.	Prefer shallow water inlets for feeding such as salt-marsh pools, tidal channels, and bays. Mostly along coastal areas and islands. During winter time they migrate and roost in the mangroves of the Caribbean.	Low. The dense orchard is not optimal habitat.
Song sparrow- "Modesto" population <i>Melospiza melodia</i>	--/SSC	Restricted to the Sacramento and extreme northern San Joaquin Valleys from Colusa County south to northern Stanislaus County.	Associated with woody riparian habitat and freshwater marshes.	Low. The dense orchard is not optimal habitat.
Swainson's hawk <i>Buteo swainsoni</i>	--/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur in Yolo County.	Breeds in stands with few trees in juniper-sage flats, riparian areas, eucalyptus stands, and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations.	Low. The dense orchard is not optimal habitat.
Tricolored blackbird <i>Agelaius tricolor</i>	--/E*, SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles,	Low. The orchard is not optimal habitat.

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
		County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	thistles, and grainfields. Habitat must be large enough to support 50 pairs with open water habitat in the vicinity.	
Burrowing owl <i>Athene cunicularia</i>	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Low. The dense orchard is not optimal habitat.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	T/E	In California, breeding distribution is now thought to be restricted to isolated sites in the Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys.	Nests in riparian forests along the broad, lower flood-bottoms of larger river systems. Nests in dense vegetation including willow, and often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Low. The orchard is not optimal habitat.
Yellow-breasted chat <i>Icteria virens</i>	--/SSC	Nests locally in coastal mountains and Sierra Nevada foothills, east of the Cascades in northern California, and along the Colorado River.	Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry, wild grape; forage and nest within 10 feet of ground.	Low. The orchard is not optimal habitat.
<i>MAMMALS</i>				
Western mastiff bat <i>Eumops perotis californicus</i>	--/SSC	Occurs along the western Sierra primarily at low to mid elevations and widely distributed throughout the southern coast ranges. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but may also use crevices in trees, buildings, and tunnels. Roost entrances must have vertical faces and be high enough to drop off to take flight.	Low. May roost at times in orchard.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	--/C,SSC	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest.	Roost in limestone caves, lava tubes, mines, buildings, etc. Will only roost in the open, hanging from walls and ceilings. Roosting	Low. May roost at times in orchard.

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
			sites limiting. Extremely sensitive to disturbance.	
Western red bat <i>Lasiurus cinereus</i>	--/SSC	Occurs throughout much of California from Shasta County to Mexico border, west of the Sierra Nevada and Cascade Range crests.	This species is typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).	Low. May roost at times in orchard.
Riparian (San Joaquin Valley) woodrat <i>Neotoma fuscipes riparia</i>	E/SSC	Historical distribution along the San Joaquin, Stanislaus, and Tuolumne Rivers. Current distribution limited to Caswell State Park and the confluence area of the San Joaquin and Stanislaus Rivers in San Joaquin, Stanislaus, and Merced Counties.	Riparian habitats with multi-storied riparian habitat including dense shrub cover, willow thickets, and an oak overstory. Need areas with mix of brush and trees, and suitable nesting sites in trees, snags, or logs.	None
Riparian brush rabbit <i>Sylvilagus bachmani riparius</i>	E/E	Limited to San Joaquin County at Caswell State Park near the confluence of the Stanislaus and San Joaquin Rivers and Paradise Cut area on Union Pacific right-of-way lands	Native valley riparian habitats with large clumps of dense shrubs, low-growing vines, and some tall shrubs and trees including willows, wild rose, and blackberry.	None
Hoary bat <i>Lasiurus cinereus</i>	--/--	Occur in all 50 states. Rare in the eastern United States and northern Rockies. Found mainly in the Pacific Northwest and California, Arizona, and New Mexico.	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Low. May roost at times in orchard.
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; from Kern County north to Contra Costa County. Restricted to the western foothills of the San Joaquin Valley in the	Annual grasslands or grassy open stages with scattered shrubby vegetation including saltbush scrub, grassland, oak, savanna, and freshwater scrub. Need loose-textured	None

COMMON AND SCIENTIFIC NAME	STATUS FED/STATE	GEOGRAPHIC DISTRIBUTION	HABITATS REQUIREMENTS	POTENTIAL FOR OCCURRENCE IN STUDY AREA
		northern portion of the range and records become sparse in this area.	sandy soils for burrowing, suitable prey base, and short grass habitats.	
American badger <i>Taxidea taxus</i>	--/SSC	Throughout most of California.	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	Low. No dens observed. Could traverse the site foraging for food at times if populations exist in the vicinity.

SOURCE: CNDDDB 2024; CNPS 2024.

FEDERAL

E = LISTED AS ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
T = LISTED AS THREATENED UNDER THE FEDERAL ENDANGERED SPECIES ACT.
C = CANDIDATE SPECIES UNDER THE FEDERAL ENDANGERED SPECIES ACT.
- = NO LISTING

STATE

E = LISTED AS ENDANGERED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.
T = LISTED AS THREATENED UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.
C = CANDIDATE SPECIES UNDER THE CALIFORNIA ENDANGERED SPECIES ACT.
FP = FULLY PROTECTED UNDER THE CALIFORNIA FISH AND GAME CODE.

SSC = SPECIES OF SPECIAL CONCERN IN CALIFORNIA.

SSI = SPECIAL-STATUS INVERTEBRATE IN CALIFORNIA.

- = NO LISTING.

* CALIFORNIA FISH AND GAME COMMISSION EMERGENCY LISTING DECEMBER 3, 2014. STATUS OF ENDANGERED DECEMBER 29, 2014 THROUGH JUNE 30, 2015.

V. CULTURAL RESOURCES

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?				X
c) Disturb any human remains, including those interred outside of formal cemeteries?			X	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on culturally significant resources will be guided by, in part, the policies and standards within the Modesto General Plan, the TSP and its associated EIR.

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

F. Archaeological and Cultural Resources

Policies in the Planned Urbanizing Area

Policies for the Planned Urbanizing Area include those presented for the Baseline Developed Area, above, and those shown below.

Policy VII.F.3.[a]. Any project subject to CEQA that involves substantial earth-disturbing activities should require consultation by the applicant for the purposes of determining archaeological and cultural resources impacts and creating appropriate mitigation to address such impacts.

Policy VII.F.3.[b]. Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive by the City of Modesto through consultation with Native American tribes or bands and a qualified archaeologist should be subject to archaeological and Native American monitoring during all ground-disturbing activities.

Policy VII.F.3.[c]. Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive by the City of Modesto through consultation with Native American tribes or bands and a qualified archaeologist should be required to carry out the following mitigation measures, at a minimum:

1. If prehistoric archaeological remains are discovered during project construction (inadvertent discoveries), all work in the area of the find shall cease, and a qualified archaeologist should be retained by the project sponsor to investigate the find, and make recommendations as to treatment and mitigation. In the event of the discovery of a burial, human bone, or suspected human bone all excavation or grading in the

- vicinity of the find should halt immediately and the area of the find should be protected and the project applicant immediately should notify the County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5, including California Public Resources Code Section 5097.98, if applicable. If human remains are identified, the project sponsor should also retain a Native American monitor;
2. A qualified archaeological monitor should be present and should have the authority to stop and redirect grading activities, in consultation with the Native Americans and their designated monitors, to evaluate the significance of any Native American archaeological resources discovered on the property;
 3. Native American monitors from the appropriate Native American Tribes, as determined by the NAHC should be allowed to monitor all groundbreaking activities, including all archaeological testing and data recovery excavations that are likely to affect Native American resources, as determined by a qualified archaeologist. The project proponent should be responsible for compensating Native American monitors. If human remains are discovered, the NAHC should assign a Most Likely Descendent (MLD); and,
 4. The landowner agrees to relinquish ownership of all Native American human remains and associated burial artifacts that are found within the project area, to the appropriate Native American MLD, as assigned by the NAHC, for proper treatment and disposition. The MLD will decide whether or not standard archaeological analysis will be allowed on human remains and associated artifacts from burials.
 5. If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find, and the City's Planning Manager shall be notified. A qualified paleontologist shall evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines. The proposed mitigation plan may include a field survey of additional construction areas, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

TSP Final EIR

An Initial Study and Notice of Preparation for the TSP was published on July 21, 2005 and can be found in Appendix A of the EIR. The Initial Study determined that the effects of the project in the following issue areas would either be insignificant or would be reduced to a less-than-significant level by mitigation measures included in the project and thus required no further analysis: mineral resources, cultural resources, and recreation. Therefore, these issues are not addressed in the EIR.

Responses to Checklist Questions

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? Responses: The proposed Project is

within the same area as the TSP planning area. As described in the EIR for the TSP, there is a low probability for cultural artifacts to be found. Given that the proposed Project is within the boundaries of the TSP planning area, the same conclusions regarding the likelihood of finding cultural artifacts apply to the proposed project and that likelihood is relatively low. In addition, there are no historical buildings of significance at the site.

Since the TSP was approved, the same safeguards for discovery of potentially significant resources apply to the proposed project. The Modesto General Plan states that if construction activities involve discovery of buried archaeological deposits, the project sponsor would temporarily halt activities in the vicinity, notify the City of Modesto of the discovery, and consult a qualified archaeologist to assess the resource and provide proper mitigation recommendations. Cultural resources found on the site would be handled according to the existing guidelines within the TSP and Modesto General Plan as stated in TSP Mitigation Measure CUL-1. Given the lack of culturally significant resources on the Project site, and the safeguards in place if any were to be discovered, the Project's impact would be *less than significant*.

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

Response: Indications suggest that humans have occupied Stanislaus County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow if human remains are inadvertently discovered during Project implementation.

While no human remains are documented on or near the Project site, the TSP states that development within the planning area, including the Project site, would adhere to the existing Modesto General Plan policies on regarding the discovery of human remains at a project site. The Modesto General Plan states that if human remains are discovered, the project sponsors would immediately contact the Stanislaus County Coroner's Office, who would contact the Native American Heritage Commission to notify the appropriate closest descendant. Construction activities which inadvertently discover human remains implement these standards. Implementation of the proposed Project would have a *less than significant* impact relative to this topic.

VI. ENERGY

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Result in potentially significant environmental impact 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	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on energy resources will be guided by, in part, the policies and standards within the Modesto General Plan, the TSP and its associated EIR.

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

I. Energy Conservation

Energy Conservation Policies

Policy VII.I.2.[a] Require shade trees, where feasible and appropriate, in landscape plans for all new development proposals. Mature trees have lower water needs. Develop shade-tree specifications for development projects, including appropriate types of trees (size, deciduous or evergreen, absence or lower branches, etc), locations (e.g., distance from structures), density (i.e. within a subdivision or parking lot), and orientation (trees on the west side of a building generally provide the most benefit) for use in landscape plans.

Policy VII.I.2.[b] Require the planting of large-canopy species in new development areas in such a way that they grow to full size without damaging streets and sidewalks (including, but not limited to, deep watering until roots are established, proper fertilizers, root barriers, and structured soils).

Policy VII.I.2.[c] Discourage removal of street trees unless they are badly diseased and have become a threat to public safety. If a tree must be removed, it should be replaced no later than the end of the next planting season with a large-canopy species.

Policy VII.I.2.[d] The goal of the street tree maintenance program is to maintain trees in the best possible health by ensuring that newly planted trees are cared for in such a way as to prevent or minimize sidewalk and street damage (including, but not limited to, deep watering until roots are well established, proper fertilizers, root barriers, and structured soils), pruning to remove mistletoe, pruning to prevent the tree from leaning, and using measures to control disease.

Policy VII.I.2.[e] Encourage the Modesto and Turlock Irrigation Districts to establish and promote a program whereby existing residential and commercial building owners are provided incentives to increase the number of shade trees in developed parts of the City.

Provide information on types of trees and planting locations to maximize energy savings from the program.

Policy VII.I.2.[f] Coordinate with the Modesto and Turlock Irrigation Districts (for electricity) and Pacific Gas & Electric Company (for natural gas) on all new, large-scale, development proposals.

Policy VII.I.2.[g] Encourage the use of solar energy systems for residential, agricultural, parks, public buildings, and business purposes as provided in Government Code Section 65850.5.

Policy VII.I.2.[h] Design and orient new buildings and lots in new subdivisions to maximize solar energy.

Policy VII.I.2.[i] Approve applications for solar energy systems in accordance with State law.

Policy VII.I.2.[j] Support the State of California's commitment to the "Renewable Portfolio Standard," which requires electrical utility providers to obtain one-third (33%) of their electricity from renewable energy sources by 2020.

Policy VII.I.2.[k] Reduce heat gain from pavement by minimizing street rights-of-way and pavement widths. Reinstate the use of parkway strips with trees, where feasible, to provide shading of streets.

Policy VII.I.2.[l] Consider purchasing clean-fuel / alternative-fuel fleet vehicles.

The following policies are intended to encourage the use of energy conservation features and low-emission equipment for all new residential and commercial development:

Policy VII.I.2.[m] Work with the local energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.

Policy VII.I.2.[n] Work with the local energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.

Policy VII.I.2.[o] Work with the local energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.

TSP

Chapter 3. Specific Plan Elements.

3.3.6.1. Electric.

The Modesto Irrigation District will supply electricity for the TSP. Existing 69 kV electric transmission lines run along the west side of Roselle Avenue and north side of Sylvan Avenue thru the TSP. Steel truss towers that will be replaced with wood poles west of the proposed road improvements currently supporting the Roselle Avenue transmission line. The Sylvan Avenue transmission line contains 12 kV and 69 kV circuits that will be relocated north of the proposed road improvements.

Chapter 9. Implementation

9.1.1.6. Utilities.

Different utility companies provide electricity, gas, telephone, and cable services. These utilities are generally provided within the street right-of-way or next to the street within a public utility easement. Utilities are planned and installed with the construction of the street.

Responses to Checklist Questions

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

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

Response: The State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce “wasteful, inefficient and unnecessary” energy usage (Public Resources Code Section 21100, subdivision [b][3]). The means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered “wasteful, inefficient, and unnecessary” if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The amount of energy used at the Project site would directly correlate to the size and type of the proposed buildings, the energy consumption of associated unit appliances, and outdoor lighting. Other major sources of proposed Project energy consumption include fuel used by vehicle trips generated during Project construction and operation, and fuel used by off-road construction vehicles during construction. The energy consumption associated with the Project, but during construction and during its lifespan, are considered within the approved TSP and its EIR. The Project proposes MDR uses in an area of the TSP planning area that was zoned MHDR, and RSC. The new MDR designation would not constitute a level of energy consumption outside of the scope of the TSP and therefore the Project impacts on this topic would be *less than significant*.

VII. GEOLOGY AND SOILS

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
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 geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?		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 resource or site or unique geologic feature?			X	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on site geology and soils will be guided by, in part, the policies and standards within the Modesto General Plan and the TSP EIR.

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

K. Seismic and Geological Hazards

Policy VII.K.[a] Continue to use building codes as the primary tool for reducing seismic risk in structures. The current version of the California Building Code, as adopted by the City of Modesto, is intended to ensure that buildings resist major earthquakes of the intensity or severity of the strongest experience in California, without collapse, but with some structural as well as nonstructural damage. In most structures, it is expected that structural damage could be limited to repairable damage, even in a major earthquake.

Policy VII.K.[b] Require all new buildings in the City to be built under the seismic requirements of the current adopted California Building Code.

Policy VII.K.[c] Continue to explore measures to induce building owners to upgrade and retrofit structures to render them seismically safe.

Policy VII.K.[d] Enforce provisions of the Alquist-Priolo Earthquake Fault Zoning Act.

N. Miscellaneous Issues

Landslides

Policy VII.N.[a] Any construction that occurs as a result of the General Plan must conform with the current UBC regulations, which address seismic safety of new structures and slope requirements. As appropriate, require a geotechnical analysis prior to tentative map approval in order to ascertain site-specific subsurface information necessary to estimate foundation conditions. These geotechnical studies should reference and make use of the most recent regional geologic maps available from the California Department of Conservation Division of Mines and Geology.

Policy VII.N.[b] Discourage development on lands that are subject to landslides.

Policy VII.N.[c] New public roads in areas subject to landslides should be designed to minimize landslide risks.

Policy VII.N.[d] All building permits should be reviewed to ensure compliance with the current adopted edition of the California Fire Code, California Building Code, California Mechanical Code, California Electrical Code, California Plumbing Code, Title 19, Title 24, and the City of Modesto Municipal Code.

Erosion

Policy VII.N.[e] Control construction-related fluvial erosion by a construction erosion control program filed with the City's Public Works Department and kept current throughout site development.

Policy VII.N.[f] Include "best management practices" in the erosion control program, as appropriate, given the specific circumstances of the site and/or project. Table V-9-2 in the Master Environmental Impact Report presents examples of best management practices.

Policy VII.N.[g] Design sediment control basins to capture eroded sediments and contain them on the project sites consistent with the criteria outlined in Table V-9-3 in the Master Environmental Impact Report.

TSP Final EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

J. Geology, Soils, and Seismicity

Impact J.1. Structures or property at the project could be adversely affected by expansive soils or by settlement of project soils. **(Less than Significant with Mitigation).**

Mitigation Measure J.1: *In locations underlain by expansive soils and/or non-engineered fill, the designers of foundations and improvements (including sidewalks, roads, and utilities) shall consider these conditions. The design-level geotechnical investigation, to be prepared by licensed professionals and approved by the City Building Department, shall include measures to ensure potential damages related to expansive soils and non-uniformly compacted fill are minimized. Mitigation options may range from removal of the problematic soils and replacement, as needed, with properly conditioned and compacted fill, to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements. All mitigation measures, design criteria, and specifications set forth in the geotechnical and soils report shall be followed to reduce impacts associated with shrink-swell soils to a less-than-significant level.*

Impact J.2. Differential settlement at the project site could result in damage to project buildings and other improvements. **(Less than Significant with Mitigation).**

Mitigation Measure J.2: *Prior to issuance of a grading permit, a site-specific grading plan shall be prepared by a licensed professional and submitted to the City Building Department for review and approval. The plan shall include specific recommendations for mitigating potential settlement associated with fill placement and areas of different fill thickness. This mitigation measure would reduce the impact to a less-than-significant level.*

Existing Setting

The proposed Project is in the central portion of the Great Valley Geomorphic Province of California, an alluvial plain roughly 50 miles wide and 400 miles long. The Great Valley is a deep structural basin that has been slowly filling with sediment nearly continuously for about 160 million years. These sediments consist of continental sedimentary rocks and alluvial deposits. The Great Valley is bounded on the east by the Sierra-Nevada and on the west by the Coast Range mountains. More specifically, the site is located at the northern end of the San Joaquin Valley, an alluvial valley and plain developed along the San Joaquin River and its tributaries. Regionally, the project area is underlain by Quaternary-aged poorly sorted clay, silt, sand and gravel.

Responses to Checklist Questions

a.) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: a.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., a.ii) Strong seismic ground shaking?, a.iv) Landslides? **Responses:** The Project site is not located within the vicinity of a fault line nor in an

active fault zone. The EIR for the TSP did not identify any significant risk associated with rupture of a known earthquake fault, or substantial evidence of an active fault within the vicinity of the TSP planning area, seismic related ground failure including, or landslides. The EIR for the TSP adequately considers the potential geological risks and impacts on developments within the TSP planning area and has been adopted by the City of Modesto. Given that the Project site is within the TSP planning area, it can be concluded that geologic conditions would remain the same and therefore the Project's impact would be ***less than significant***.

a.iii) Seismic-related ground failure, including liquefaction?, c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?, d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Responses: The EIR for the TSP has identified that soils in portions of the TSP planning area have moderate to high shrink/swell potential. These conditions could cause significant damage to structures and utilities built in this area. Additionally, non-uniformly compacted imported fill placed at the site that could experience settlements under new structural loads. Structural damage, warping, and cracking of roads and other infrastructure, and rupture of utility lines may occur if the potential expansive soils and the nature of the imported fill were not considered during design and construction of improvements. Mitigation Measures J.1 and J.2 call for design-level geotechnical investigation to be prepared by licensed professionals and approved by the City Building Department. These requirements are intended to ensure potential damages related to expansive soils, settlement, and non-uniformly compacted fill are minimized. Mitigation options may range from removal of the problematic soils and replacement, as needed, with properly conditioned and compacted fill, to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements. All mitigation measures, design criteria, and specifications set forth in the geotechnical and soils report must be followed to ensure that impacts associated with shrink-swell soils are a less-than significant level.

The TSP EIR notes that conventional spread, or continuous footings, or concrete slab-on-grade foundation and/or floor systems may be used so long as appropriate soil and site preparation, such as mechanical compaction or 'over-excavation' and the introduction of engineered fill, is used in the construction process. It is also noted that if clay soils are present within two feet of any final building pad grade, then damage may occur related to expansive soil, and appropriate engineering for expansive soil conditions should be used.

The EIR for the TSP adequately considers the potential geological risks and impacts regarding liquefaction, expansive soils, landslides, subsistence, lateral spreading, and differential settlement on developments within the TSP planning area and has been adopted by the City of Modesto. The requirements provided in Mitigation Measure J.1 and 2 are standard City requirements that will ensure that the proposed Project's impact would be ***less than significant with mitigation***.

b) Result in substantial soil erosion or the loss of topsoil? Response: The potential for erosion generally increases because of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover; thus, there is the potential for erosion associated with construction activities or through the operational phase of a project. However, the EIR for the TSP adequately considers the potential geological risks and impacts regarding erosion within the TSP planning area, and has been adopted by the City of Modesto. Given that the Project site is within the TSP planning area, it can be concluded that geologic conditions would remain the same and therefore the Project's impact would not be greater than that already considered in the TSP and would be ***less than significant***.

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? Response: The proposed Project has been designed to connect to the existing City sewer system and septic systems will not be used. Therefore, ***no impact*** would occur related to soils incapable of adequately supporting the use of septic tanks.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? Response: Known paleontological resources or sites are not located on the Project site. Additionally, unique geologic features are not located on the Project site. Paleontological resources found on the site would be handled according to the existing guidelines within the TSP and Modesto General Plan as stated in TSP Mitigation Measure CUL-1. This is a ***less than significant*** impact.

VIII. GREENHOUSE GAS EMISSIONS

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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 gasses?			X	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on greenhouse gas emissions will be guided by, in part, the policies and standards within the TSP EIR.

Existing Setting

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change, in the context of this discussion, is the change in global climate that is a result of human activities (e.g., burning fossil fuels, deforestation, reforestation, urbanization, desertification) that have increased the volume of greenhouse gases (GHG) present in the atmosphere and have thereby caused the earth's atmosphere to heat up.

Various gases in the Earth's atmosphere, classified as atmospheric GHGs play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Energy Commission, 2016).

Responses to Checklist Questions

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 gasses?

Responses: Development of the site would extend the urbanized area incrementally northward and eastward as originally anticipated in the General Plan and TSP. The TSP EIR did not specifically quantify GHG emissions, nor did it provide a qualitative or quantitative analysis for this environmental topic. This is in part because the TSP EIR was certified approximately seventeen years ago at a time where the CEQA Guidelines did not call for a specific GHG analysis. The CEQA principle of "finality" applies to the TSP EIR, which holds that previously approved CEQA documents are deemed adequate and beyond challenge (*Friends of the College of San Mateo Gardens v. San Mateo County Community College District* (2016) 1 Cal.5th 937). The focus of this GHG analysis is to examine the difference in GHG emissions between the uses anticipated under the certified TSP EIR, and the modified uses under the proposed project. In fact, on a project-level,

it is noted as shown below, that the proposed Project would have a reduced impact related to the GHG impacts when compared to the uses anticipated under the certified TSP EIR.

The SJVAPCD has evaluated different approaches for estimating impacts, and summarizing potential GHG emission reduction measures. The SJVAPCD staff has concluded that *“existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change.”* This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant.

The *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015) provides an approach to assessing a project’s impacts on greenhouse gas emissions by evaluating the proposed Project’s emissions to the “reduction targets” established in ARB’s AB 32 Scoping Plan. For instance, the SJVAPCD’s guidance recommends that projects should demonstrate that *“project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business as Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in ARB’s AB 32 Scoping Plan. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.”*

Subsequent to the SJVAPCD’s approval of the *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015), the California Supreme Court issued an opinion that affects the conclusions that should/should not be drawn from a GHG emissions analysis that is based on consistency with the AB 32 Scoping Plan. More specifically, in *Center for Biological Diversity v. California Department of Fish and Wildlife*, the Court ruled that showing a “project-level reduction” that meets or exceeds the Scoping Plan’s overall statewide GHG reduction goal is not necessarily sufficient to show that the proposed Project’s GHG impacts will be adequately mitigated: *“the Scoping Plan nowhere related that statewide level of reduction effort to the percentage of reduction that would or should be required from individual projects...”* According to the Court, the lead agency cannot simply assume that the overall level of effort required to achieve the statewide goal for emissions reductions will suffice for a specific project.

Given this Court decision, reliance on a 29 percent GHG emissions reduction from projected BAU levels compared to the proposed Project’s estimated 2020 levels as recommended in the SJVAPCD’s guidance documents is not an appropriate basis for an impact conclusion in the MND. Given that the SJVAPCD staff has concluded that *“existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change,”* this MND instead relies on a qualitative approach for this analysis. The approach still relies on the Appendix G of the CEQA Guidelines thresholds which indicate that climate change-related impacts are considered significant if implementation of the proposed Project would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

These two CEQA Appendix G threshold questions are provided within the Initial Study checklist and are the thresholds used for the subsequent analysis. The focus of the analysis is on the proposed Project's generation of GHG emissions.

The proposed Project would generate GHGs during the construction and operational phases. The primary source of construction-related emissions of CO₂ would be associated with the construction of the proposed project, and worker vehicle trips. The proposed Project would require limited grading, and would also include site preparation, building construction, and architectural coating phases. The operational phase would generate GHGs primarily from the operational vehicle trips and building energy (electricity and natural gas) usage. Other sources of GHG emissions would be minimal. Construction-related GHGs are provided in Table GHG-1, below, for the proposed Project. Additionally, operational-related GHGs are provided in Table GHG-2, below, for the proposed Project.

Construction Emissions

Table GHG-1: Proposed Project Construction GHG Emissions (Metric Tons/Year)

Year	Bio-CO₂	NBio-CO₂	Total CO₂	CH₄	N₂O	CO_{2e}
2025	0	188	188	<0.1	<0.1	189
2026	0	388	388	<0.1	<0.1	392
2027	0	12	12	<0.1	<0.1	12
Maximum	0	388	388	<0.1	<0.1	392

SOURCE: CALEEMOD (v.2022.1)

Operational Emissions

Table GHG-2: Proposed Project Operational GHG Emissions (Metric Tons/Year)

Category	Bio-CO₂	NBio-CO₂	Total CO₂	CH₄	N₂O	CO_{2e}
Mobile	0	1,337	1,337	<0.1	<0.1	1,363
Area	0	2	2	<0.1	<0.1	2
Energy	0	465	465	<0.1	<0.1	467
Water	2	16	19	<0.1	<0.1	26
Waste	14	0	14	1	0	50
Refrigerants	0	0	0	0	0	0.4
Total	17	1,820	1,837	2	<0.1	1,909

SOURCE: CALEEMOD (v.2022.1).

Notably, as described in the Transportation Impact Analysis, proposed Project VMT would be reduced by 9,040 VMT per day, as compared with the previously approved Project. Specifically, based on data provided by Fehr & Peers, proposed Project VMT per day is anticipated to be approximately 10,081 VMT per day, while the existing Project VMT per day is approximately 19,121 VMT per day. The 9,040 VMT per day reduction associated with the proposed Project represents an approximately 47.3% reduction in VMT as compared to the existing Project. Because VMT and GHG emissions are significantly correlated, it is estimated that the proposed Project GHG emissions are anticipated to be reduced by approximately 47.3% compared to the existing uses.

As shown in the above tables, the proposed Project would generate 1,909 MT CO_{2e} GHG emissions during Project operation, and a maximum of 392 MT CO_{2e}/year during the Project construction.

This represents an estimated 47.3% reduction from the existing uses. Therefore, the proposed Project would not generate GHG emissions that would have a significant impact on the environment or conflict with any applicable plans, policies, or regulations. Impacts related to greenhouse gases are ***less than significant***.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	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 it 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 or excessive noise 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	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on site hazards and hazardous materials will be guided by, in part, the policies and standards within the Modesto General Plan and the TSP EIR.

Site Setting

The Project site is bounded by agricultural land uses, single-family homes, and some commercial office space. Some of the surrounding agricultural uses are in production (orchards and row crops), with numerous farmhouses and outbuildings. Other portions are fallow.

Formerly, farms commonly had their own tanks for fuel and chemicals. Dry wells were often used for liquid waste disposal. On-site trash disposal was also common on farms. Based on these common farm practices, the agricultural land of the project site could contain a variety of contaminants, including pesticides, herbicides, petroleum hydrocarbons, semi-volatile organic compounds, volatile organic compounds, and heavy metals. Hazards evaluations are used to

identify visible evidence of use, storage, and/or disposal of hazardous materials; visible evidence of a release of hazardous materials; and regulatory records of contaminated sites, either on, or in proximity to, the subject property.

Modesto General Plan

Chapter VI. Community Facilities and Services

I. Hazardous Material Management

Policy VI.M.1. Comply with all existing federal and state laws that regulate the generation, transportation, storage, and disposal of hazardous materials.

Policy VI.M.2. Require that businesses and industries using any hazardous materials provide mitigation measures commensurate with the hazards they bring to the community, in accordance with the most current adopted edition of the Uniform Fire Code.

Policy VI.M.3. In the event that site inspection or construction activities uncover chemical contamination, underground storage tanks, abandoned drums, or other hazardous materials or wastes at a parcel, the inspection report preparer shall so notify the City. Notify the County Health Services Department. Under the direction of these agencies, a site remediation plan would be prepared by the project applicant.

The plan would (1) specify measures to be taken to protect workers and the public from exposure to potential site hazards and (2) certify that the proposed remediation measures would clean up the wastes, dispose the wastes, and protect public health in accordance with federal, state, and local requirements. Permitting or work in the areas of potential hazard shall not proceed until the site remediation plan is on file with the City.

If a parcel is found to be contaminated to a level that prohibits the proposed use, the potential for reduction of the hazard should be evaluated. Site remediation is theoretically capable of removing hazards to levels sufficiently low to allow any use at the site. In practice, both the technical feasibility of the remediation and its cost (financial feasibility) should be evaluated in order to determine the overall feasibility of locating a specific use on a specific site. In some cases, it requires restriction to industrial use or a use that involved complete paving and covering of the parcel.

In accordance with OSHA requirements, any activity performed at a contaminated site shall be preceded by preparation of a separate site health and safety plan (prepared by the project applicant and filed with the City) for the protection of workers and the public. All reports, plans, and other documentation shall be added to the administrative record.

Policy VI.M.4. For each specific project that would generate hazardous waste, require as a condition of building permit approval that the project sponsor prepare a hazardous material transportation program. Passage through residential neighborhoods should be minimized, and parking of waste haulers on residential streets should be prohibited. The City Fire Department shall review and approve the applicant's hazardous materials transportation program or, working with the applicant, modify it to the satisfaction of both parties.

Policy VI.M.5. Prior to the issuance of all building permits, identify the site in relation to all Comprehensive Environmental Response, Compensation and Liability Information System sites and to known or suspected uncontrolled or abandoned hazardous waste sites. All

projects within 2,000 feet of these facilities should conduct hazardous materials studies as necessary to identify the type and extent of contamination, if any, and the extent of risk to human health and public safety. If necessary, a remedial action program should be developed and implemented as in Policy VI.M.3.

Policy VI.M.6. Applicants for building permits should determine that a site containing or formerly containing residences or farm buildings/structures has been fully investigated for the presence of hazardous materials or wastes prior to issuance of the permit. Investigation should consist of, at minimum, a Phase I environmental site assessment and a Phase II site assessment, if found necessary as a result of the Phase I assessment. The findings of the site assessment should be reported to the City and the County's Department of Environmental Resources. The appropriate remediation should occur prior to final occupancy of the approved development.

Chapter VII. Environmental Resources and Open Space.

M. Fire Hazards

Policy VII.M.[a] **Peak Load Water Supply.** Peak-load water supply is defined as "the supply of water available to meet both domestic water and firefighting needs during the particular season and time of day when domestic water demand on a water system is at its peak." Ensure that adequate water fire-flows are maintained throughout the City and shall regularly monitor fire-flows to ensure adequacy. New development shall comply with the minimum fire-flow rates, as presented in the California Fire Code.

Policy VII.M.[b] **Minimum Road Widths and Clearances Around Structures.** Fire apparatus roads to and around structures should comply with the minimum requirements in Chapter 5 of the California Fire Code.

Policy VII.M.[c] **Miscellaneous.** The following policies will help to minimize the hazardous conditions that might cause loss of life and property.

1. Enforce state-mandated Health and Safety Codes, including but not limited to the current adopted edition of the California Fire Code, California Building Code, California Mechanical Code, California Electrical Code, California Plumbing Code, Title 19, Title 24, and the City of Modesto Municipal Code.
2. Design and maintain roads so as to ensure adequate access in hazardous conditions.
3. Require all new developments to have adequate water to meet the established fire-flow standards.
4. Encourage funding sources that help to maintain adequate on-going fire services for both existing and new development.
5. The City of Modesto may negotiate with affected fire protection districts when an annexation to the City is contemplated, and before it is finalized, to determine whether the boundary change may result in the erosion of fire protection or other emergency services. Any resulting agreements must be approved by the City Council and the governing board of fire protection district prior to City Council approval of the annexation. Options range from the consolidation of the fire protection district into Modesto City Fire to revenue sharing.

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Chapter IV. Environmental Setting, Impacts, and Mitigation

G. Hazards

Impact G.1. Demolition of existing buildings could cause release of hazardous materials, causing potential hazards to the public and environment. (***Less than Significant***).

Impact G.2. Excavation for installation of utilities and other construction on the project site could encounter contaminated soil and/or groundwater and expose workers and the public to hazardous substances. (***Less than Significant with Mitigation***).

Mitigation Measure G.2. Conduct remaining Phase I Environmental Site Assessments, conduct site investigations, and implement remediation as necessary.

Impact G.3. Transportation of contaminated soil and/or building materials removed from the project site could result in accidental release of hazardous materials. (***Less than Significant***).

Responses to Checklist Questions

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? Responses: The proposed Project would amend the General Plan and TSP and redesignate the Project site to MDR. The Project site is surrounded by existing residential uses, agricultural uses, and a veterinary hospital. These existing uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials outside of those that have been previously approved of within the TSP and its associated EIR. These uses may use, transport, or dispose of common hazardous materials such as household cleaners, paint, engine oil, and similar household substances that do not pose an unreasonable or significant risk.

The Project site has historically been used for agricultural purposes. Like most agricultural operations in the Central Valley, agricultural practices in the area have used agricultural chemicals as a standard practice. Despite this, the Project site is within the TSP planning area which has already adequately addressed the potential risk from hazardous materials.

The TSP's EIR did identify risks regarding excavation for installation of utilities or other construction on the project to encounter contaminated soil or groundwater and expose workers and the public to hazardous substances. Implementation of the Project would involve extensive excavation and trenching to install utilities and roads, and for building foundations. If contaminated soil or groundwater is present, construction workers could be exposed to hazardous substances that could be released into the soil or the groundwater. Further studies would be required prior to construction to determine the nature and extent of any contamination. The TSP EIR recommended the preparation of a Phase I ESA prior to construction. As part of this Initial Study, a Phase I ESA and Limited Phase II testing was prepared. The results show that the potential risks associated with hazardous materials would remain the same as previously anticipated, and therefore this impact would be ***less than significant***.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? Response: The Project site is located over ¼ mile from an existing school. The nearest school to the Project

site is the Fred C Beyer High School, located approximately 0.45 miles from the Project site, at its closest point. Because the Project site is beyond the ¼-mile radius of a school, Implementation of the proposed Project would result in ***no impact*** relative to this topic.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? Response: Pursuant to Government Code 65962.5, the Cortese List catalogs a list of sites that have been contaminated with hazardous materials. The TSP EIR concluded that none of the parcels within the planning area were contaminated with hazardous materials. However, the TSP EIR did note the possibility of soil containing residual chemicals from agricultural operations and recommended soil testing before parcels were converted to residential use. Given that the Project site is within the approved TSP planning area, it can be concluded that the same site conditions exist. Given that the TSP has been approved and adopted, the potential risk for site contamination from hazardous materials remains ***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 or excessive noise for people residing or working in the project area? Response: The Federal Aviation Administration (FAA) establishes distances of ground clearance for take-off and landing safety based on such items as the type of aircraft using the airport. The Project site is not located within the vicinity of a private airstrip or public airport and is not located within the planning area of an airport land use plan. The closest airport to the Project site is Modesto City-County Airport, which is approximately 4.5 miles away at the closest point. Implementation of the proposed Project would have a ***less than significant*** impact with regards to this environmental issue.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? Response: The Stanislaus County Office of Emergency Services (OES) maintains an Emergency Operations Plan (EOP) and the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan, which both serve as guiding documents for Stanislaus County and the City of Modesto regarding the response to hazardous materials. These documents include planned operational functions and overall responsibilities of County Departments during an emergency.

The County OES establishes effective response capabilities to contain and control releases, establishes oversight of long-term cleanup and mitigation of residual releases, and integrates multi-jurisdiction and agency coordination. It also includes guidelines and regulations for directing response to hazardous materials incidents for first responders. The largest road adjacent to the Project site is Oakdale Road. While not a major arterial road, it will see increased traffic if the Project is completed.

The proposed Project does not include any actions that would impair or physically interfere with any of the Stanislaus County emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling, and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder emergency vehicle access or evacuation in the event of an emergency. Potential impacts to existing County or City emergency management plans have already been considered in the TSP EIR. Implementation of the proposed Project would have a ***less than significant*** impact with regards to this environmental issue.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? Response: The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), weather (winds, temperatures, humidity levels and fuel moisture contents), and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point. The City has areas with an abundance of flashy fuels (i.e., grassland) in the outlying residential parcels and open lands that, when combined with warm and dry summers with temperatures often exceeding 100 degrees Fahrenheit, create a situation that results in higher risk of wildland fires, as is common throughout the Central Valley. Most wildland fires are human caused, so areas with easy human access to land with the appropriate fire parameters generally result in an increased risk of fire.

According to CalFire, the Project site is in an area with a “Local Responsibility Zone (LRA) Unzoned” rank, meaning that responsibility to wildfire events is passed to regional and local agencies. Stanislaus County currently maintains a Multi-Jurisdictional Hazard Mitigation Plan that includes plans to respond to, and mitigate the damage from, wildfires. The Project site is not located on a steep slope, instead, the Project site is essentially flat. The Project site is in an urban area, with existing or future urban development located on multiple sides. Additionally, wildfire hazards and potential increased risk from wildfire has been considered by the TSP EIR, which includes the Project site. Therefore, this is a *less than significant* impact and no mitigation is required.

X. HYDROLOGY AND WATER QUALITY

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede 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:		X		
(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	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on the site's hydrology and water quality will be guided by, in part, the policies and standards within the Modesto General Plan and the TSP EIR.

Site Setting

The Project site is in northwestern Modesto approximately three miles south of the Stanislaus River and two and one-half miles north of Dry Creek (a major tributary to the Tuolumne River). The Modesto Irrigation District (MID) operates several irrigation canal "laterals" that flow east to west in the vicinity of the Project site. The primary function of these laterals is to distribute water to irrigated farmlands. To a limited extent, these laterals receive irrigation return flows and receive urban storm water runoff. Storm water quality is an issue because the laterals were designed to distribute irrigation water and therefore decrease in size downstream (because

irrigation water is used along the flow path and the acreage served downstream diminishes). Storm water conveyances typically increase in size downstream as more water is collected. If too much storm water is discharged to the laterals, they could flood downstream or overtop the capacity of certain reaches throughout the system.

The Project site is not located within a FEMA-designated 100-year flood hazard zone. However, the site is within a broad, relatively flat area that is subject to sheet flow-type shallow flooding.

Flooding can also occur because of catastrophic dam failure and the release of waters contained in upstream reservoirs. The Project site area could be impacted if an upstream dam in the vicinity were to fail catastrophically. Although a very low probability event, catastrophic structural dam failure can be caused by earthquake or overflow. According to the City of Modesto Local Hazard Mitigation Plan, the failure of the New Melones Dam, which has a capacity of 2,420,000 acre-feet, could affect the Project site.

The Project site is located within an area underlain by the Modesto Subbasin of the San Joaquin Valley Groundwater Basin (as designated by the California Department of Water Resources). The sediments in the vicinity of Modesto are generally poorly sorted and derived from continental and marine sedimentary rocks (with some volcanic rocks) of the Coast Ranges.

Modesto General Plan

Chapter VI. Community Facilities and Services

A. Water

Goal VI.A. Ensure a consistent, reliable, high-quality water supply for the City of Modesto's residents and businesses.

Policy VI.A.1. Implement the demand management and conservation measures identified in the City's adopted Urban Water Management Plan (UWMP). During review of development proposals, require that all developments reduce their potable water demand. Refer to the UWMP for potential techniques to reduce potable water demand.

Policy VI.A.2. Require water infrastructure master plans for public infrastructure and/or when otherwise pertinent to provision of water service at adopted service levels for the specific plan areas or other projects depending on site issues and location.

Policy VI.A.3. All new connections to the public water system are to have meters installed. In addition, on or before January 1, 2025, all existing municipal and industrial service connections are to have water meters installed.

Policy VI.A.4. any local public or private entity that produces recycled water, and determines that within ten (10) years it will provide recycled water within the boundaries of the City of Modesto, must notify the City of that fact. Within 180 days of receipt of the notice, the City of Modesto should adopt and enforce a specified recycled water ordinance, which is to comply with the City of Modesto's UWMP.

Policy VI.A.5. For properties outside the City limits and sewer district boundaries, and for properties outside the City limits, but inside of, contiguous to, and/or near the former service

area of Del Este Water Company, the extension of water service may be approved by the City Manager per City council Policy 5.001, as amended.

Goal VI.B. Pursue additional potential water supply alternatives available to the City to accommodate growth and meet future demand in both normal and dry years and continue to research and develop water reclamation as a water source.

Policy VI.B.1. Prepare and adopt an Urban Water Management Plan every five (5) years in accordance with State law (Water Code).

Policy VI.B.2. Prepare and maintain a Water Master Plan. Update the Water Master Plan, as needed, to incorporate changes in growth projections, water supplies, and demands.

Policy VI.B.3. Encourage the optimum beneficial use of water resources within the City. Strive to maintain an adequate supply of high-quality water for urban uses. At a minimum, potable water supplies delivered to water customers shall conform to the primary maximum contaminant levels as defined in State law (*environmental justice*).

Policy VI.B.4. Strive to stabilize groundwater levels and minimize groundwater overdraft, as part of conjunctive groundwater/surface water management program. View regional water resources, such as groundwater, surface water, and recycled wastewater, as an integrated hydrologic system when developing water management programs.

Policy VI.B.5. Construct, operate, maintain, and replace water infrastructure facilities in a manner that will provide the best option possible service to the public. Ensure that infrastructure is installed before or concurrently with development. Take a comprehensive approach to financing, using a blend of special taxes, benefit assessments, and other methods to ensure that infrastructure installation occurs in a timely manner.

Policy VI.B.6. Continue to establish guidelines, policies, and programs to implement water conservation to the maximum extent feasible. Funding for large conservation rebate or exchange programs should be maintained and enhanced. Strive to maximize the utilization of water resources when developing and implementing the City's Economic Development Strategy.

Goal VI.C. Be actively engaged in Stanislaus and Tuolumne Rivers Groundwater Basin Association, which provides a forum for coordinated planning and management of the Modesto Groundwater Subbasin.

Policy VI.C.1. Implement Local Basin Management Objectives discussed in the Integrated Regional Groundwater Management Plan, or the management objectives in the most recent groundwater sustainability plan, which relate to the specific approaches to water management goals including groundwater supply, groundwater quality, and protection against inelastic land surface subsidence.

B. Wastewater

Goal VI.D. Strive to meet increasingly strict wastewater regulations in a cost-effective manner. The City's wastewater treatment facilities will conform to standards for wastewater and biosolids treatment and disposal, as established by the Central Valley Regional Water Quality Control Board, in compliance with applicable federal and state laws.

Policy VI.D.1. Consider reclaiming wastewater to optimize the region's water resources, reduce discharge from the treatment plant, reduce the risk of fines and reduce costs associated with producing water from new/additional sources.

Policy VI.D.2. Comply with the Central Valley Regional Water Quality Control Board requirement to cease all discharge of wastewater that is treated at less than tertiary levels by May 1, 2018.

Policy VI.D.3. Consider reuse of wastewater treatment byproducts, such as biosolids and digester gas, which can reduce costs associated with treatment plant operations.

Policy VI.D.4. Pursue the near-term expansion of the wastewater treatment and disposal capacity of the Jennings Road Treatment Plant.

Policy VI.D.5. Pursue the long-term relocation of the Sutter Avenue Primary Treatment Plant, to the Jennings Road site, in order to consolidate operations and reduce treatment plant flooding risks.

Policy VI.D.6. Construct, operate, maintain, and replace wastewater facilities in a manner that will provide the best possible service to the public. In developing implementations plans, consider rehabilitation of essential existing facilities, expansion to meet current excess demand, and the timely expansion for future demand.

Goal VI.E. If service is available, provide wastewater services within the sewer service area in a manner that protects surface water and groundwater resources.

Policy VI.E.1. Allocate the City's wastewater system capacity to existing and future residential, commercial, and industrial customers. Discharges from environmental cleanup sites may be issued conditional discharge permits subject to the availability of excess treatment capacity. In accordance with federal and state regulations, discharges to the wastewater system may not, or may not threaten to, upset or interfere with, the wastewater system.

Policy VI.E.2. Require wastewater infrastructure master plans for the specific public infrastructure or when otherwise pertinent to provision of service at adopted service levels for the specific plan areas or other projects depending on site issues and location.

Policy VI.E.3. Individual development projects are subject to review by the City for adequate wastewater collection service and treatment.

Policy VI.E.4. Subject to the approval of the Stanislaus Local Agency Formation Commission, the City of Modesto will be the sole provider of wastewater services to the area within the City's Sphere of Influence and sewer service area.

Policy VI.E.5. Prior to annexation, determine that adequate wastewater treatment and disposal capacity can be provided for the proposed annexation area.

Policy VI.E.6. Within the city limits and the sewer service area, all developed properties should connect to the sewer system within five (5) years of the extension of service.

Policy VI.E.7. Encourage the regional beneficial reuse of reclaimed water, and commit to development of a full reclamation program in the long term. Comply with Title 22 standards for use of reclaimed water and criteria contained in the California Department of Public Health "Purple Book".

Policy VI.E.8. Participate in the North Valley Recycled Water Program, which involves routing of tertiary treated wastewater to the Delta Mendota Canal.

Policy VI.E.9. Strive to use land application of biosolids as the most environmentally beneficial reuse of this resource, rather than the disposal options of landfilling or incineration.

Policy VI.E.10. Develop methods to discontinue use of the sanitary system to temporarily drain stormwater runoff, and eliminate cross-connections between the wastewater and stormwater infrastructure systems.

Policy VI.E.11. Establish odor buffer zones around primary and secondary wastewater plants, thereby minimizing the likelihood of odors impacting new residential or commercial development.

Policy VI.E.12. Utilize source control and demand management among its tools for accomplishing the most cost-effective wastewater management that protects public health and the environment.

Policy VI.E.13. No provider of wastewater services may deny or condition the approval of an application for services, or reduce the amount of the services applied for, if the proposed development includes housing affordable to lower income households, except upon making specific findings pursuant to State law.

Policy VI.E.14. Require each new development project to be served with public sanitary sewers. Utilities located in private streets shall be part of the public sewerage system and shall be connected to a sewer lateral.

Policy VI.E.15. For properties outside of the City limits and sewer district boundaries, the extension of sewer service may be approved by the City Manager per City Council Policy 5.002, as amended.

Policy VI.E.16. Prepare and implement an update to the City's *Wastewater Master Plan* (WWMP), and complete an EIR for the updated WWM. The updated WWMP should account for the UAGP, zoning revisions, updated growth projections, updated sewer demand information, regulatory requirements, and identify new capital improvement projects. The WWMP should involve several improvements to the City's collection system and upgrades to the Sutter and Jennings treatment plants. The objectives of the updated WWMP may include the following:

- Implement the City's economic goals and Urban Area General Plan by planning for, and providing, sewer infrastructure in a timely and cost-effective manner to serve new and existing development.
- Continue the City's policy of providing affordable and attractive wastewater rates.
- Repair and replace aging wastewater infrastructure.
- Ensure adequate wastewater infrastructure and services are available to serve new growth within the General Plan and City's Sphere of Influence.
- Provide an adequate funding mechanism to pay for necessary improvements.
- Require new development to pay for infrastructure necessary to serve it.
- Plan for state-of-the-art facilities that reliably and economically meet the changing regulatory requirements.

For collection system improvements, the objectives of the updated WWMP may include:

- To increase sewer capacity to convey peak wet weather flows for a 10-year storm event, and where required, to serve future customers.
- To reduce wet weather flow volumes by removing cross connections with stormwater sewers.
- To extend service to new customers.
- To replace, repair, or rehabilitate existing trunk sewers, and reduce infiltration and inflow of stormwater into the sanitary sewers.
- To improve sewer collection reliability by providing new and redundant infrastructure improvements, including sewer trunk lines and lift stations, in known deficient areas at critical areas within the existing system.

For treatment plant improvements, the objectives may include the following:

- To reduce flooding impacts at the Sutter Plant site and increase treatment process operational flexibility and efficiencies by constructing new primary treatment and solids handling facilities at the Jennings Plant and remove primary treatment and handling facilities from the Sutter Plant.
- To increase the capacity of the outfall connecting the primary and secondary treatment plants, and to provide increased reliability for the existing outfall.
- To increase treatment systems efficiency, reliability, and functionality for both domestic and cannery process stream flows.
- To increase treatment operational opportunities through new systems or system alterations to remain in compliance with existing Central Valley RWQCB's NPDES requirements and plan for potential future permitting regulations.

C. Storm Drainage

Goal VI.F. Establish and maintain an operating storm drainage system that protects people and property from flood damage.

Policy VI.F.1. Prepare and adopt a Storm Drainage Master Plan to cover the entire City Sphere of Influence.

Policy VI.F.2. Require stormwater drainage infrastructure master plans for the public infrastructure or when otherwise pertinent to provision of service at adopted service levels for projects depending on site issues and location-specific concerns.

Policy VI.F.3. New storm drainage infrastructure may be by means of gravity storm drainage systems, as approved by the City Engineer. Such new storm drainage facilities are to consider the drainage facility requirements presented in Table V-9-1 of the Final Master Environmental Impact Report, the City's current NPDES permit and the Storm Drainage Master Plan.

Policy VI.F.4. As directed by the City Engineer, dual-use flood control/recreation facilities may be developed (dual-use facilities) as part of the storm drainage system. Design and construct dual-use facilities in accordance with the standards in the City of Modesto *Design Standards for Dual Use Flood Control/Recreation Facilities* manual.

Policy VI.F.5. Minimize impervious surfaces and generally maximize infiltration of rainwater in soils with development to promote groundwater recharge, where appropriate. Strive to maximize permeable areas to allow more percolation of runoff into the ground through such means as bioretention areas, green strips, planter strips, decomposed granite, porous pavers, vegetated swales, and other water permeable surfaces. Require planter strips between the street and the sidewalk within the community, wherever practical and feasible.

Goal VI.G. Plan and operate the storm water drainage system to minimize contaminants from infiltrating groundwater or entering surface waters to the maximum extent feasible.

Policy VI.G.1. Meet the requirements of acceptable urban storm runoff as established by the Central Valley Regional Water Quality Control Board Basin Plan for surface discharges, and the Environmental Protection Agency for underground injection.

Policy VI.G.2. Construct, operate, maintain, and replace storm water drainage facilities in a manner that will provide the best possible service to the public, as required by federal and state laws and regulations. In developing implementation plans, consideration shall be given to rehabilitation of existing facilities, remediation of developed areas with inadequate levels of drainage service, and timely system expansion for future development.

Policy VI.G.3. Construction activities shall comply with the requirements of the City's Stormwater Management Plan under its municipal NPDES stormwater permit, and the State Water Resources Control Board's General Permit for Discharges of Storm Water Associated with Construction Activity.

Policy VI.G.4. For developments within a mapped 100-year floodplain, prepare studies that demonstrate how the development will comply with both the construction and post-construction programs under the City's municipal NPDES permit. No increased erosion or releases of other contaminants that would cause violations of the City's municipal NPDES permit should occur as a result of development.

Policy VI.G.5. Ensure that new development complies with the City of Modesto's *Stormwater Management Program: Guidance Manual for New Development Stormwater Quality Control Measures*.

Policy VI.G.6. Require new development projects to preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands and buffers. Minimize disturbance of natural water bodies or natural drainage systems that might result from development, including road construction.

Policy VI.G.7. Design development projects to preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands and buffers. Minimize disturbance of natural water bodies or natural drainage systems that might result from development, including road construction.

Policy VI.G.8. Integrate Low Impact Development principles into proposed development projects' design. Low Impact Development is a storm water management and land development strategy that promotes conservation and use of natural on-site features combined with engineered small-scale hydrologic devices. In designing development projects, minimize the amount of impervious surface in order to maximize on-site infiltration of stormwater runoff and minimize the potential for storm water runoff from the site.

Chapter VII. Environmental Resources, Open Space, and Conservation

L. Flooding Hazards

Flood Hazard Policies – Planned Urbanizing Area

Policy VI.L[g]. All the Flood Hazard Policies adopted for the Baseline Developed Area apply equally within the Planned Urbanizing Area.

Policy VI.L[h]. The environmental review document for any Comprehensive Planning District located within or including any portion of a “Flood Potential Study Area” on Figure VII-2 should include a Flood Hazard Analysis developed to mitigate all of the Flood Hazard impacts identified in the Master Environmental Impact Report.

Policy VI.L[i]. The results of the Flood Hazard Analysis should be incorporated into the project design of any Specific Plan. The Specific Plan shall prohibit development within the flood channel, consistent with the City’s Floodplain Management Ordinance. Where possible, the Specific Plan shall minimize development within the floodplain, consistent with the City’s Floodplain Management Ordinance, by such means as providing setbacks from flood zones designating areas within the flood zones for low-intensity development only, or providing for setback levees. When levee improvements are necessary to achieve flood protection, the Specific Plan shall include adequate funding for those improvements. Funding mechanisms may include special assessments or special taxes for both capital and maintenance costs, and should not rely solely on impact fees. The City may work with other agencies to provide these improvements.

Integrated Regional Groundwater Management Plan

Chapter 6. Groundwater Protection Measures

6.1 Identification and Management of Wellhead Protection Area

6.1.1 Actions

The Association [Stanislaus and Tuolumne Rivers Groundwater Basin Association] will facilitate the following actions:

- A component of the DWSAP Program is an assessment of vulnerability of groundwater sources to quality degradation. The Association member agencies providing drinking water should obtain proper clearances for the release of information and prepare vulnerability summaries from the DWSAP Program to be used for guiding management decisions in the basin.
- Contact groundwater basin managers in other areas of the state for technical advice, effective management practices, and “lessons learned” regarding establishing wellhead protection areas.
- Attend groundwater conferences and technical workshops and meetings to learn more about groundwater management practices.

6.2 Regulation of the Migration of Contaminated Groundwater

6.2.1 Actions

The Association will take the following actions:

- Coordinate with the USGS to expand the network of monitoring wells to provide for an early warning system for public supply wells.
- If detections occur in these monitoring wells, facilitate meetings between the responsible parties and potentially impacted member agency(ies) to develop strategies to minimize the further spread of contaminants. Specifically, the consideration of altering groundwater extraction patterns or altering production wells in the vicinity of a pollutant plume to change the groundwater gradient.
- Provide a forum to share all information on mapped contaminant plumes and Leaking Underground Storage Tanks sites in order to develop groundwater extraction patterns and in site planning of future production or monitoring wells.
- Meet with representatives of the Central Valley Regional Water Quality Control Board (CVRWQCB) to establish a relationship and identify ways to have open and expedient communications with the CVRWQCB regarding any new occurrences of contamination, particularly when contamination is believed to have reached the water table.
- Track upcoming regulations on septic systems, agricultural discharges and other regulatory programs that pertain to water quality degradation.

6.3 Identification of Well Construction Policies

6.3.1 Actions

The Association will facilitate the following actions:

- Ensure that all member agencies are provided a copy of the applicable county well construction ordinance and understand the proper well construction procedures.
- Coordinate with member agencies to provide guidance, as appropriate, on well construction to prevent creating conduits through regionally confining beds. Where feasible and appropriate, this could include the use of USGS lithologic data prior to construction of the well to assist in well design.

6.4 Administration of Well Abandonment and Destruction Programs

6.4.1 Actions

The Association members, including Stanislaus County and the cities, will take the following actions for lands within their jurisdiction:

- Ensure that all Association members are provided a copy of the code and understand the proper destruction procedures and support implementation of these procedures.
- Follow up with Association members on reported abandoned and destroyed wells to confirm information collected from DWR and receive information on abandoned and destroyed wells to fill gaps in county records.

- Obtain “wildcat” map from California Division of Oil and Gas to ascertain the extent of historic gas well drilling operations in the areas these wells could function as conduits of contamination if not properly destroyed.
- Seek funding to develop and implement a program to assist well owners in the proper destruction of abandoned wells.

6.5 Mitigation of Overdraft Conditions

6.5.1 Actions

The Association will facilitate the following actions:

- Support programs that relieve aquifer overdraft through substitution of surface water for groundwater.
- Continue implementation of water conservation programs, including the water metering program, that will reduce reliance on groundwater pumping.
- Continue and enhance groundwater monitoring and groundwater use to ensure the balanced state of the groundwater basin.
- Support programs by MID and OID to improve irrigation service to water users who may otherwise irrigate using groundwater because of the greater operational flexibility achievable through pumping.
- Seeking funding for programs and projects that would identify and mitigate potential condition of overdraft in the basin.

6.6 Replenishment of Groundwater Extracted by Water Producers

6.6.1 Actions

The Association’s member agencies will take the following actions:

- Identify areas having high potential for contributing to aquifer recharge and encourage agencies to communicate with land use planning entities to enact measures that will protect these lands from development that would reduce their value as recharge sites.
- Communicate with DWR and other governmental agencies studying groundwater and river interactions.

6.7 Construction, and Operation of Recharge, Storage, Conservation, Water Recycling and Extraction Projects

6.7.1 Actions

The Association will take the following actions:

- Encourage sharing of information on project planning, design, and operation among member agencies.
- Promote a coordinated approach toward project development and operation to lower the costs and increase the benefits of water management efforts.

- Seek funding for projects and programs that will contribute to water conservation, recycling, and recharge of the groundwater basin.

6.8 Control of Saline Water Intrusion

6.8.1 Actions

The Association coordinates with members agencies and other local and state agencies to take the following actions:

- Continue collecting groundwater quality data along the San Joaquin River, and track the progression, if any, of saline water moving east from the San Joaquin River. This action will include communicating with DWR's District Office on a biennial basis to check for significant changes to TDS concentrations in wells. DWR has a regular program of sampling water quality in selected domestic, agricultural and monitoring wells throughout the basin. These wells will be augmented by additional monitoring wells to develop an early warning system able to detect saline water intrusion from the river.
- The program of monitoring for intrusion of saline water will be supplemented by the Groundwater Monitoring Program described in this plan. The program includes provisions for monitoring groundwater levels and quality.
- Observe TDS concentrations in public supply wells that are routinely sampled under the DHS Titel 22 Program.

City of Modesto 2015 Water Shortage Contingency Plan

Based on the City's 2015 Water Shortage Contingency Plan, the UWMP identifies the following approaches related to water conservation and shortages (drought). Water shortages stages are defined as follows: Stage I is a 10-20 percent reduction, Stage II is a 20-35 percent reduction, Stage IIA is a 30-40 percent reduction, and Stage III is a 35-50 percent reduction.

- Prohibitions on end uses to limit specific uses of water (based on the City's 2015 Drought Contingency Plan):
 - Landscape
 - Limit landscape irrigation to specific times
 - Stage I, prohibit outdoor water use from 12:00 noon to 7 p.m. (however, may be extended to 9 a.m.-7 p.m. at Council discretion)
 - Stage II, prohibit water use from 9 a.m. to 7 p.m.
 - Limit landscape irrigation to specific days
 - Stage I, limit to no more than three days per week
 - Stage II, limit to no more than two days per week
 - Stage IIA, limit to no more than one day per week

- Prohibit certain types of landscape irrigation
 - Stage III, no outdoor water use except for trees or shrubs by hand and vegetation maintained through drop irrigation
- Prohibit all landscape irrigation
 - Stage III, moratorium on all new landscaping
- Other landscape restriction or prohibition
- Stage I, new landscaping must comply with existing and future landscape ordinances
 - Stage II, no irrigating turf or ornamental landscaping during or/and 48 hours following measurable rainfall
- Commercial, Industrial, and Institutional
 - Lodging establishments must offer opt-out of linen service (Stage II)
 - Restaurants may only serve water upon request
 - Stage I, encouraged only
 - Stage II, mandatory
 - Other restrictions or prohibition
 - Stage III, moratorium on all new connections
- Water Features
 - Restrict water use for decorative water features, such as fountains
 - Stage II, no use of outdoor fountains except for maintenance purposes
 - Other water feature or swimming pool restrictions
 - Stage III, moratorium on all new swimming pools
- Other
 - Stage I – customers must repair leaks, breaks, and malfunctions in a timely manner (water leaks, once identified by homeowner, must be repaired within 24 hours); require automatic shutoff of hoses; prohibit use of potable water for washing hard surfaces (hosing concrete areas, building exteriors, etc., is prohibited except for health and safety concerns)
 - Stage III – prohibit vehicle washing except at facilities using recycled or recirculating water
- Other

- Stage I – Car washing limited to specific times and days (same as irrigation use); require water meter installation on all new single-family homes
 - Stage II – Mandatory retrofit of low flow showerheads in homes when building/ remodeling occurs
 - Stage III – Mandatory retrofit of low flow toilets in homes when building/ remodeling occurs
- Enforced through penalties for excess water use (administrative fees, fines), as required by California Water Code Section 10632(a)(6)
- Consumption reduction methods to reduce water demand:
 - Expand public information campaign;
 - Improve customer billing;
 - Offer water use surveys;
 - Provide rebates on plumbing fixtures and devices;
 - Provide rebates for landscape irrigation efficiency;
 - Decrease line flushing;
 - Increase water waste patrols;
 - Reduce system water loss; and,
 - Moratorium or net zero demand increase on new connections.

TSP

Chapter 6. Community Services

6.5.1 Flood Hazards

In the Modesto area, flood hazard areas are limited to properties along Dry Creek, and the Stanislaus and Tuolumne Rivers. Located about 2 ½ miles to the north, the Stanislaus River is the closest flood hazard area to the project site. Dry Creek and Tuolumne Rivers are located about 2 and 4 miles, respectively, southeast of the project site. The project site is not located within any 100-year flood hazard area and none of the development components would be constructed within any flood hazard area.

In 1998, there was street flooding through the project site, coming off-site diagonally from the Oakdale area, continuing southeast through the Village One development area, and continuing into Naraghi Lake, which is about one mile southeast of the project site. Development of the TSP area will address the potential for surface flooding that may occur. Chapter 3, Public Facilities Infrastructure Concept Plan, describes the off-site flows and its relationship to the site. Chapter 9, Implementation, discusses the necessary infrastructure to address the storm water run-off both on-site and off-site.

TSP Final EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

I. Hydrology and Water Quality

Impact I.1. Construction activities could result in degradation of water quality in nearby surface water bodies by causing accidental spills and/or by reducing the quality of storm water runoff. (**Less than significant with mitigation**).

Mitigation Measure I.1. *The proponent shall prepare a SWPPP for each development project under the specific plan (or one Master SWPPP for all development) designed to reduce potential impacts to surface water quality through the construction period of all of the project components (whether or not the particular portion of the projects disturbs more than one acre). The SWPPP shall emphasize measures designed to minimize erosion and off-site sedimentation.*

Impact I.2. Operation-phase use of the site could result in degradation of water quality in receiving waters by reducing the quality of storm water runoff. (**Less than significant with mitigation**).

Mitigation Measure I.2. *The City shall ensure that development under the proposed project meets all the requirements of the current Municipal NPDES Permit (NPDES Permit No. R5-2003-0132 as amended by Order No. R5-2002-0182) for operation-phase water quality treatment.*

Impact I.3. Implementation of the project could alter drainage patterns at the site potentially exceeding the capacity of existing conveyances and causing localized flooding.

Mitigation Measures 1.3a. *As a condition of approval of the final grading and drainage plans for the first project proposed in the plan area, the developer must acquire written approval from the MID to discharge runoff to the MID Main Canal (up to 5.0 cfs), and provide this documentation to the City of Modesto Public Works Department.*

Mitigation Measure 1.3b. *As a condition of approval of the final grading and drainage plans for all projects proposed.*

Impact I.4. Implementation of the project could place people and housing within an area subject to sheet flooding. (**Less than Significant with Mitigation**).

Mitigation Measure I.4. *The TSP project proponent shall:*

- *Design and construct the proposed on-site development so that the sheet flow flooding generated from the upstream watershed that can occur in the region will be safely passed through the proposed development. These flows shall be contained within the streets and be dispersed on the downstream side of the project site in a manner that does not concentrate or increase the flows, ensuring that the potential for increased erosion or flooding downstream is minimized.*
- *Ensure that finished floor elevations of all residential, commercial, and industrial structures be a minimum of one foot above the elevation of 100-year sheetflood.*
- *Contribute their fair share of the cost to design and construct the proposed northeast flood control solution.*

Impact I.5. Implementation of the proposed project could place housing in a FEMA-designated floodplain. (*Less than Significant*).

Impact I.6. Implementation of the proposed project could place new development within an area potentially subject to dam failure inundation. (*Less than Significant*).

Impact I.7. Implementation of the project could result in depletion of groundwater resources. (*Less than Significant*).

Impact I.8. Existing water supply wells within the Specific Plan area, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality. (*Less than Significant with Mitigation*).

Mitigation Measure I.8. Prior to approval of a grading plan for development of a particular parcel of the Specific Plan area, a well survey shall be conducted to determine the location and characteristics of each well for that particular parcel.

Responses to Checklist Questions

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? Response: Implementation of proposed Project would not violate any water quality or waste discharge requirements. Construction activities could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of soil and could adversely affect water quality in nearby surface waters. The RWQCB requires a project-specific SWPPP to be prepared for each project that disturbs an area one acre or larger. The SWPPP is required to include project specific best management measures that are designed to control drainage and erosion. Mitigation Measure I.1 of the TSP EIR would require the preparation of a SWPPP to ensure that the proposed Project prepares and implements a SWPPP throughout the construction phase of the proposed Project. The SWPPP (Mitigation Measure I.1) and the project specific drainage plan would reduce the potential for the proposed Project to violate water quality standards during construction. Implementation of Mitigation Measure I.1 would ensure that the proposed Project would have a *less than significant* impact on operation-related water quality.

Relevant TSP Mitigation Measure

Mitigation Measure I.1: The project shall prepare a SWPPP for each development project under the specific plan (or one Master SWPPP for all development) designed to reduce potential impacts to surface water quality through the construction period of all of the project components (whether or not the particular portion of the project disturbs more than one acre). The SWPPP shall emphasize measures designed to minimize erosion and off-site sedimentation.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? Response: The project site is located within an area underlain by the Modesto Subbasin of the San Joaquin Valley Groundwater Basin (as designated by the California Department of Water Resources). The Modesto Subbasin is divided into three principal aquifers - the unconfined upper Western Principal Aquifer, the confined lower Western Principal Aquifer, and the unconfined to semiconfined Eastern Principal Aquifer located east of the Corcoran Clay aquitard. The City of Modesto overlies the central/western region of the Eastern Principal Aquifer. Water levels in the Eastern Principal Aquifer have declined since about 2000, with significant declines during the recent drought. However, the historical declining trends and the magnitude of

decline during the recent drought are most pronounced in the eastern region of the Eastern Principal Aquifer, east of the City of Modesto.

Over the historical study period, agricultural production has expanded in the eastern Subbasin where groundwater is the primary source of water supply. Over-pumping in this area has led to water level declines expanding into other areas, which exacerbated conditions during the 2014-2016 drought and caused impacts to both public and domestic water supply wells.

The GSP identifies that the subbasin declining water levels are occurring primarily in the eastern Subbasin – not the central Subbasin where the City is located. The Modesto Subbasin experienced a decline of groundwater in storage of 43,000 AFY during historical conditions, based on an inflow of 440,000 AFY and an outflow of 483,000 AFY. The historical water budget estimates groundwater production of 311,000 AFY; by subtracting the groundwater deficit from the groundwater production, a simplified sustainable yield of 268,000 AFY can be estimated for the historical study period.

The average annual depletion in groundwater for the current and projected conditions are 125,000 AFY and 11,000 AFY, respectively. The average decline of groundwater in storage of 11,000 AFY during projected conditions is significantly less than historical storage depletion of 43,000 AFY. However, this decline occurs at the expense of increased seepage of 86,000 AFY from primarily the Stanislaus and Tuolumne rivers in response to water level declines. This future increase in streamflow depletion as predicted by the model is considered significant and unreasonable within the meaning of that term as defined in the Sustainable Groundwater Management Act (SGMA).

Although the Modesto Subbasin is not at risk of depleting a large percentage of its total volume of groundwater supply, the ongoing depletion due to pumping larger volumes from the groundwater basin than can be reasonably replenished (overdraft conditions) requires mitigation to meet the Subbasin sustainability goal. The chronic lowering of groundwater levels in the Modesto Subbasin is caused primarily by overdraft conditions, illustrating the close relationship between these two indicators.

The sustainable yield is 267,000 AFY for the Modesto Subbasin. The sustainable yield is based on the current and latest data and information for the subbasin. It is expected that the sustainable yield estimate would be updated for the next GSP update in 2027, as additional data and information become available on the operation of the Subbasin, implementation of projects and management actions, groundwater levels, storage, and quality, and as updates to the tools and technology, such as updates to the integrated numerical model are implemented.

The City of Modesto has prepared an Urban Water Management Plan (UWMP 2020) that predicts the water supply available to the City of Modesto in normal, single-dry, and multiple-dry years out to 2045. Using the Tivoli Water Supply Assessment, the estimated water demand for the Project site would be 60,117.20 gallons per day if developed with the existing land uses. The proposed uses would reduce total water demand to 41,625 gallons per day, which would be a beneficial impact. It is also notable that the current orchard has an irrigation demand that is estimated to be 65,185.46 gallons per day (3.66 af/ac/yr), which means that the proposed Project would result in a net decrease in water use on the project site. Table Hydro-1 provides a comparison of water demand with existing and proposed uses.

TABLE HYDRO-1: COMPARISON OF WATER DEMAND WITH EXISTING AND PROPOSED USES

Land Use	Factors	Density	Units	Existing acres	Existing Water Demand	Proposed acres	Proposed Water Demand
Very Low Density Residential	730	2.5	6	2.55	4,653.75	-	-
Medium High Density Residential	225	21	102	4.87	23,010.75	-	-
Regional Serving Commercial	2590			12.53	32,452.70	-	
Medium Density Residential	225	13	185			19.95 ¹	41,625.00
TOTAL				19.95	60,117.20	19.95	41,625.00

SOURCE: WATER SUPPLY ASSESSMENT FOR TIVOLI SPECIFIC PLAN (2007)

The TSP EIR determined that the full buildout of the TSP planning area would not result in significant depletion of groundwater resources. Given that the Project site only encompasses a portion of the TSP planning area, its impact on groundwater resources can reasonably be considered less than that of the full buildout. Therefore, the Project's impact on existing groundwater resources would 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: c.i) Result in substantial erosion or siltation on- or off-site; c.ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; c.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 c.iv) Impede or redirect flood flows? e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? Responses : The study area is located in northeastern Modesto approximately three miles south of the Stanislaus River and two and one-half miles north of Dry Creek (a major tributary to the Tuolumne River). The Modesto Irrigation District (MID) operates several irrigation canal "laterals" that flow east to west in the vicinity of the study area. Lateral No. 6 is located less than one mile to the north and Lateral No. 3 is located approximately 1.5 miles to the south. These laterals, open concrete-lined canals that were completed in the early 1900s, are essentially constructed conveyance structures that divert water from the Tuolumne River (and a series of reservoirs). The primary function of these laterals is to distribute water to irrigated farmlands. To a limited extent, these laterals receive irrigation return flows and receive urban storm water runoff.

Increasingly, discharges into the laterals of urban storm water runoff associated with new development are being scrutinized by the MID. The MID is concerned about the quantity and quality of storm water in the laterals. Quantity is an issue because the laterals were designed to distribute irrigation water and therefore decrease in size downstream (because irrigation water is used along the flow path and the acreage served downstream diminishes). Storm water conveyances typically increase in size downstream as more water is collected. If too much storm water is discharged to the laterals, they could flood downstream or overtop the capacity of certain reaches throughout the system.

The project site is not located within a FEMA-designated 100-year flood hazard zone. However, the site is within a broad, relatively flat area that is subject to sheet flow-type shallow flooding. Flooding can occur because of catastrophic dam failure and the release of waters contained in upstream reservoirs. Although a very low probability event, catastrophic structural dam failure can be caused by earthquake or overflow.

The proposed Project would conform to existing flood hazard control regulations within the Modesto General Plan as well as the recommendations and priorities established in the *Integrated Regional Groundwater Management Plan for the Modesto Subbasin* and the *City of Modesto 2015 Water Shortage Contingency Plan*. These plans guide hydrologic planning decisions for the region. The TSP EIR identifies mitigation strategies to reduce risk of potential flooding on the Project site. If properly implemented, the Project impact would be ***less than significant***.

Relevant TSP Mitigation Measure:

Mitigation Measure I.1. *The proponent shall prepare a SWPPP for each development project under the specific plan (or one Master SWPPP for all development) designed to reduce potential impacts to surface water quality through the construction period of all of the project components (whether or not the particular portion of the projects disturbs more than one acre). The SWPPP shall emphasize measures designed to minimize erosion and off-site sedimentation.*

Mitigation Measure I.2. *The City shall ensure that development under the proposed project meets all the requirements of the current Municipal NPDES Permit (NPDES Permit No. R5-2003-0132 as amended by Order No. R5-2002-0182) for operation-phase water quality treatment.*

Mitigation Measures 1.3a. *As a condition of approval of the final grading and drainage plans for the first project proposed in the plan area, the developer must acquire written approval from the MID to discharge runoff to the MID Main Canal (up to 5.0 cfs), and provide this documentation to the City of Modesto Public Works Department.*

Mitigation Measure 1.3b. *As a condition of approval of the final grading and drainage plans for all projects proposed.*

Mitigation Measure I.4. *The TSP project proponent shall:*

- *Design and construct the proposed on-site development so that the sheetflow flooding generated from the upstream watershed that can occur in the region will be safely passed through the proposed development. These flows shall be contained within the streets and be dispersed on the downstream side of the project site in a manner that does not concentrate or increase the flows, ensuring that the potential for increased erosion or flooding downstream is minimized.*
- *Ensure that finished floor elevations of all residential, commercial, and industrial structures be a minimum of one foot above the elevation of 100-year sheetflood.*
- *Contribute their fair share of the cost to design and construct the proposed northeast flood control solution.*

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? Response: The Project site is located outside the 100- year flood zone and is

categorized as having a low flood risk. The proposed Project would not expose people or structures to a significant risk of loss, injury or death involving flooding because of the failure of a levee or dam given the distance between the Project site and existing dams and other flood control infrastructure. The Project site is not anticipated to be inundated by a tsunami given its location in California's Central Valley. The Project site is not anticipated to be inundated by a seiche because it is not located near a water body capable of creating a seiche. Implementation of the proposed Project would have a ***less than significant*** impact relative to the risk of release of pollutants due to project inundation by flood hazards, seiches, and tsunamis, or the potential to alter the course of a stream or river in a manner that would impede or redirect flood flows.

XI. LAND USE AND PLANNING

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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	

Prior Environmental Impacts

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on the site's mineral resources will be guided, in part, by the TSP EIR.

Site Setting

Existing General Plan Land Use

The Project site is designated as Residential and Regional Commercial on the existing General Plan Land Use Map. These uses are described below.

Residential (R)

a. Purpose and Intent. To provide for residential uses throughout the Modesto Urban Area. Residential uses include single-family detached housing, single-family attached housing, multi-family housing, and mobile homes. Small-lot single-family residential development is encouraged, subject to applicable zoning regulations, design guidelines and General Plan criteria. Compatible uses in the residential designation may include schools, parks, and religious or community facilities. Existing small-scale commercial and office uses are also deemed compatible.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan where residential land uses would be compatible with other existing and planned land uses.

c. Land Use Intensity. The land use intensity is a typical density of 6.6 dwelling units per gross acre, to a maximum of 7.5 dwelling units per gross acre, on an area-wide basis without requiring a General Plan Amendment, and between 10.9 and 29.0 dwelling units per gross acre for multi-family housing.

Regional Commercial (RC)

a. Purpose and Intent. To provide for large-scale commercial areas and regional retail Commercial uses serving the needs of the entire region. Regional Commercial uses serve a much larger population by providing commercial activities not needed on a regular basis. Their location is primarily determined by major transportation routes which allow convenient access.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan area that is located with adequate access to regional traffic routes and transit corridors.

- c. Land Use Intensity. The land use intensity is a Floor Area Ratio of approximately 0.35.

Existing TSP Land Use

The Project site is designated as Very Low Density Residential, Medium High Density Residential, and Regional Serving Commercial on the TSP Land Use Map. These uses are described below.

Very Low Density Residential (VLDR)

The Very Low Density Residential (VLDR) designation provides area for large lot, “rural-oriented estate” homes within the TSP. All these homes will be either along or behind the Mable Avenue area, where similar homes now exist. The residential density will range from 1-3 DU’s/acre. The developable VLDR designation occurs on approximately 10 acres and will yield approximately 15 new large lot homes. Lot sizes are expected to average from 0.50 to 0.75 acres and will accommodate spacious detached single-family homes.

Medium High Density Residential (MHDR)

The Medium High Density Residential (MHDR) land use designation is intended to provide for the development of a variety of multi-family residential dwellings. The intent here is to, once again, allow for greater site planning and architectural design flexibility in order to stimulate a richer mix of predominantly rental (with some for sale) multi-family housing styles and selections. Flexibility is provided in both the development standards and design criteria and guidelines to both allow a variety of densities and styles while maintaining the overall limit range on the total number of MHDR dwelling units.

Regional Serving Commercial (RSC)

The Regional Serving Commercial (RSC) land use designation is intended to provide for regional commercial, entertainment and office uses. Development occurring within this designation will be coordinated and integrated in conformance with the design criteria and guidelines found in Chapter 5.0. A site specific and detailed site plan for development by the City is required in the RSC areas and will be incorporated as a part of the TSP.

RSC-2: RSC-2 is located at the corner of Oakdale Road the future extension of Bridgewood Avenue. The intended emphasis for this commercial center is also to be the location for more larger format uses (sized for only one) combined with smaller retail uses. Similar to RSC-1 high quality architecture landscaping, and amenities must be provided.

Modesto General Plan

Chapter III. Community Development Policies.

B. Adopted Land Use Designations

Residential (R)

- a. Purpose and Intent. To provide for residential uses throughout the Modesto Urban Area. Residential uses include single-family detached housing, single-family attached housing, multi-family housing, and mobile homes. Small-lot single-family residential development is encouraged, subject to applicable zoning regulations, design guidelines and General Plan

criteria. Compatible uses in the residential designation may include schools, parks, and religious or community facilities. Existing small-scale commercial and office uses are also deemed compatible.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan where residential land uses would be compatible with other existing and planned land uses.

c. Land Use Intensity. The land use intensity is a typical density of 6.6 dwelling units per gross acre, to a maximum of 7.5 dwelling units per gross acre, on an area-wide basis without requiring a General Plan Amendment, and between 10.9 and 29.0 dwelling units per gross acre for multi-family housing.

Regional Commercial (RC)

a. Purpose and Intent. To provide for large-scale commercial areas and regional retail Commercial uses serving the needs of the entire region. Regional Commercial uses serve a much larger population by providing commercial activities not needed on a regular basis. Their location is primarily determined by major transportation routes which allow convenient access.

b. Location Criteria. This designation may be applied anywhere within the Modesto Urban Area General Plan area that is located with adequate access to regional traffic routes and transit corridors.

c. Land Use Intensity. The land use intensity is a Floor Area Ratio of approximately 0.35.

C. Land Use Goals and Policies

1. Overall

Goal II.A. Zoning Consistency. Maintain and enhance consistency between the General Plan (land use designations and policies) and zoning.

Policy III.A.1. Parcel-Specific Zoning. Zoning within the incorporated City limits should be, and generally is, consistent with the General Plan Land Use Designations as presented on the Land Use Diagram. However, because these designations are broad in nature, there may be minor instances in which the existing zoning for a particular property is not consistent with the Land Use Designation for the property. These situations are still considered to be consistent with the overall goals and policies of the General Plan, and development of these properties may occur consistent with zoning.

Policy III.A.2. Rezoning. Rezoning should also be consistent with the General Plan Land Use Designations. However, rezonings involving less than five (5) acres may occur even if they are not consistent with the Land Use Designation for the property, as long as the rezoning can be found consistent with the Land Use goals and policies of the General Plan. Rezoning of five (5) acres or more that are inconsistent with the applicable Land Use Designation(s) will require a General Plan amendment.

Goal III.B. Quality of Life. Maintain and improve the integrity of the existing developed City, and promote complete, sustainable, compatible and high-quality development – for living, working, shopping and recreation – across the entire city.

Policy III.B.1. Infill Incentives. Facilitate infill development through active leadership and strategic provision of infrastructure and services, and supporting land uses. Provide incentives for infill development, redevelopment and growth in existing urbanized areas to enhance community character, optimize infrastructure investments, support increased transit use, promote non-motorized transportation, increase housing diversity and enhance commercial viability. Structure fee programs so that infill development is “priced” according to its relative infrastructure efficiencies and the community wide benefits to be realized.

Policy III.B.2. Existing City. To maximize economic and social benefits, and resource efficiencies, prioritize and focus new development within the existing City limits. This will strengthen existing neighborhoods and maximize efficiencies of utility / infrastructure systems. New development will be accessible by all modes of transportation, both motorized and non-motorized, with an emphasis on availability of public services.

Policy III.B.3. Property Maintenance. Encourage owners of visually unattractive or poorly-maintained properties to upgrade existing deficiencies, whether related to structures, outdoor storage / activities, and/or any other maintenance issues, in order to improve their visual quality.

2. Neighborhoods

Goal III.C. Neighborhoods. Create neighborhoods that are complete, compact and sustainable so that housing, jobs, shopping and transit access are within easy walking distance. Include a mix of compatible land uses within close proximity, contain a diversity of housing types to accommodate a wide range of economic levels and age groups, and have a center focus that combines commercial, civic, cultural, and recreational uses in order to facilitate high-quality living environments. Access to healthy foods and grocery stores that sell fresh fruits and vegetables is a high priority.

Policy III.C.1. Complete Neighborhoods. Complete neighborhoods promote livability, sustainability and safety for all residents. Neighborhoods are to contain: a mix of housing types including affordable and market-rate; a range of services and facilities such as schools, parks, retail, services & civic facilities; transit access within a half-mile of all dwelling units; and, complete streets with tree canopy cover that accommodate both motorized and non-motorized mobility.

Policy III.C.2. Protect Established Neighborhoods. Preserve, protect, and enhance established neighborhoods by providing sensitive transitions between and among adjoining neighborhoods, and by requiring new development – both private and public – to respect and respond to those existing physical characteristics, buildings, streetscapes, open spaces, and urban form that contribute to the overall character and livability of the neighborhood.

Policy III.C.3. Neighborhood Shopping Centers. Locate neighborhood shopping centers, preferably at the intersection of two arterial streets, in each neighborhood. Neighborhood shopping centers should include full-service food stores with fresh fruits and vegetables.

Policy III.C.4. Diverse Centers. Encourage development of local, citywide and regional mixed-use centers that address different community needs and market sectors, and that compliment and are well-integrated with surrounding neighborhoods.

Policy III.C.5. New Neighborhoods Core. All parts of new neighborhoods should be within a half-mile of a central gathering place that is located on a collector street or minor arterial and that includes public space, shopping areas, transit access, and community-supportive facilities and services.

Policy III.C.6. Traditional Grid and Pedestrian Safety. Design new neighborhoods with traditional grid block sizes ranging from 300 to 400 feet in length. Separate sidewalks from the curb with a minimum eight-foot (8') landscaped parkway. Construct context-appropriate traffic-calming improvements, such as traffic circles and intersection bulbouts.

Policy III.C.7. Connections to Transit. New neighborhoods include transit stops that support and connect to the citywide transit system, and that are within a half-mile walking distance of all dwelling units.

Policy III.C.8. Neighborhood Schools. Neighborhoods should contain sufficient K-12 schools necessary to serve them. Locate schools on Collector streets, preferably at or near the intersection of two Collector streets. Locate neighborhood parks (see Chapter VI for parks standards) adjacent to school sites. New schools and parks should be surrounded by streets on all sides wherever possible to encourage access by walking and bicycling.

Policy III.C.9. Senior Housing Development. Encourage the development of senior housing in neighborhoods that are accessible to public transit, commercial services, and health & community facilities.

Policy III.C.10. Neighborhood Open Space. Neighborhoods should contain an ample supply of specialized open space in the form of squares, greens and parks, whose frequent use is encouraged through placement and design. Provide linkages between such areas and surrounding neighborhoods.

Policy III.C.11. Development Guidelines. Apply Neighborhood Compatibility Guidelines, Multi-Family Residential Design Guidelines, Guidelines for Small-Lot Single-Family Residential Developments, and other adopted development guidelines, as appropriate to new construction, additions to existing structures, replacement of existing buildings / land uses, and other neighborhood improvements.

Policy III.C.12. Residential Design. For new residential development, include a range of lot sizes, varied setbacks, and orient buildings to the street (e.g. entry, windows).

Policy III.C.13. Transitions in Scale. Scale and massing of new development in higher-density centers and corridors should provide appropriate transitions in building height and bulk that are sensitive to the physical and visual character of adjoining neighborhoods.

3. Major Transportation Corridors

Goal III.D. Corridor Studies. Corridor Studies guide infill development, and re-use/recycling of existing development, along major transportation corridors. Such development will balance vehicular circulation and access against all other travel modes – both motorized and non-motorized. Development along major transportation corridors should mix land uses effectively so that housing, retails and service needs are combined with pedestrian-friendly facilities and gathering places.

Policy III.D.1. Study Corridors. The following “Major Transportation Corridors” are the best candidates for reinvestment, based in part on the connectivity they provide between downtown and other parts of the City / surrounding region (see Figure III-2):

- i. McHenry Avenue/SR108;
- ii. Yosemite Avenue / SR132;
- iii. Crows Landing Road;
- iv. Paradies Road;
- v. Maze Boulevard
- vi. N. 9th Street, and,
- vii. Other corridor(s) as needed.

Policy III.D.2 Corridor Study Topics. Corridor Studies will address the following:

- i. Transportation mode priority (include transit, bicycle, and pedestrian);
- ii. Street design;
- iii. Land use designations;
- iv. Development standards & design guidelines;
- v. Pedestrian safety; and,
- vi. Other considerations as applicable.

Goal III.E. Corridor Development. Development along major transportation corridors that occurs pursuant to an adopted corridor study should be compact, mixed-use, transit-/bicycle-/pedestrian-friendly, and scaled appropriately to match the context and transition to existing nearby neighborhoods. *(Air quality, public health, energy conservation, environmental justice)*.

Policy III.E.1. Transit Oriented Development. Locate higher-density, transit-oriented, mixed-use development (TOD) along major transportation corridors near significant intersections and public transportation facilities. Development density along major transportation corridors should increase with proximity to transit stops and decrease with distance from transit stops in order to encourage increased transit ridership. Establish specific thresholds, standards and guidelines for TOD and other development types in the applicable corridor study documentation. *(Air quality, public health, energy conservation, environmental justice)*.

Policy III.E.2. Corridor Mixed-Use Infill. Promote mixed-use infill development along major transportation corridors through the use of corridor studies, zoning, flexible development standards, density bonuses and other development incentives. Locate such development along the back of sidewalk, and oriented to frame the street, while incorporating public plazas and pedestrian amenities that will create people-oriented centers for living, working and gathering. *(environmental justice)*.

Policy III.E.3. Corridor Residential Infill. Encourage high-quality, compact, multi-story residential infill development along major transportation corridors, through design criteria contained within applicable corridor study documentation. Minimize parking requirements where appropriate. Maintain compatibility with form and function of nearby existing neighborhoods through use of applicable design guidelines.

Policy III.E.4. Corridor Study Implementation. Corridor studies may include a form-based code component to guide subsequent development, in order to provide clear and consistent

development standards. Other potential implementation mechanisms include, and are not limited to, mixed-use and/or overlay zoning, specific plans, and design guidelines.

Policy III.E.5. Corridor Features. Promote the transformation of major transportation corridors, via formal corridor studies, into boulevards that are attractive, comfortable, and safe for pedestrians and cyclists by incorporating the following design features: (*Air quality, public health, energy conservation, environmental justice*).

- i. Wide sidewalks to accommodate pedestrian traffic, amenities and landscaping;
- ii. Class I, II, or IV bike facilities;
- iii. On-street parking between sidewalks and travel lanes;
- iv. Few curb cuts and driveways;
- v. Enhanced pedestrian street crossings;
- vi. Compatible interface with adjacent existing residential neighborhoods;
- vii. Buildings located at the back of sidewalk;
- viii. Building entrances oriented to the street;
- ix. Transparent ground floor frontage
- x. Street trees and furnishings; and,
- xi. Pedestrian-scale lighting and signage.

D. Comprehensive Planning Districts

1. Principle Comprehensive Planning District Policies

The following Principal CPD policies apply to all CPDs, regardless of whether they are located in the Baseline Developed Area or the Planned Urbanizing Area.

Policy III.I.1. CPD Implementation. Specific Plans, as defined in Chapter VIII, should be used for the implementation of the CPDs presented in Figure III-1.

Policy III.I.2. CPD Property Owners. Since each CPD contains a number of properties, unified direction from affected property owners should be encouraged, particularly for privately-initiated applications. In the case of disparate or unknown development intentions, the City may proactively seek consensus from affected property owners.

Policy III.I.3. CPD Specific Plans. The Specific Plan(s) within each CPD should follow the policies and procedures as outlined in the City of Modesto's Specific Plan Procedures and Preparation Guide (Guide), which identifies all subsequent land use approvals required to be consistent with the Specific plan. The Guide should be updated in order to keep it current with regard to policies and practices.

Policy III.I.4. Specific Plan Financing. Each Specific Plan should be accompanied by a long-range financing strategy that provides reasonable estimates of the costs of on- and off-site infrastructure to support the proposed development pattern. The strategy should generally address public facility funding for any development project that serves to implement the subject Specific Plan. If new public facilities are required that will also serve the broader community, the Specific Plan should include options for broad-based funding mechanisms. Each Specific Plan should address the need to provide water, wastewater and storm drainage infrastructure, in the context of the required Facilities Master Plan and Infrastructure Master Plan (prepared at developer's expense).

Policy III.I.5. Public Safety Funding. With each Specific Plan, prepare a long-range financing strategy that provides reasonable estimates of the long-term public safety facilities, maintenance and operational costs. Identify funding mechanisms for these costs within the financing strategy documentation.

Policy III.I.6. Specific Plan-CPD Relationship. More than one Specific Plan may be processed within a given CPD, as long as the remaining area within the CPD can still comply with the General Plan policies presented in this chapter. Conversely, a Specific Plan can be used to implement more than one CPD, when those districts are adjoining. A CPD may consist of more than one Specific Plan provided that the Specific Plans are consistent, compatible, and complement one another. This is particularly important for issues related to, but not limited to, land use plans, circulation plans and the Specific Plans' financing sections (which must be correlated to provide for adequate infrastructure throughout the CPD). If Specific Plans are adopted at different times within a CPD, the first Specific Plan should include an infrastructure plan for the entire CPD.

TSP Final EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

A. Land Use Planning

Impact A.1. The proposed TSP project would introduce a new land use designation and zoning districts in proximity to existing residential, commercial, and agricultural uses, creating the potential for land use compatibility conflicts. (***Less than Significant***).

Impact A.2. The proposed TSP project would introduce new residential, commercial, office, and school uses in proximity to ongoing agricultural operations, including the keeping of farm animals, creating the potential for land use compatibility conflicts. (***Less than Significant***).

Responses to Checklist Questions

a) Physically divide an established community? Response: The Project site is in the northeastern portion of the City of Modesto, which currently has a rural and residential characteristic. The Project site, however, is part of a Specific Plan that was approved in 2007 and has yet to fully develop. The proposed Project is compatible with the surrounding residential uses and would not physically divide an established community, nor disrupt the proposed land uses in the TSP. Implementation of the proposed Project would have a ***less than significant*** impact relative to this topic.

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? Response: The proposed Project includes a General Plan Amendment and rezone to revise the land use and zoning designations established by the TSP within the 19.95-acre Project site. The TSP included a commercial land use that has not resulted in market interest over the past 17 years since the land uses were established. However, the market has shown a strong interest in housing more recently, especially in light of a declaration by the State of California that the state faces a housing crisis. The proposed project is a response to the market demand for housing.

The proposed project would include land use changes as reflected in Table Land-1 and Land-2 below.

TABLE LAND-1: GROSS GENERAL PLAN LAND USE SUMMARY – DEVELOPMENT AREA (PER VESTING TENTATIVE MAP)

<i>PROPOSED LAND USE DESIGNATIONS</i>	<i>EXISTING (ACRES)</i>	<i>PROPOSE (ACRES)</i>
Residential	12.66	19.95
Regional Commercial	7.29	-
TOTAL	19.95	19.95

SOURCE: ASSOCIATED ENGINEERING GROUP, INC., 2024

TABLE LAND-2: GROSS TIVOLI LAND USE SUMMARY – DEVELOPMENT AREA (PER VESTING TENTATIVE MAP)

<i>PROPOSED LAND USE DESIGNATIONS</i>	<i>EXISTING (ACRES)</i>	<i>PROPOSE (ACRES)</i>
Very Low Density Residential	2.55	2.55
Medium High Density Residential	4.87	-
Regional Serving Commercial	12.53	-
Medium Density Residential	-	17.4
TOTAL	19.95	19.95

SOURCE: ASSOCIATED ENGINEERING GROUP, INC., 2024

The proposed Project uses would be compatible with surrounding uses and would be a response by the City to the State's declaration of a housing crisis, and the market demand for new housing in the region. The proposed Project would not result in any displacement of people or housing. The proposed Project would not 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. Implementation of the Project would have a ***less than significant*** relative to this topic.

XII. MINERAL RESOURCES

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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	

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on the site's mineral resources will be guided, in part, by the TSP EIR.

Modesto General Plan Master EIR

Chapter V. Environmental Analysis

C. Mineral Resources

Historic mineral production in Stanislaus County has included construction materials, industrial materials, and metallic minerals. However, the only mineral commodities that are mined actively in Stanislaus County are sand and gravel. Modesto is entirely within an area zoned MRZ-3a for sand and gravel. This designation indicates areas containing known mineral occurrences of undetermined significance. No areas classified as Mineral Resource Zones (MRZ-2a or MRZ-2b) under the Surface Mining and Reclamation Act – that is, areas where significant mineral deposits have been determined to exist – occur within the planning area.

TSP Final EIR

The TSP EIR did not analyze mineral resources. An Initial Study and Notice of Preparation for the proposed project were published on July 21, 2005. Based on the Initial Study, the City of Modesto determined that an EIR was required. The Initial Study determined that the effects of the project in the following issue areas would either be insignificant or would be reduced to a less-than-significant level by mitigation measures included in the project and thus required no further analysis: mineral resources, cultural resources, and recreation. Therefore, these issues are not addressed in the EIR.

Responses to Checklist Questions

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? Responses: The California Geological Survey identifies areas that contain or that could contain significant mineral resources to provide context for local agency land use decisions and to protect availability of known mineral resources. Classifications ranging from MRZ-1 to MRZ-4 are based on knowledge of a resource's presence and the quality of the resource.

No mineral extraction operations are known to exist in or adjacent to the Project site. The California Division of Mines and Geology designates the Project site and surrounding lands as MRZ-3a, indicating that the area may contain known mineral occurrences of undetermined significance. Mining and/or mineral extraction in this residential area is not practical given the number of sensitive receptors in the immediate vicinity such as agricultural lands and existing residential uses that may be impacted. There are no oil and gas extraction wells within or near the property. Implementation of the proposed Project would have a ***less than significant*** impact relative to this environmental topic.

XIII. NOISE

	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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 groundborne vibration or groundborne 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

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on noise will be guided by, in part, the Modesto General Plan, the TSP and its associated EIR.

Modesto General Plan

Chapter VII. Environmental Resources, Open Space and Conservation

G. Noise***1. Overview***

California planning law requires every general plan to address local noise issues (Government Code Section 65302(f)). The noise element provides a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise. The policies presented in this section were derived from mitigation measures established in the MEIR, which in turn recognized the guidelines established by the State Office of Noise Control (Department of Health Services). Noise is part of everyday life in an urban community, resulting from either stationary or mobile sources. Stationary sources include noise generators such as the airport, loud music, and industrial and construction activities. Mobile noise sources are typically transportation-related, such as aircraft, trains, automobiles, trucks, buses, motorcycles, and construction vehicles. Construction noise is considered localized and temporary. Sound intensity is measured in "A-weighted" decibels (dBA) that are weighted to correct for the relative frequency response of the human ear. Typical dBA sound levels for various types of noise sources are summarized in Table VII-1 and range from quiet to painfully loud.

2. Noise Sources

Major sources of continuous or occasional noise include the following.

- Roadways, especially arterials and expressways. Roadway noise is generally continuous throughout the day, tapering off in the evening. In the evening, noise from trucks, loud car stereos, emergency vehicles, and poorly muffled engines are especially noticeable. Typical noise ranges from 60 dB to 100 dB.
- Railroads – Union Pacific, Burlington Northern-Santa Fe, and Modesto & Empire Traction Noise and vibrations from freight and passenger rail occurs throughout the day and night, which can be very disruptive. Due to federal regulations, train horns must be sounded at particular volumes and durations. It is possible to establish a ‘quiet zone’ in some circumstances to reduce – but not eliminate – train horn noise. Typical noise can range from 70 dB to 90 dB at a distance of 100 feet.
- Modesto City-County Airport Aircraft noise can occur at most hours of the day or night. Identifiable aircraft noise is negligible at a distance of more than two (2) or three (3) miles from the airport, but can be very significant and disruptive to nearby residences in the vicinity of the runway. CNEL volumes average about 60 dB at the eastern edges of the neighborhoods nearest to the airport. While CNEL averages noise levels, it should be noted that individual noise events, such as engine run ups and takeoffs, can produce considerably higher short-term noise volumes.

TSP EIR

The existing noise environment at and adjacent to the project site generally comprises transportation on adjacent local roadways; agriculture, commercial, and residential land uses; operations related to the Northeast Modesto Police command office; and a few stationary (e.g., commercial rooftop mechanical equipment) sources.

Roadways on the site boundary generate noise from rural or suburban traffic accessing the urban portion of Modesto, or State Highway 99 (SR 99) approximately 6 miles south and west of the site. Sylvan Avenue and Oakdale Road, including their respective intersection at the southwest corner of the project site, are designated as truck routes, but not at locations along the project site border. Boundary roads may have occasionally fast-moving traffic, but they are not heavily traveled at night, causing only moderate daily levels of existing noise. Claratina Avenue does not currently exist north of the project site.

Specific existing noise levels for roadway segments surrounding the project site are not included in the City’s General Plan or the Final Master EIR for the Urban Area General Plan1 (MEIR).

Impact F.1. Increased project-related traffic could cause substantial noise increases for existing sensitive receptors in the project vicinity. (***Less than Significant***).

Impact F.2. Future traffic could cause substantial noise levels for sensitive receptors in the TSP area. (***Less than Significant with Mitigation***).

Mitigation Measure F.2a. Design and implement new barriers for noise control at exterior locations of proposed residential development adjacent to major roadways.

Mitigation Measure F.2b. Provide shielding for outdoor use areas by locating these areas behind buildings adjacent to major roadways.

Impact F.3. New stationary sources of noise associated with the proposed project could generate noise levels incompatible with ordinances or goals for the surroundings. (**Less than Significant with Mitigation**).

Mitigation Measure F.3. *Each development project that involves commercial uses or multi-family residential buildings that would include outdoor mechanical equipment shall carry out the following:*

- *Retain a qualified acoustical engineer to review the development project during the design phase, prior to approval of building permits.*
- *Submit a report to the City by the acoustical engineer that calculates the noise levels at the nearest residential property lines that would result from proposed mechanical equipment, determines whether noise levels would exceed the City's Normally Acceptable standards, and identifies means to reduce exterior noise levels to an Ldn of 60 dB.*
- *Noise reduction measures that must be considered by the acoustical engineer include:*
 - *use of acoustical silencers on inlet and discharge openings of mechanical equipment,*
 - *installation of parapets or enclosures with louvers or other barriers to shield noise,*
 - *orientation of equipment so that it faces away from sensitive receptors,*
 - *orientation or setback of buildings to increase distance from sensitive receptors.*
- *Other noise reduction measures that would accomplish the same or similar purposes should be included if applicable to the particular building proposed.*

Impact F.4. Non-stationary sources of noise associated with the proposed project could generate noise levels incompatible with ordinance or goals for the surroundings. (**Less than Significant with Mitigation**).

Mitigation Measure F.4. *A qualified acoustical engineer shall be retained to review the site plans and building designs for proposed commercial activities when located adjacent to sensitive residential or educational land uses. The acoustical engineer shall consider the following measures, and shall identify a complete list of measures that will reduce noise levels at the nearest residential property line to an Ldn of 60 dB:*

- *Limiting loading and exterior warehouse activities to daytime hours from 8:00 a.m. to 7:00 p.m.*
- *Requiring loading and trash compacting and collection activities to be fully enclosed.*
- *Establishing minimum setback distances from rear yards for single family residences and from common open space for multi-family residential buildings for locations of commercial loading docks, warehousing activity areas, and trash compaction and collection areas in commercial developments.*

Cumulative Impacts

Impact F.5. Cumulative development could lead to noise conflicts between incompatible land uses. **(Exterior Noise: Significant and Unavoidable, Interior Noise: Significant and Unavoidable)**

Responses to Checklist Questions

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? Response: The existing ambient noise environment at the project site is defined primarily by traffic on Oakdale Road, and to a lesser extent by periodic agricultural activity. To quantify the existing ambient noise environment at the project site, Bollard Acoustical Consultants (BAC) conducted long-term (72-hour) noise level measurements at two locations on the project site between September 7-9, 2024. The noise survey locations are shown on Figure 1 of the Noise Report (See Appendix C), identified as sites LT-1 and LT-2. Photographs from the noise survey effort are provided in Appendix B of the Noise Report (See Appendix C).

Larson-Davis Laboratories (LDL) precision integrating sound level meters were used to complete the noise level measurement survey. The meters were calibrated immediately before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The ambient noise level survey results are summarized in Table Noise-1. The detailed results of the ambient noise survey are contained in Appendix C in tabular format and are provided graphically in Appendix D of the Noise Report (See Appendix C).

TABLE NOISE-1. SUMMARY OF LONG-TERM NOISE SURVEY MEASUREMENTS RESULTS – JULY 26-27, 2022¹

			Average Measured Hourly Noise Levels (dB)			
			Daytime ³		Nighttime ⁴	
Site Description ²	Date	DNL (dB)	Leq	Lmax	Leq	Lmax
LT-1: Approximately 90 feet east of the effective existing Oakdale Road Centerline	9/7/2024	67	63	82	59	77
	9/8/2024	66	63	81	59	76
	9/9/2024	67	64	83	60	80
	Average	67	63	82	60	78
LT-2: Northern site boundary, approximately approx. 330' south of Mable Avenue.	9/7/2024	52	48	63	45	59
	9/8/2024	52	46	61	46	60
	9/9/2024	53	48	64	46	59
	Average	52	47	63	46	59
¹ Detailed summaries of the noise monitoring results are provided in Appendices C and D. ² Long-term noise survey locations are shown on Figure 1. ³ Daytime hours: 7:00a.m. to 10:00p.m. ⁴ Nighttime hours: 10:00p.m. to 7:00a.m.						

SOURCE: BOLLARD ACOUSTICAL CONSULTANTS, INC. 2024.

Measurement site LT-1 was specifically selected to capture noise levels associated with traffic on Oakdale Road. Measurement site LT-2 was selected to be representative of the existing ambient noise environment at the nearby existing residences to the north.

As indicated in Table Noise-1, measured day-night average noise levels at site LT-1, located adjacent to Oakdale Road, exceeded the City of Modesto General Plan exterior noise level standard of 65 dBA DNL applicable to single-family residential uses affected by transportation noise sources. The Table Noise-1 data also indicate that average measured hourly average and maximum noise levels at site LT-2 were satisfactory relative to the Modesto noise level standards for non-transportation noise sources affecting noise-sensitive uses at the existing residences to the north.

Traffic Noise at Existing Residences: Assuming a trip generation rate of 10 daily trips per residence, with 185 single-family residences, the proposed Project would be expected to generate approximately 1,850 daily trips on the local roadway network. Using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108), the DNL generated by project traffic was computed to be approximately 57 dBA DNL at 90 feet from the centerline of Oakdale Road. Appendix E contains the FHWA Model inputs and results.

The 90-foot distance was utilized for the modelling of Oakdale Road traffic noise because 90 feet represents the distance from the existing roadway centerline to ambient noise survey location LT-1. As indicated above in Table 2, the measured DNL at Site LT-1 was 67 dBA DNL. Because existing traffic noise exposure was measured to be approximately 10 dBA *above* traffic noise levels which would be generated by the proposed Project, the increase in traffic noise exposure resulting from the proposed Project at existing residences located along Oakdale Road would be less than 1 dBA DNL. Because a change in noise levels of 3 dBA is generally considered to be the threshold of perception, the project-related increase of less than 1 dBA is expected to be imperceptible. As a result, this impact is ***less than significant***.

Construction Noise at Existing Residences: During Project construction, heavy equipment would be used for grading, excavation, paving, and building construction. These activities would increase ambient noise levels in the immediate Project vicinity. Construction noise levels generated at the Project site would vary depending on equipment types and amount of equipment in use at any time, the location where that equipment is operating, and how well the equipment is maintained. Noise exposure at existing, off-site, sensitive receptors would also vary depending on the proximity of equipment activities to the receptor, the degree of shielding present between the construction equipment and receptor (i.e., soundwalls), etc. Table 3 in the Noise Study (See Appendix C) provides the range of maximum noise levels for equipment commonly used in general construction Projects at full-power operation at 50 feet. Not all these construction activities would be required of this Project.

The nearest sensitive receptors (existing residences) are located approximately 100 feet to the north and approximately 150 feet to the west of the Project site where construction activities would occur. Based on the equipment noise levels in Table 3 in the Noise Study (See Appendix C), maximum construction equipment noise levels are predicted to range from approximately 75-80 dBA Lmax at the nearest existing residences to the Project site.

As indicated in Table 2, existing maximum daytime noise exposure was measured to be approximately 82 dBA at receptors adjacent to Oakdale Road and 63 dBA at residences to the north of the project site. As a result, substantial increases in maximum ambient noise levels are not expected at existing residences located on the west side of Oakdale Road but short-term increases in maximum noise exposure at the existing residences to the north could be substantial. As a result, this impact is considered potentially significant and requires mitigation. Implementation of the following mitigation would reduce the impact to a ***less than significant*** level.

New Mitigation Measure(s)

Mitigation Measure NOI-1: *The following measures shall be incorporated into the Project on-site construction operations:*

- *Noise-generating construction activities within the Project area shall adhere to the time restrictions of the City of Modesto General Plan to the maximum extent feasible.*
- *All noise-producing Project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.*
- *All mobile or fixed noise-producing equipment used on the Project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of Project activity.*
- *Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from the existing residences to the north.*
- *Project area and site access road speed limits shall be established and enforced during the construction period.*
- *In the event that unusual circumstances or emergencies prevent certain Project construction activities from complying with the Modesto requirements, then a noise control plan shall be developed to ensure that sufficient mitigation is implemented during Project construction to ensure adverse noise impacts are avoided.*
- *Notification of construction hours and durations shall be provided to the existing residences to the north of the project site.*

Future Oakdale Road Traffic Noise Exposure at Proposed Residences: To predict future Oakdale Road traffic noise exposure at the project site, BAC utilized the long-term ambient data from site LT-1 collected between September 7-9, 2024, and adjusted that data to reflect future traffic conditions and distances from the future roadway centerline to the nearest residential backyards and building facades within the project site. Future traffic volumes on the Oakdale Road were assumed to double in the future, representing a 100% increase over time. This increase results in a 3 dBA DNL future increase in traffic noise levels relative to existing noise levels. Future Oakdale Road traffic noise levels were projected to the nearest proposed outdoor activity areas (i.e., backyards) and building facades to the roadway based on a 4.5 dBA decrease per doubling of distance from the roadway centerline. The results of the traffic noise projections analysis are provided in Table Noise-2.

TABLE NOISE-2. PREDICTED FUTURE EXTERIOR TRAFFIC NOISE LEVELS AT THE PROJECT SITE¹

Roadway	Location	Offset ²	Predicted Noise Level, DNL (dBA)
Oakdale Road	Nearest backyards		70
	Nearest first-floor facades		70
	Nearest upper-floor facades	2	72
<p>1 Predicted future Oakdale Road traffic noise levels include an adjustment of +3 dBA to account for a 100% increase in future traffic volumes on Oakdale Road.</p> <p>2 An offset of +2 dBA was applied at upper-floor facades due to reduced ground absorption at elevated positions.</p>			

SOURCE: BOLLARD ACOUSTICAL CONSULTANTS, INC. 2024.

As indicated in Table Noise-2, future Oakdale Road traffic noise levels at the outdoor activity areas (i.e., backyards) proposed nearest to the roadway are predicted to exceed the City of Modesto General Plan's normally acceptable exterior noise level standard of 65 dBA DNL. As a result, noise impacts of future Oakdale Road traffic noise exposure on proposed backyards of this development are considered significant.

Table Noise-2 also indicates that Future Oakdale Road traffic noise exposure at first and second-floor facades of residences proposed adjacent to that roadway are predicted to be 70 and 72 dBA DNL, respectively. Standard residential construction (stucco siding, STC-27 windows, door weather stripping, exterior wall insulation, composition plywood roof), typically results in an exterior to interior noise reduction of approximately 25 dBA with windows closed and approximately 15 dBA with windows open. Therefore, provided future traffic noise levels do not exceed 70 dBA DNL at exterior building facades, standard construction practices should be adequate to ensure compliance with the City of Modesto General Plan 45 dBA DNL noise level standard within residences of the development.

Because first-floor building façade noise exposure is not predicted to exceed 70 dBA DNL, standard construction practices would be adequate to achieve compliance with the City's interior noise standard within first floor rooms. However, because 2nd floor facade noise exposure is predicted to exceed 70 dBA DNL, future traffic noise exposure within the second-floor rooms of residences constructed adjacent to Oakdale Road could exceed the City of Modesto 45 dBA DNL interior noise standard. As a result, noise impacts of future Oakdale Road traffic noise exposure within 2nd floor rooms proposed adjacent to Oakdale Road are considered potentially significant and requires mitigation. Implementation of the following mitigation would reduce the impact to a ***less than significant*** level.

New Mitigation Measure(s)

Mitigation Measure NOI-2: *The following measures shall be incorporated into the design:*

- *A solid noise barrier measuring 7 feet in height relative to backyard elevation should be constructed adjacent to the residences abutting Oakdale Road. The noise barrier locations are shown on Figure 2.*
- *The traffic noise barrier could take the form of masonry wall, earthen berm, or a combination of the two. Other materials may be acceptable but should be reviewed by an acoustical consultant prior to use.*
- *All north, west, and south-facing second-floor windows of residences proposed adjacent to Oakdale Road shall have a minimum Sound Transmission Class (STC) rating of 32. Figure 2 shows the residences where this mitigation measure would apply.*
- *Air conditioning shall be provided for all residences of this development to allow occupants to close doors and windows as desired for acoustic isolation.*

Noise Generated by Future Commercial to the South: Future commercial development is reportedly anticipated on the parcel to the immediate south of the Martin Residential development site. Although design of the commercial site was not available at the time the noise analysis was prepared, typical activities associated with commercial developments include truck deliveries, parking lot activity, restaurant drive-through lanes, mechanical equipment etc. Because the specific distances to the various noise sources cannot be determined prior to completion of the development plans for the commercial site, the City will examine the application of noise

mitigation measures to the development of the Martin residential development, as a whole. In addition, the City will review any future plans for commercial development on the parcel(s) adjacent to the Martin Project site to determine if additional mitigation measures would be required for the commercial development. Because noise generated by future commercial activities to the south of the project site could exceed the City's noise standards at the Martin Project site, this impact is considered potentially significant and requires mitigation. Implementation of the following mitigation would reduce the impact to a ***less than significant*** level.

New Mitigation Measure(s)

Mitigation Measure NOI-3: *The following shall be incorporated into the design:*

- *All west, south and east-facing second-floor windows of residences proposed adjacent to the southern site boundary where commercial development would occur in the future (plus 2 lots to the east), shall have a minimum Sound Transmission Class (STC) rating of 32. Figure 2 shows the residences where this mitigation measure would apply.*

b) Generation of excessive groundborne vibration or groundborne noise levels? Response: Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. The TSP EIR concluded that vibration impacts would not be significant. Given that the Project site is within the TSP planning area. There is nothing proposed that would change that conclusion with the modified project. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. This is a ***less than significant*** impact and no mitigation is required.

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? Response: There are no airports within two miles of the Project vicinity. Therefore, this impact is not applicable to the proposed Project. There is ***no impact*** relative to this topic.

XIV. POPULATION AND HOUSING

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on Modesto's population will be guided, in part, by the Modesto General Plan and the TSP and its associated EIR.

Modesto General Plan

Chapter II: Community Growth Strategy and Economic Development

B. Growth Policies

Goal II.A. Urban Area Growth Review. A review of the growth trends in the Modesto Urban Area should be held on a periodic basis to identify urban areas that need upgraded infrastructure or an extension of new infrastructure during the subsequent five (5) years. Focus this review on the following policies:

Policy II.A.1. Land Supply. Maintain a five-year supply of available developable land served with urban infrastructure. Consider both underdeveloped urban and non-urbanized land.

Policy II.A.2. Contiguous Development Tied to Other Goals. Keep urban development as contiguous as possible in order to minimize urbanization of valuable farmland, foster resident convenience, improve air quality, reduce automobile vehicle miles traveled, improve public health and safety, and provide for economy in City services.

Policy II.A.3. Development Follows Annexation. Annex residential growth and development within the Modesto Urban Area General Plan boundary before development occurs.

Policy II.A.4. Direct Growth Inward. Direct urban growth to areas currently served with City services.

Goal II.B. Development Priorities and Financing. Establish priority areas for new development and identify reasonable and certain financing for capital projects consistent with applicable City policies and standard operating procedures.

Policy II.B.1. Priority Development Areas. Support new development with infrastructure developed in accordance with the established Capital Improvement Program priority areas of Downtown, Kiernan Business Park, the TSP area and the South Modesto Industrial Park (north of Whitmore Ave. between Crows Landing Rd. and Morgan Rd.).

Policy II.B.2. Regional Financing. Develop broad-based regional financing options, such as state and federal loans and grants, Joint Powers Agreements and/or inter-agency partnerships for regional-serving capital projects.

Policy II.B.3. Funding Capital Improvements. Increase and improve capital projects over time through maintaining or enhancing existing funding sources, maximizing joint-use efficiencies, and strategically prioritizing capital investments.

TSP EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

N. Population and Housing

Impact N.1. Development of the proposed project would directly induce population growth that could cause the City to exceed its population projections. (***Significant and Unavoidable***).

Impact N.2. Development of the proposed project would increase the number of jobs located within the City which could affect the demand for housing. (***Less than Significant***).

Impact N.3. Development of the proposed TSP could contribute to substantial growth in undeveloped areas and require extension of major infrastructure. (***Less than Significant***).

Responses to Checklist Questions

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)? **Response:** Development of the site would extend the urbanized area incrementally northward and eastward as originally anticipated in the General Plan and TSP. The TSP concluded that the TSP would induce population growth and the impact would be a significant and unavoidable impact. Consistent with the conclusions from the TSP EIR, the population growth would remain a significant and unavoidable impact of the project. The City has adopted a statement of overriding considerations for the population growth.

The proposed Project would generate 185 medium density residential units that were not anticipated in the TSP, which would generate an estimated 521 new residents, or a population increase of approximately 0.2%. The additional housing, and corresponding population increase, is not an inducement of growth, but rather a response to housing need at the time that the state legislature has declared a housing shortage and crisis in the State. The approximately 521 people may come from Modesto or surrounding communities. The proposed Project would not include upsizing of offsite infrastructure or roadways. The installation of new infrastructure would be limited to the internal Project site. The sizing of the infrastructure would be specific to the number of residential units within the Project site. Implementation of the proposed Project would not induce substantial population growth in an area, either directly or indirectly. Implementation of the proposed Project would have a ***less than significant*** impact relative to this topic.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? **Response:** The Project site currently contains undeveloped agricultural land (orchards). The proposed Project would not displace housing or people. Implementation of the proposed Project would have ***no impact*** relative to this topic.

XV. PUBLIC SERVICES

	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?				X

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts on public services from the Project will be guided, in part, by the TSP EIR.

Modesto General Plan

Chapter VI: Community Facilities and Services

D. Open Space and Parks

3. Open Space and Parks Policies – Planned Urbanizing Area

Policy VI.H.8. The policies and standards for the development of the park system within the Planned Urbanizing Area differ in several respects from those in the Baseline Development Area. These policies and standards will be implemented through each Specific Plan, in conjunction with the relevant Comprehensive Planning District policies presented in Chapter III.

Policy VI.H.9. The acreage standards related to Neighborhood and Community Parks are considered minimums. Park acreage may be increased beyond the minimum standard acreage at the option of a developer with additional contiguous, clean, and usable park land, as long as the additional land is fully dedicated and design and construction are fully funded at no additional cost to the City or associated park development fee program. These acreage standards may be enhanced by additional open space to meet unique characteristics of the Specific Plans for each new Comprehensive Planning District.

Policy VI.H.10. Where dual-use park/basin facilities exist, only acreage owned or otherwise controlled exclusively by the City in perpetuity will count toward minimum park acreage standards. Park acreage credit for dual-use facilities shall be calculated in accordance with the standards and criteria contained in the City of Modesto *Design Standards for Dual Use Flood Control/Recreation Facilities* manual. In contrast to the Baseline Developed area, School District open space does NOT count towards minimum park acreage requirements within the Planned Urbanizing Area.

Policy VI.H.11. Design and construct dual-use facilities in accordance with the standards and criteria contained in the *Design Standards for Dual use Flood Control/Recreation Facilities* manual.

Policy VI.H.12. Provide at least one neighborhood park within each residential neighborhood. The neighborhood park should be centrally located within the neighborhood and have a service radius of one-half to three-quarters of a mile. The neighborhood park should have one collector street frontage, and the remaining sides should front on residential streets. The minimum size for a neighborhood park shall be seven acres or the total acreage based on one acre of park land per one thousand population within the neighborhood, whichever is greater.

Policy VI.H.13. The Community Park Service Area is that area within a radius of approximately one to one-and one-half miles of the community park site. The community park should have one major street frontage and the remaining sides may front on residential streets. Community parks should not back up to residential lots. The minimum size for a community park should be forty acres or the total acres based on two acres of the community park land per one thousand population within the Community Park Service Area.

Chapter VI. Community Facilities and Services

E. Public Schools.

Goal VI.I.1. The City of Modesto should partner with local school districts in order to ensure that existing and proposed schools' location, design, function and operations are consistent to the extent practical with the City's stated policies, below.

3. Public Schools Policies – Planned Urbanizing Area

Policy VI.I.3. Directly involve School Districts in the lead time for planning of infrastructure.

Policy VI.I.4. Public schools should be central to neighborhoods. Schools, placed conveniently to the residents to be served, will maximize opportunities for students to walk and bike to school. Opportunities should be explored for joint school/park development when planning new schools. The option for joint acquisition and development of school and park sites should be considered.

Policy VI.I.5. Land for new school facilities should generally meet the following minimum requirements:

- a) Elementary Schools – 10 acres (gross)
- b) Middle schools or junior high schools – 20 acres (gross)
- c) High schools – 50 acres (gross)

Policy VI.I.6. All of the policies for "Public Schools – Baseline Developed Area" apply equally in the Planned Urbanizing Area.

F. Police

Goal VI.J. A primary goal of the City of Modesto Police Department is to maintain a sense of personal safety and security. Containing the level of crime at or below levels of other comparable cities will be accomplished through highly visible patrol services; effective investigations; urban planning and design strategies that help deter crime, such as Crime Prevention Through

Environmental Design (CPTED); and, an active education and crime prevention program. CPTED is the process of improving the design and use of the built environment in order to lead to a reduction in the fear and incidence of crime.

2. Police Policies – Baseline Developed Area and Planned Urbanizing Area.

The following policies apply in the Baseline Developed Area and, where relevant, in the Planned Urbanizing Area. In general, however, the Modesto Police Department is only authorized to provide services within its primary jurisdiction – the incorporated Modesto City limits.

Policy VI.J.1. Maintain an adequate personnel level to organize patrol areas, and provide investigative responses, to achieve a comfortable and safe community climate conducive to a high quality of life. To the maximum economic extent feasible, police operations should include proactive law enforcement and administrative efforts, all to be expanded as the City's population grows.

Policy VI.J.2. Strive to reduce the level of crime below levels of other progressive departments with comparable populations and demographics.

Policy VI.J.3. Strive to provide sworn officers in sufficient numbers to support basic police services consistent with other progressive departments with comparable populations and demographic statistics. The recommended long-term police staffing goal is a ratio of 1.85 sworn officers per one thousand residents.

Policy VI.J.4. Strive to provide civilian staff in sufficient numbers to support sworn staff and to support continuing civilianization of services such as Crime Prevention, Investigative Support, Crime Scene Investigation, Accident Reports, and other documentation of incidents and other forms of clerical support.

Policy VI.J.5. Maintain efforts to educate the public about crime deterrence through programs like the Neighborhood Watch Program within residential neighborhoods, Traffic Watch Program on residential streets, and the Business Watch Program within non-residential areas.

Policy VI.J.6. Review proposed projects in order to evaluate security features, encourage Crime Prevention Through Environmental Design (CPTED), and evaluate traffic flow with respect to speed and collision mitigation. Ensure that the following CPTED principles, as modified by periodic amendments thereto, are incorporated in specific sites and situations, including new development.

- a) Territoriality is a design concept that clearly delineates private space from semi-public and public spaces and also creates a sense of ownership. Ownership thereby creates an environment where appearances of such strangers and intruders stand out and are more easily identified through:
 - The enhanced feeling of legitimate ownership by reinforcing existing natural surveillance and natural access control strategies with additional symbolic or social ones;
 - The design of space to allow for its continued use and intended purpose; and,
 - The use of pavement treatments, landscaping, art, signage, screening and fences define and outline ownership of space.

- b) Natural surveillance is a design concept directed primarily at keeping intruders under observation. Provision of natural surveillance helps to create environments where there is sufficient opportunity for people engaged in their normal behavior to observe the space around them. Areas can be designed so they are more easily observed through:
- Design and placement of physical features to maximize visibility. This may include: building orientation, windows, entrances and exits, parking lots, refuse containers, walkways, guard gates, landscaping, use of wrought iron fences or walls, signage and other physical obstructions;
 - Placement of activity areas to maximize surveillance possibilities; and,
 - Minimum maintained lighting standards that provide for nighttime illumination of parking lots, walkways, entrances, exits, and related areas to promote a safe environment.
- c) Access control is a design concept directed at decreasing criminal accessibility. Provision of natural access control limits access and increases natural surveillance to restrict criminal intrusion, especially into areas where they will not be easily observed. Intruders are more readily recognized through:
- The use of sidewalks, pavement, gates, lighting and landscaping to clearly guide the public to and from entrances and exits; and,
 - The use of gates, fences, walls, landscaping and lighting to prevent or discourage public access to or from dark or unmonitored areas.
- d) Activity support is the presence of activity planned for the space, and involves placing activity where the individuals engaged in an activity will become part of the natural surveillance system. Examples include:
- Place safe activities in areas that will discourage would-be offenders, to increase the natural surveillance of these activities and the perception of safety for normal users, and the perception of risk for offenders;
 - Place high-risk activities in safer locations to overcome the vulnerability of these activities by using natural surveillance and access control;
 - Place high-risk activities in safer locations to overcome the vulnerability of these activities by using natural surveillance and access control;
 - Locate gathering areas in locations that provide for natural surveillance and access control or in locations away from the view of would-be offenders; and,
 - Improve the scheduling of space to allow for effective use and appropriate intensity of accepted behaviors.
- e) Proper maintenance of landscaping, lighting treatment, and other features can facilitate the principles of CPTED. Functions include:
- Proper maintenance of lighting fixtures to prescribed standards;
 - Landscaping that is maintained at prescribed standards; and,
 - Minimizing the conflicts between surveillance and landscaping as groundcover, shrubs and trees mature.

Goal VI.K. Provide responsive fire and life safety protection to the community through control of hostile fire, fire prevention, emergency medical services, emergency preparedness, and mitigation of hazardous materials.

Policy VIV.K.1. Maintain adequate fire flows in relation to structures size, design, and requirements for construction and/or built-in fire protection systems in accordance with the California Fire Code and adopted local ordinances. Determination of adequate fire flows includes factors such as storage capacity, system gridding, hydrant spacing, and sizing of water mains.

Policy VIV.K.2. Ensure adequate ingress and egress to all structures for fire fighting and rescue purposes independent of privately-owned and maintained driveways. Provide protection of life and property through the use of engineered fire protection systems, including roof systems.

Policy VIV.K.3. Practice timely adoption of the current edition of the California Fire Code including local ordinances designed to address local conditions. The California Fire Code may be amended to suit local conditions.

Policy VIV.K.4. Ensure that fire stations, apparatus, equipment, and personnel are in place concurrent with construction in the Planned Urbanizing Area.

Policy VIV.K.5. Future fire station sites and facilities should be closely coordinated with existing and planned public parks, libraries, and other activity centers in order to encourage maximum efficiency of public facilities.

Policy VIV.K.6. Promote fire-safe behaviors within the community through public fire education activities and programs.

Policy VIV.K.7. Maintain readiness to mitigate man-made or natural disasters through maintenance and implementation of the Multi-Hazard Functional Plan, the Multi-Hazard Mitigation Plan, and the Emergency Operations Plan.

Policy VIV.K.8. Maintain equipment, staffing, and facilities to provide Emergency Medical Services, Fire Prevention and Suppression, Urban Search and Rescue, and Hazardous Materials Response Capabilities.

Policy VIV.K.9. Provide an adequate Fire and Life Safety Delivery system through the achievement of the following standards:

- a) Maintain an emergency response system capable of achieving the following standards in 90 percent of all cases.
 - The first fire emergency response unit arrives within six minutes of dispatch;
 - A full fire alarm assignment consisting of four engines, one truck, one chief officer, and a minimum of 16 personnel arrives within 10 minutes of dispatch; and,
 - A second alarm assignment consisting of two engines and one truck with a minimum of nine personnel arrives within 15 minutes of dispatch.

Policy VIV.K.10. Protect life and property by requiring engineered fire protection systems and fire resistive roof systems as part of all new construction; in situations where access is limited, fire sprinklers shall be required for new construction.

Policy VIV.K.11. Provide an effective prevention program aimed at fire loss reduction through inspection, investigation, and public education.

Policy VIV.K.12. Coordinate with affected fire protection districts when an annexation to the City is proposed, and before it has been finalized, regarding fire protection and other emergency services.

Policy VIV.K.13. Negotiate with affected fire protection districts when an annexation to the City is contemplated and before it has been effected to determine whether the boundary change may result in the erosion of fire protection or other emergency services. Any resulting agreements must be approved by City Council and the governing board of the fire protection district prior to City Council approval of the annexation. Options range from the consolidation of the fire protection district into Modesto City Fire to revenue sharing.

TSP

Chapter VI. Community Services

6.1.2. Fire

Fire Station #7, located at 1800 Marble Avenue, is the nearest fire station to the TSP project area and can provide response within six minutes. Station #5, located at 200 Briggsmore Avenue about 3.5 miles to the south and west, provides the secondary response within 10 minutes for all but the northeast portion of the TSP project area. The residential and commercial project components of the TSP would create increased demand for fire services. The TSP would have a physical impact on these public services by requiring additional facilities to serve the northeast portion of the TSP project area.

TSP EIR

Chapter IV. Environmental Setting, Impacts and Mitigation

K. Community Services

Police Service Impacts and Mitigation

Impact K.1. Development of the proposed project site would result in an increased demand for Modesto Police Department officer hours due to the potential for increased on-site criminal activity and increased number of traffic incidents near the site. (***Less than Significant***).

Fire Service Impacts and Mitigation

Impact K.2. Development of the proposed project site would result in an increase in emergency response call volumes which require an emergency response unit to arrive within six minutes. (***Less than Significant***).

Impact K.3. Development of the proposed project site would result in an increase in full alarm call volumes which require an effective response force to arrive within ten minutes. (***Less than Significant with Mitigation***).

Relevant TSP Mitigation Measure

Mitigation Measure K.3. Prior to the development of the northeast area of the TSP, project developers must provide the necessary funding for the construction of a Modesto Fire Department Fire Station to house an engine company and a truck company.

Impact K.4. Development of the commercial and high-density residential components of the proposed project with building heights over 30 feet could result in insufficient water pressure for firefighting. (***Less than Significant***).

Responses to Checklist Questions

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Response:

Fire Protection

The proposed Project would generate residences within the Project site. The proposed Project would result in the construction of 185 medium density residential units. Given Modesto's average household size of 2.82, the Project will produce approximately 521 new residents. As of 2020, Modesto's population was approximately 218,464. The Project would create a population increase of approximately 0.2% which will place additional demand on the Modesto Fire Department.

Continued growth within the city will increase the overall demand on fire protection services in the city. Growth in accordance with buildout of the existing General Plan is expected to generate the typical range of service calls, including structure fires, car fires, electrical fires, emergency medical response and others. Any new facilities would require environmental review once a location and design of such facility is developed. The City's costs to maintain equipment and facilities and to train and equip personnel will also increase. Growth in rural areas and fire districts will also increase the demand for fire protection services in those areas.

Development of the proposed Project, would increase demand for fire protection services. The TSP EIR included a requirement for a new fire station prior to development in the northeastern part of the TSP because that area could not be served within response times. TSP EIR Mitigation Measure K.3 requires prior to development of the northeast area of the Tivoli Specific Plan, project developers must provide the necessary funding for the construction of a Modesto Fire Department Fire Station to house an engine company and a truck company. The *Modesto Urban Area General Plan* policies, specifically Policy III-D.1.d, calls for the development of a long-range financing strategy for each Comprehensive Plan Area, would allow the City to allocate the necessary funds to extend fire service into the Roselle/Claribel Comprehensive Planning District including the Tivoli Specific Plan project area. Projects developed in the Tivoli Specific Plan project area and within the Roselle/Claribel Comprehensive Planning District pay all required development fees and taxes established by City-wide Capital Facilities Fee Program or other similar funding programs such as a Community Facilities District program as set out in the Tivoli Specific Plan Infrastructure Financing Plan. Fulfillment of these payments would result in the contribution of the project's fair share of a new fire station (Fire Station No. 12). The proposed Project will be responsible for paying their fair share for the new fire station through payment of the established

fee programs. The Project site is not located in the northeast portion of the TSP, and is not within the northeast area. The Project site is adequately served by Fire Station No. 7, 9, and 5. Upon completion of proposed Fire Station No. 12, the Project site, would be in the primary service area of this station, and the secondary service area of Fire Station No. 7. Proposed Fire Station No. 12 would be less than a mile from the eastern edge of the proposed project site and would be equipped with 2 engine companies, 1 truck company, a battalion chief, and 13 personnel. Emergency response times from Fire Station No. 12 would be less than six minutes, and Fire Stations No. 7 and No. 12 would have sufficient personnel and apparatus to field an effective response force on scene at all locations within the proposed project site, including the northeastern portion. Given that the Project site is within the approved TSP planning area, will pay its prorated fair share fees for fire service, and can adequately be served by existing Fire Stations, the proposed Project would have a ***less than significant impact*** on the fire services.

Police Protection

In 2004, approximately 210,000 Modesto residents received Modesto Police Department (MPD) law enforcement services, up from 187,000 in 1999-2000. The MPD has a total of 367 officers. Currently, there are 262 sworn officers, assigned to various units and divisions, and the MPD has authorization for 275 sworn officer positions. There are an additional 105 non-sworn officers, though it has authorization for 108; 38 of these officers are authorized Community Service officers. The MPD is funded by the City General Fund through a yearly budget process.

The MPD operates from two main facilities: the Gerald L. McKinsey Modesto Police Complex at 600 10th Street and the Police Operations Building at 601 11th Street. The MPD currently serves the 36.2-square-mile area of the incorporated City of Modesto. In addition, four command areas operate from local facilities. These local facilities are strategically located throughout the City to improve the quality of community life and to improve citizen-police relations by effectively communicating a police presence.

The MPD responds to emergency calls related to crimes in progress, threats to public safety, traffic accidents and other urgent requests. The response rate is determined by the number of full-time police personnel per 1,000 citizens and varies by type of incoming call. The current officer to population ratio is 1.25 officers per 1,000 residents. Calls reporting crimes in progress (Priority 1P) receive the highest priority and the quickest response. Most other calls report crimes that have just occurred and/or situations where a police unit is needed as soon as possible. At the current ratio of 1.25 full-time police personnel per 1,000 citizens, the department can answer Priority 1P calls within 4.42 minutes and all other calls within approximately 33 minutes.

The proposed Project would generate residences within the Project site. The proposed Project would result in the construction of 185 medium density residential units. Given Modesto's average household size of 2.82, the Project will produce approximately 521 new residents. As of 2020, Modesto's population was approximately 218,464. The Project would create a population increase of approximately 0.2% which will place additional demand on the Modesto Police Department.

Based on the current ratio of 1.25 full-time police personnel per 1,000 citizens, the proposed project would create a demand for 0.65 new full-time police personnel. Development of the Project site, as proposed, would not result in significant growth beyond that identified and planned for in the City's General Plan. Although demand for services may increase slightly, the proposed Project would not directly increase demand for police services to the extent that new or physically altered

police department facilities would be needed to maintain acceptable service ratios, response times, or other performance objectives.

As the proposed Project would not directly require the need for new or physically altered police facilities, nor cause any additional strain on existing capacity beyond what is approved in the TSP EIR, to maintain acceptable service ratios, response times or other performance objective which may cause substantial adverse physical environmental impacts, implementation of the proposed Project would have a ***less than significant*** relative to this topic.

Schools

Residents within the TSP planning area, including the Project site would be served by Sylvan Union School District for elementary and middle school levels, and Modesto City High School District for high school levels. The nearest elementary school to the Project site is the Stockard Coffee School. The nearest middle school is Ustach Middle School, and the nearest high school is James Enochs High School.

The proposed Project would generate residences within the Project site. The proposed Project would result in the construction of 185 medium density residential units. The Sylvan Union School District new student generation rates per household are 0.3 for K-5th grade students, and 0.2 for 6th-8th students. The Modesto City High School District new student generation rate per household is 0.2 for 9th-12th grade students. The total new students projected to be generated from the proposed Project is shown in Table Pub -1. The project applicant will be required to pay the school impact fees to fund school facilities for the new students. Implementation of the proposed Project would have a ***less than significant*** impact.

TABLE PUB -1: NEW STUDENT GENERATION

Grade	New Student Generation Rate	Students Generated
Sylvan Union School District		
K-5th	0.3	56
6th-8th	0.2	37
Modesto City High School District		
9th-12th	0.2	37
Total		130

Source: Sylvan Union Level 1 Developer Fee Justification Study, June 2022.

Parks

CEQA requires that the proposed Project is analyzed to determine whether any substantial adverse impacts would be associated with any new or physically altered governmental facilities that may be required to serve the proposed Project (in this case, for park and recreation facilities). The proposed Project directly increases the number of persons in the area. The proposed Project would result in the construction of 185 medium density residential units. Given Modesto's average household size of 2.82, the Project will produce approximately 521 new residents. The City's Park standard requires one acre of neighborhood park per 1,000 people, which would equate to 0.521 acres of neighborhood park. The Project site is in Park Planning Area 62 (Mable), which has a planned park located in the central part of the Tivoli Specific Plan area. The proposed Project includes a 1.98-acre open space/basin. The exact improvement design of the open space/basin will need to meet the requirements of General Plan Policy VI-H-11 to receive any park credit.

The proposed General Plan amendment and rezone of a portion of the TSP planning area does not change any planned parks within the TSP planning area or Park Planning Area 62. The proposed Project does not create or modify any parkland or open space other than what is described above as an open space/basin. The Project would have a ***less than significant*** impact on local parkland.

Other Public Facilities

The proposed Project would not result in a need for other public facilities that are not addressed above. Implementation of the proposed Project would have ***no impact*** relative to this issue.

XVI. RECREATION

	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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?				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

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts regarding recreation and recreational facilities will be guided, in part, by the TSP EIR.

TSP EIR

The TSP EIR did not analyze recreation. An Initial Study and Notice of Preparation for the proposed project were published on July 21, 2005. Based on the Initial Study, the City of Modesto determined that an EIR was required. The Initial Study determined that the effects of the project in the following issue areas would either be insignificant or would be reduced to a less-than-significant level by mitigation measures included in the project and thus required no further analysis: mineral resources, cultural resources, and recreation. Therefore, these issues are not addressed in the EIR.

Responses to Checklist Questions

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? Responses: The proposed Project would result in the construction of 185 medium density residential units. Given Modesto's average household size of 2.82, the Project will produce approximately 521 new residents. As of 2020, Modesto's population was approximately 218,464. The Project would only create a population increase of approximately 0.2%, which does not constitute a significant population increase relative to existing parks and recreational facilities. The project will comply with the park standards, and Quimby Act requirements. This is discussed in more detail in the previous section. Therefore, the Project's impact on Modesto's parks and recreational facilities would be *less than significant*.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? Responses: The proposed Project does not include the construction of recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Implementation of the proposed Project would have a *less than significant* impact relative to this topic.

XVII. TRANSPORTATION

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			X	
b) Would the project 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	

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts regarding transportation from the Project will be guided, in part, by the TSP EIR.

Modesto General Plan

Chapter V. Transportation

A. Citywide Transportation Goals

Goal V.A. Provide meaningful transportation choices, increase non-automobile mode share and facilitate complete streets. Provide transportation choices that are safe, reliable, effective, and economical for all users to decrease household transportation costs, improve air quality, reduce greenhouse gas emissions, and promote public health. The transportation system will be robustly multi-modal, recognizing that adding capacity for automobiles is often the least cost-effective improvement.

Policy V.A.1. Gap Closures. Identify gaps in the pedestrian and bicycle transportation systems and plan facilities to close those gaps.

Policy V.A.2. Encourage Pedestrians and Bicycle Use. Streets, pedestrian paths, and bike paths contribute to a system of fully-connected routes to all destinations. Their designs encourage pedestrian and bicycle use when small and spatially defined by buildings, trees, and lighting, and when high-speed traffic is discouraged.

Policy V.A.3. Transportation Improvement Program. Prepare and maintain a citywide transportation improvement program for all modes of travel, considering the development context when selecting which improvements should be included in the Capital Improvement Program.

Policy V.A.4. Capital Facilities Fee Program. Update and maintain a Capital Facilities Fee program to contribute to multi-modal transportation improvement projects of local and regional significance.

Policy V.A.5. Mediating Mode Conflicts. In the case of conflict between motorized and non-motorized transportation modes, roadway or right-of-way features may be added or altered to protect pedestrians and bicyclists, consistent with Urban Area General Plan goals.

Policy V.A.6. Level of Service and Mitigating Travel Demand. Level of Service and Quality of Service (see Tables V-1 and V-2, respectively) for all transportation modes (vehicle, transit, bicycle and pedestrian) on City roadways should be improved over time consistent with the financial resources reasonably available to the City and without unreasonably burdening property owners or developers. On roadways where the automobile LOS is expected to be level F, consider mitigation measures other than road widening, such as the addition of bicycle lanes, improved pedestrian access, improved transit service, and the establishment of walkable development patterns to improve the quality of service for all travel modes.

Policy V.A.7. Complete Streets. Where traffic volumes, development types and access patterns provide opportunity, a four-lane street may be narrowed to a two-lane street, with a center turn lane, in order to better accommodate on-street parking, bicycle facilities and other amenities. These types of complete street retrofit projects are generally intended to enhance facilities for non-motorized travel modes, within an existing right-of-way, without resulting in reduced functionality for the motoring public. Maintaining high-quality transit service is equally important.

Policy V.A.8. Constrained Streets. Many streets in the built city are constrained from further widening by existing development. For street segments identified in the table below (also see Figure V-4), right of-way dedications in conjunction with any development will be limited to obtaining that necessary to close a gap in: a) the number of vehicle lanes; b) bicycle lanes; c) sidewalk/curb/gutter; or, d) be a feasible mitigation measure that can't otherwise be achieved by means such as restriping within the existing right-of-way. Standard design specifications such as travel lane width or intersection design criteria may be waived or modified at the discretion of the City Engineer. Additional right of-way may be needed at key arterial / arterial intersections to allow for turning lanes, if appropriate at any particular location(s).

Goal V.B. Reduce Trip Lengths and Vehicle Miles Traveled. Reduce per capita automobile vehicle miles traveled and per capita automobile trips. To facilitate walking, particularly to and from transit stops, and to reduce automobile trip lengths blocks should be short and streets should frequently intersect.

Policy V.B.1. Street Grid. Design roadways and roadway connections to: provide a grid street system featuring short blocks and frequent connections to collectors and arterials to improve connectivity and accessibility for all modes; increase route choice; better accommodate public transit services; and, reduce trip lengths, traffic congestion, and pollution. To promote walking, limit block size to no more than 600 feet on a side, and provide internal access via alleys or walkways (any block-face less than 400 feet long need not have alleys or walkways). Cul-de-sacs are discouraged, and when deemed necessary, cul-de-sacs should include pedestrian and bicycle connections to the greatest extent possible.

Policy V.B.2. Intersection Density. Frequent multiple-leg intersections increase street connectivity and walkability, while reducing trip lengths. Intersection density will be used to measure the degree of walkability of an area where streets have not yet been laid out. LEED ND defines walkability as a minimum threshold of 140 intersections per square mile. Higher intersection density indicates that an area is more walkable. For reference, Modesto's one-square-mile downtown grid contains approximately 140 intersections.

Policy V.B.3. Street or Alley Closures. Any street or alley closures or abandonments will be evaluated for their impact on walkability and vehicle miles traveled.

Goal V.C. Evaluating System Changes. Consider revisions to the transportation system in a context-sensitive manner and evaluate the effects of new development and changes to the City's transportation infrastructure on all modes of travel (train, bus, car, bicycle, walking). Improve the City's transportation model to reflect these needs.

Policy V.C.1 Transportation Study Thresholds. Figure II-1 delineates the functional geographic areas (Downtown, Baseline Developed Area, Planned Urbanizing Area) of the city described below. For CEQA purposes, the following are Modesto's thresholds for performing transportation studies.

Downtown Area: This area is exempt from automobile Level of Service (LOS) standards and no traffic impact analysis will be required for new development.

Baseline Developed Area: If a proposal is consistent with the Urban Area General Plan, no traffic impact analysis will be required. If a general plan amendment is needed, a traffic impact analysis may be required if the proposal would result in at least 100 peak hour trips above and beyond what was assumed in the analysis for the Urban Area General Plan Master EIR, if determined to be necessary. LOS "D" is the significance threshold.

Planned Urbanizing Area: In new specific plan areas that are outside city limits, a traffic study may be required if project-related traffic, as measured in Average Daily Trips, is expected to be at least ten percent (10%) greater than anticipated to result from the General Plan land use designations. The purpose of such a study would be to determine the amount of feasible automobile-oriented and non-auto-oriented mitigation associated with the project. Once a specific plan has been approved and the area annexed to the city, traffic study policies for the Baseline Developed Area will apply. LOS "D" is the significance threshold.

Policy V.C.2. Traffic Study. If required, a Comprehensive Traffic Study should conform to the City of Modesto Traffic Impact Study Criteria. These Criteria will be amended to reflect general plan goals and policies, including definition of metrics for all both motorized and non-motorized transportation modes.

Policy V.C.3. Travel Mitigation Downtown. Streets and roads in the downtown area are constrained (see Policy V.A.6). Transportation mitigation may be applied to projects in that area to facilitate non automobile travel through means such as sidewalk widening and adding bicycle lanes and increasing transit service.

Policy V.C.4. Downtown Site Access Study. If it is determined that a site access study is needed to analyze proposed development in the downtown area, that study should evaluate movement conflicts across all modes (walking, bicycle, car, bus, train) with an emphasis on facilitating non-automobile travel.

Policy V.C.5. Travel Mitigation Outside of Downtown. Outside of the downtown area, consider and balance the effects of automobile traffic mitigation on non-automobile travel – particularly in areas where the city is attempting to improve conditions that support non-automobile travel – when considering solutions to traffic circulation problems.

Policy V.C.6 Prioritizing Transportation Investments. Strive to achieve quality of service, as depicted in Table V-2 (FDOT Figure 1-2, 2009) for each non-automobile travel mode appropriate to the location in the City.

Downtown Area: Pedestrian and bus quality of service should be A/B. Bicycle quality of service should be C/D or better. (Air quality, public health, energy conservation, environmental justice).

Baseline Developed Area: Pedestrian quality of service should be C/D on arterial streets and A/B on local and collector streets. Bicycle quality of service should be A/B on local and collector streets, C/D on arterial streets, and E/F on expressways. Bus quality of service should range from C/D to E/F, depending upon boardings. Consider improving accessibility along impacted routes by implementing Transportation Demand Management strategies.

Policy V.C.7. Corridor Studies. Prepare corridor planning studies for the following roadways, and others as deemed appropriate (See also Goals III.D, III.E, and the Policies associated with each):

- State Route 108/McHenry Avenue;
- Crows Landing Road;
- Paradise Road;
- State Route 132/Yosemite Boulevard; and,
- North 9th Street.

B. Pedestrian Strategy

Goal V.D. Increase Walking Trips. Ensure that pedestrians of all ages and abilities feel safe using pedestrian facilities in order to eliminate safety as a barrier to walking for transportation. (Air quality, public health, energy conservation, environmental justice)

Policy V.D.1. Median Refuges. Add median refuges along arterials and four-lane collectors in areas where pedestrian traffic is to be facilitated to give pedestrians a safe halfway point for street crossings.

Policy V.D.2. Bulbouts. Add sidewalk bulbouts in areas where pedestrian traffic is to be facilitated to reduce crossing distance and improve visibility of pedestrians to other roadway users. (Air quality, public health, energy conservation, environmental justice).

Policy V.D.3. Network Deficiencies. Identify gaps, needs, and deficiencies in the pedestrian transportation network, and plan to correct them.

Policy V.D.4. Signal Timing. The green phase of traffic signals citywide should be timed to allow pedestrians of all ages and abilities to safely cross the street. The Federal Highway Administration's Best Practices Design Guide for Designing Sidewalks and Trails for Access, suggests crossing times should allow for pedestrians traveling at 3.5 feet per second or slower.

Policy V.D.5. ADA Compliance. Construct or modify curbramps and sidewalks to comply with the Americans with Disabilities Act.

Policy V.D.6. Pedestrian Circulation Near the Downtown Multi-Modal Transportation Center. In planning for a future multi-modal transportation center, facilitate pedestrian access to and from the facility through curb extensions and generous sidewalks.

Policy V.D.7. Street Trees. Plant and maintain large species trees along streets to separate pedestrians from moving traffic for safety and to create an inviting walking environment.

C. Bicycle Strategy

Goal V.E. Increase Bicycle Trips. Reduce automobile trips by making bicycling easier and more convenient and by eliminating safety concerns as a barrier to the use of bicycles for transportation.

Policy V.E.1. Bicycle Facility Types. The bicycle network consists of these facility types:

Class I Bicycle Facility (Bike Path)

A Class I facility is grade-separated from the road, is primarily for recreational purposes, and often has limited connectivity to the road network (see Figure V-3). [This figure can be found in Chapter V: Transportation of the City of Modesto Urban Area General Plan.]

Class II Bicycle Facility (Bike Lane)

A Class II facility is delineated by a lane stripe and sometimes a buffer in the traveled roadway. It is used primarily for transportation, provides excellent connectivity with the road network, and convenient access to destinations (see Figure V-3). [This figure can be found in Chapter V: Transportation of the City of Modesto Urban Area General Plan.]

Where the traveled roadway isn't wide enough to accommodate a full Class II facility, a sharrow can be used if vehicle speeds don't exceed 25 mph. A sharrow is a shared lane marking that helps bicyclists and motorists with the lateral positioning of a bicycle in a travel lane.

Class III Bicycle Facility (Bike Route)

A Class III facility is a bike route with signage at the roadway edge that does not include striping. Class III facilities are typically located either on local streets or on other roadways to close a gap between sections of Class II Bike Lane.

Class IV Bicycle Facility (Cycle Track)

A Class IV facility is a two-way, dedicated cycle track that is separated and protected from vehicle travel lanes by a physical barrier (on-street parking, flexible posts, bollards, etc.).

Policy V.E.2. Funding for Bicycle Facilities. Consider funding bicycle facilities as a priority in the Capital Improvement Program.

Policy V.E.3. Opportunities to Add Bicycle Facilities. When streets are repaired or resurfaced, add bicycle facilities to those streets as appropriate with striping, stencils, and/or signage, consistent with Figure V-3. [This figure can be found in Chapter V: Transportation of the City of Modesto Urban Area General Plan.]

Policy V.E.4. Increase Ridership. Increase bicycle ridership for transportation purposes through the addition of bicycle facilities, such as a bike-share program, and other system improvements.

Policy V.E.5. Network Deficiencies. Identify deficiencies and take action to correct deficiencies in the bicycle transportation network.

Policy V.E.6. Actively Plan New Facilities. Street projects should be evaluated to determine how the planned bicycle facilities can be accommodated.

Policy V.E.7. Facilities on Constrained Streets. Where right-of-way constraints exist, a “sharrow” may be used to supplement Class II bicycle facilities where vehicle speeds do not exceed 25 mph.

Policy V.E.8. Bicycles at Signalized Intersections. Protected intersection design features, bike boxes and bicycle detection systems may be used to delineate bicycle facilities, improve safety, and allow bicycle traffic to trigger the green phase of a traffic signal. In accordance with California Vehicle Code Section 21450.5, sensors that detect the presence of a waiting bicycle should be added to signalized intersections when signals are installed, upgraded and/or maintained. Other markings and signage may be used as approved by the City Engineer.

Policy V.E.9. Signal Timing. The green phase of traffic signals throughout Modesto should be timed to allow bicycle riders of all ages and abilities to cross the street safely.

Policy V.E.10. Bicycle Circulation Near the Downtown Passenger Rail Station. Plan for the future multimodal transportation center, by facilitating improved bicycle access and parking in and around downtown, to establish safe and convenient bicycle connections to and from the site.

D. Transit Strategy

Goal V.F. Increase transit use through higher-frequency service of at least 15-minute headways downtown and along major transportation corridors. Transit and land use will be interconnected to support increased ridership.

Policy V.F.1. High-Frequency Service. Provide the most frequent service feasible in order to facilitate the highest quality public transportation.

Policy V.F.2. Balance Farebox Recovery and Service. Maintain farebox recovery ratios sufficient to meet state requirements while maximizing service, especially in the heavy use areas identified in Goal V.F.

Policy V.F.3. Minimum Service Density. Provide service on a half-mile grid where feasible to make the service as accessible as possible. Newly developing areas should provide a street pattern capable of accommodating transit service on a half-mile grid. Sidewalks should be provided in the development of new roadway systems to accommodate bus stops, and to minimize walking distance between them.

Policy V.F.4. Two-Way Service. Provide two-way service on bus routes where feasible.

Policy V.F.5. Park-and-Ride Locations. Locate park-and-ride facilities in cooperation with transit providers to maximize transit use and designed to accommodate not only motorists, but also other users of public transit and van or carpooling.

Policy V.F.6. Plans to Improve Service. Prepare feasibility studies and plans for the establishment of bus rapid transit and other local transit service to improve transit service in those areas where ridership is expected to increase. Bus Pullouts. Consider Bus pullouts with new development in the Planned Urbanizing Area to support transit passenger loading and unloading.

Policy V.F.8. Park-and-Ride. Work with new development to provide park-and-ride spaces to promote and support transit ridership.

Policy V.F.9. Coordinate Transit Service. Coordinate bus and other transit feeder service with passenger rail and other long-distance transit service to facilitate transfers between services and reduce automobile use.

Policy V.F.10. Improve Reliability. Consider upgrades to bus facilities, such as arrival / departure boards and mobile phone applications to improve predictability of service for riders.

Policy V.F.11. Downtown Multi-Modal Transportation Center. To the extent necessary, and without reducing public transportation services, reorient transit service to facilitate convenient access to and from the Downtown multi-modal transportation center.

F. Roadway Strategy

Goal V.H. Improve Roadway Network for Safety and Public Health. Support a healthy, safe Modesto by reducing trip lengths and vehicle miles traveled per capita, reducing collision rates, supporting the increased use of alternative modes, and helping reduce greenhouse gas emissions and other air pollutants, while balancing the transportation needs of all travelers.

Policy V.H.1. Roadway Facilities, Defined. The roadway network consists of the facility types listed below. Figures V-1 through V-6 constitute the Transportation Diagram, which describes the proposed general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other facilities within the Modesto Urban Area.

Freeway. This classification defines the highest volume, total access-control highways with high design speeds (55–65 mph).

State Highway. This classification applies to streets that are acquired, laid-out, constructed, improved, or maintained as a state highway pursuant to constitutional or legislative authorization. This facility type can be designated a freeway, expressway, arterial, or other roadway classification.

Expressway. The purpose of an expressway is to facilitate automobile and transit trips across town rapidly. Bicycles can be accommodated. Pedestrians are generally not expected. Expressways should have signalized intersections or roundabouts at arterial streets (one mile apart) and right-turn-only access to collector streets (one-half mile apart). The City Engineer has authority to design Expressway intersections, consistent with provisions contained within the City's Standard Specifications, on a case-by-case basis. Expressways may include Class I, II or IV bicycle facilities. Driveway access from fronting properties should not be allowed without specific authorization from the City Council (see Policy V.H.15, below).

Arterial Street. Arterials allow movement of people by all modes and provide safe and convenient access to businesses for people using any travel mode. Arterial streets may be classified either as

principal or minor arterials. A principal arterial typically has six lanes, while a minor arterial has four lanes. All arterials should have on-street bicycle facilities. Driveway access from fronting properties should be designed according to the City's Standard Specifications.

Collector Street. Collectors are primarily lined with residential development and serve a function like that of local streets, but with higher traffic volumes. Collector streets serve pedestrian and bicycle traffic, as well as automobiles and sometimes transit. Collectors may be classified either as "major" or "minor;" a major collector typically has four lanes, while a minor collector has two lanes. Driveway access from fronting properties should be designed according to the City's Standard Specifications.

Policy V.H.2. Level of Service. LOS "D" is the threshold of significance for measuring traffic impacts.

Policy V.H.3. Coordinate Planning Efforts. Coordinate the City's streets and highways system with Caltrans', the County's, and other jurisdictions' existing facilities and plans.

Policy V.H.4. Transportation Demand Management. Prepare and maintain a Transportation Demand Management Plan that includes a focus on the Downtown area to reduce automobile trips and single-occupancy vehicle trips.

Policy V.H.5. Driveway Consolidation. Consolidate driveways to reduce potential vehicle-pedestrian conflicts.

Policy V.H.6. Advanced Technology. Coordinate with Caltrans to promote the application of advanced technology to help manage congestion and enhance roadway capacity and safety.

Policy V.H.7. Roundabouts. The City of Modesto Roundabout Policy (City Council Resolution 2004-451 as amended) provide guidance that pertains to the development of the roundabouts.

Policy V.H.8. Intersection Control. The type(s) of intersection control(s) (e.g. traffic signal, traffic circle, roundabout, etc.) will be determined by the City Engineer at the time of project design.

Policy V.H.9. Standard Specifications. The City's Standard Specifications Manual applies to the construction of new roadway facilities. More design detail is provided in the City's adopted Standard Specifications. Update the Standard Specifications to be consistent with the General Plan.

Policy V.H.10. Modifications to Standard Specifications. Any Specific Plan may propose modifications to rights-of-way and cross-sections for roadways shown in the Standard Specifications Manual. Proposed design modifications must be approved by the City in conjunction with the Specific Plan.

Policy V.H.11. Claus Road Expressway Plan Line. Prepare a plan line for Claus Road, in order to inform property owners and the development community regarding the ultimate right-of-way width and location.

Policy V.H.12. Transportation Priorities Near Downtown Multi-Modal Transportation Center. Evaluate the function and priorities of streets near the downtown multi-modal transportation center.

Policy V.H.13. Truck Routes. Evaluate the need to identify new truck routes and the potential abandonment of existing truck routes due to increased truck traffic, increased size of trucks, and conflicts with pedestrian-oriented areas and noise-sensitive land uses.

Policy V.H.14. Reduce Parking Demand Downtown. Reduce parking demand downtown through a Parking Management Plan that addresses pricing, on-street parking restrictions, smart meters, locations of public parking structures, carpool parking, car rental, car sharing, and electric vehicle parking.

Policy V.H.15. Expressways. This classification defines high-volume, access-controlled roadways. Expressway locations / alignments are shown in the Circulation and Transportation Diagram, Figures V-1 and V-2. Street Details in the City of Modesto's Standard Specifications illustrate the intersection cross-section requirements for expressway intersections with arterial and collector streets, which are summarized on the following exhibit within this policy.

VMT Thresholds of Significance

The City of Modesto has not adopted a formal VMT methodology or thresholds of significance for residential development projects. Instead, the City evaluates projects for consistency with the Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory). The Technical Advisory provides guidance as to how VMT analysis could be performed and what thresholds of significance may be appropriate for CEQA analysis. More specifically, it recommends project VMT be evaluated and compared to existing VMT (for the respective land use) or the proposed project's effect on VMT be evaluated, which compares city or county (or other area as deemed appropriate by the lead agency) VMT with and without the proposed project. Given that the proposed project would modify the zoning for a currently approved specific plan, the VMT analysis for the proposed project is based on net change in total Citywide VMT between Baseline (Currently Approved) and Baseline Plus Project conditions. The intent behind this analysis is to evaluate how VMT would change if the proposed project site were developed based on current approvals versus the proposed project.

It is noted that a Level of Service/Operational Analysis no longer serves as a basis for CEQA determinations. Nevertheless, a Level of Service/Operational Analysis is provided in the Traffic Report in Appendix D.

Responses to Checklist Questions

a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? Response: A proposed project would result in a significant bicycle, pedestrian, or transit impact if it would disrupt or interfere with any existing or planned, bicycle, pedestrian, or transit facilities, or if the proposed project would result in a physical change that would be inconsistent with policies in the City of Modesto General Plan (General Plan). These analyses are related to CEQA Guidelines Transportation Checklist Question A.

Pedestrian Facilities: In the study area, there is an existing contiguous sidewalk on the west side of Oakdale Road between SR 132 and Claratina Avenue; however on the east side of Oakdale Road, the sidewalk terminates approximately 600 feet north of Sylvan Avenue. As such, there is no existing sidewalk present on the east side of Oakdale Road along the proposed project frontage.

The site plan indicates that the proposed project would construct sidewalks along all interior streets and project frontages consistent with the City of Modesto and the TSP requirements.

However, it is noted that there would be a gap in the pedestrian network on the east side of Oakdale Road between the proposed project site and the existing pedestrian facilities to the south of the proposed project site, due to lack of pedestrian facilities on the adjacent undeveloped parcels. These gaps in the sidewalk will be constructed as new projects in the TSP are constructed along Oakdale Road in the future.

In summary, the proposed project would include on-site sidewalks, curb, gutter, and lighting consistent with the TSP, the General Plan, the Non-Motorized Transportation Master Plan, Municipal Code, and Standard Specifications. The proposed project would not disrupt or interfere with any existing or planned pedestrian improvements or result in a physical change that would be inconsistent with any pedestrian-related policies in the General Plan. Therefore, the proposed project would result in a **less than significant** pedestrian impact.

Bicycle Facilities: According to the City's Non-Motorized Transportation Plan (December 2006), a variety of Class I, II, III and IV bikeways are located throughout the City. The four types of bikeways are defined as follows:

- Class I - Typically called a "bike path," a Class I bikeway provides bicycle travel on a paved right-of-way completely separated from any street or highway.
- Class II - Often referred to as a "bike lane," a Class II bikeway provides a striped and stenciled lane for one-way travel on a street or highway.
- Class III - Generally referred to as a "bike route," a Class III bikeway provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.
- Class IV - Cycle tracks or separated bikeways provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which are protected from vehicular traffic.

The nearest existing bicycle facilities are located near the Oakdale Road / Sylvan Avenue intersection. A Class II Bike Lane is present along Sylvan Avenue in both the eastbound and westbound directions, and along Oakdale Road in both the northbound and southbound directions. On Oakdale Road, the northbound bike lane terminates approximately 200 feet north of Sylvan Avenue and the southbound bike lane begins approximately 600 feet north of Sylvan Avenue. As such, there are no existing bicycle facilities present along the proposed project frontage.

Both the Non-Motorized Transportation Plan and the approved TSP indicate a future Class II Bike Lane along Oakdale Road between Sylvan Avenue and SR 219 (also listed as Kiernan Avenue or Claribel Road). Specifically, the Non-Motorized Transportation Plan identifies this as a priority project. While Policy 2.4 of the Non-Motorized Transportation Plan indicates that developers are required to adhere to the roadway design standards, signage, and cross-sections identified in the Non-Motorized Transportation Master Plan, construction of a Class II Bike Lane along the frontage would result in a gap in the bicycle network as the parcels both north and south of the proposed project are currently undeveloped. For this reason, the proposed project would dedicate the necessary right-of-way for future construction of the Class II Bike Lane along the project frontage in accordance with the Non-Motorized Transportation Plan and TSP.

The proposed project would not disrupt or interfere with the existing or planned bicycle facilities and would not result in any physical change that would be inconsistent with bicycle related policies identified in the TSP, the City's General Plan, or the Non-Motorized Transportation Plan. Therefore, the proposed project would result in a **less than significant** bicycle impact.

Transit Facilities: Stanislaus Regional Transit Authority (StanRTA) provides bus service throughout Stanislaus County. The proposed project site is currently served by Route 32 and 60. Route 32 provides connection between northeastern Modesto and downtown Modesto. Route 60 provides connection between Modesto, Riverbank, and Oakdale. The bus stop closest to the site is on the west side of the road, at approximately 75 feet north of the Oakdale Road / Bridgewood Way intersection. Other bus stops in the proposed project vicinity are located at Oakdale Road / Claratina Avenue, Mable Avenue / Oakdale Road, Mable Avenue / Palmwood Mobile Home Park, Sylvan Avenue / Oakdale Road, and Oakdale Road / Post Office Drive. Table 4 is the Traffic Report (see Appendix D) shows the existing transit routes and schedules.

The approved TSP EIR identifies a new bus turn-out location at approximately 400 feet south of the proposed project site on the east side of Oakdale Road. It would be located south of the proposed project frontage and is directly across from the existing bus stop on the west side of Oakdale Road. Although the new bus turn-out is identified in the TSP EIR, the TSP does not specify the location, length or width of the new turn-out. If the new bus turn-out were to be constructed, the proposed project would not adversely affect the implementation of the new bus turn-out facility.

The proposed project would not disrupt or interfere with existing or planned transit services and would not result in a physical change that would be inconsistent with any transit related policies identified in the TSP, the General Plan, or the Non-Motorized Transportation Plan. Therefore, the proposed projects would result in a *less than significant* transit impact.

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? Responses: A proposed project would result in a significant transportation impact if it would conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)(1), which states for land use projects, “Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.”

The proposed project’s effect on VMT is assessed based on net change in total Citywide VMT. The base year (2019) Stanislaus Council of Governments (StanCOG) Travel Demand Model (TDM) was used to estimate Baseline (Currently Approved) Citywide VMT and Baseline Plus Project Citywide VMT.

Given that the existing parcel is undeveloped, the base year TDM was updated to reflect the currently approved Tivoli Specific Plan (2018) land use designations for the proposed project site. A mix of commercial, single-family and multi-family residential development was incorporated into the model proportional to the amount of land designated for each use and estimated trips that would be generated by each use..

Once Baseline (Currently Approved) Citywide VMT was estimated, the currently approved RSC, and MHDR land uses were replaced with single-family residential to represent the proposed project and estimate Baseline Plus Project Citywide VMT. Baseline (Currently Approved) Citywide VMT and Baseline Plus Project Citywide VMT were compared to evaluate the proposed project’s effect on VMT. Table Trans-1 displays the Baseline (Currently Approved) and Baseline Plus Project Citywide total VMT. As displayed, the proposed project would result in a reduction of 9,040 VMT, which indicates the proposed single-family residential development project would result in less VMT in the City when compared to the currently approved TSP land use designations. Therefore, the proposed project’s CEQA VMT Transportation impact is *less than significant*, and no mitigation measures are required.

TABLE TRANS-1: VEHICLE MILES TRAVELED (VMT) ASSESSMENT RESULTS

Scenario	Baseline (Currently Approved)	Baseline Plus Project	Difference	Impact
Citywide VMT	2,972,164	2,963,124	-9,040	<i>Less-Than-Significant</i>

Source: Fehr & Peers, 2024.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? d) Result in inadequate emergency access? Responses: The proposed project is a residential development proposed in a residential and commercial area, so the volume, speed, and mix of vehicles generated by the proposed project would be like the existing volume, speed, and mix of vehicles in the study area.

The proposed project's circulation system is comprised of one side-street stop-controlled intersection and internal roadways which would provide full access to all lots. The intersection is located at Oakdale Road / C Drive as illustrated on the site plan. The new intersection and internal roadways would be designed to comply with the TSP (2008), the City's General Plan (2019), City of Modesto Standard Specifications (2014), and the Municipal Code. Intersection signing and striping would be designed to meet applicable industry standards from the California Manual on Uniform Traffic Control Devices (CAMUTCD) and The American Associations of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets.

Additionally, the proposed project would be subject to review and approval by the City. The review and approval process would include the Fire Department, which would include a review of the proposed project's consistency with the City's design criteria to ensure that safe vehicle access and viable emergency vehicles movements are provided. Therefore, implementation of the proposed projects would not be inconsistent with an applicable design standard and the proposed projects would result in a ***less than significant*** safety impact.

XVIII. TRIBAL CULTURAL RESOURCES

	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?			X	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.			X	

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts regarding tribal cultural resources will be guided, in part, by the TSP EIR. In accordance with AB52 and SB18, opportunities for consultation by were sent out by the City of Modesto to the relevant tribes from June 10th, 2024 to July 15th, 2024 (AB52), and June 24th, 2024 to September 23rd, 2024 (SB18).

Modesto General Plan

Chapter VII. Environmental Resources and Open Space.

F. Archaeological and Cultural Resources**Policies in the Planned Urbanizing Area**

Policies for the Planned Urbanizing Area include those presented for the Baseline Developed Area, above, and those shown below.

Policy VII.F.3.[a]. Any project subject to CEQA that involves substantial earth-disturbing activities should require consultation by the applicant for the purposes of determining archaeological and cultural resources impacts and creating appropriate mitigation to address such impacts.

Policy VII.F.3.[b]. Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive by the City of Modesto through consultation with Native American tribes or bands and a qualified archaeologist should be subject to archaeological and Native American monitoring during all ground-disturbing activities.

Policy VII.F.3.[c]. Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive by the City of Modesto through consultation with Native American tribes or bands and a qualified archaeologist should be required to carry out the following mitigation measures, at a minimum:

1. If prehistoric archaeological remains are discovered during project construction (inadvertent discoveries), all work in the area of the find shall cease, and a qualified archaeologist should be retained by the project sponsor to investigate the find, and make recommendations as to treatment and mitigation. In the event of the discovery of a burial, human bone, or suspected human bone all excavation or grading in the vicinity of the find should halt immediately and the area of the find should be protected and the project applicant immediately should notify the County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5, including California Public Resources Code Section 5097.98, if applicable. If human remains are identified, the project sponsor should also retain a Native American monitor;
2. A qualified archaeological monitor should be present and should have the authority to stop and redirect grading activities, in consultation with the Native Americans and their designated monitors, to evaluate the significance of any Native American archaeological resources discovered on the property;
3. Native American monitors from the appropriate Native American Tribes, as determined by the NAHC should be allowed to monitor all groundbreaking activities, including all archaeological testing and data recovery excavations that are likely to affect Native American resources, as determined by a qualified archaeologist. The project proponent should be responsible for compensating Native American monitors. If human remains are discovered, the NAHC should assign a Most Likely Descendent (MLD); and,
4. The landowner agrees to relinquish ownership of all Native American human remains and associated burial artifacts that are found within the project area, to the appropriate Native American MLD, as assigned by the NAHC, for proper treatment and disposition. The MLD will decide whether or not standard archaeological analysis will be allowed on human remains and associated artifacts from burials.
5. If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find, and the City's Planning Manager shall be notified. A qualified paleontologist shall evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines. The proposed mitigation plan may include a field survey of additional construction areas, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

TSP Final EIR

The TSP EIR did not analyze tribal cultural resources. An Initial Study and Notice of Preparation for the proposed project were published on July 21, 2005. Based on the Initial Study, the City of Modesto determined that an EIR was required. The Initial Study determined that the effects of the project in the following issue areas would either be insignificant or would be reduced to a less-than-significant level by mitigation measures included in the project and thus required no further analysis: mineral resources, cultural resources, and recreation. Therefore, these issues are not addressed in the EIR.

Responses to Checklist Questions

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a.i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? a.ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe. Responses: As described in the TSP EIR, the Initial Study for the TSP found that the impacts on cultural resources would be insignificant and required no further consideration or analysis. Proposed Project disturbance of the Project site is not expected to result in a significant effect on prehistoric cultural resources, including tribal cultural resources.

However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown tribal cultural resources. The TSP states that development within the planning area, including the proposed Project site, would adhere to the existing Modesto General Plan policies on regarding the discovery of resources with cultural significance to a Native American tribe at a project site. The Modesto General Plan states that if cultural significant resources are discovered, the project sponsors would immediately contact the tribal representative relative to the Project, the Native American Heritage Commission, and halt construction of the Project until properly handled. Cultural resources, including tribal cultural resources, found on the site would be handled according to the existing guidelines within the TSP and Modesto General Plan as stated in TSP Mitigation Measure CUL-1. With implementation of Mitigation Measures CUL-1, the potential impact would be ***less than significant*** with respect to tribal cultural resources.

XIX. UTILITIES AND SERVICE SYSTEMS

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Require or result in the relocation or construction of new or expanded water, wastewater or storm water 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 projects projected demand in addition to the providers 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	

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts regarding utilities and service systems from the Project will be guided, in part, by the TSP EIR.

City of Modesto General Plan**Chapter VI. Community Facilities and Services*****A. Water***

Goal VI.A. Ensure a consistent, reliable, high-quality water supply for the City of Modesto's residents and businesses.

Policy VI.A.1. Implement the demand management and conservation measures identified in the City's adopted Urban Water Management Plan (UWMP). During review of development proposals, require that all developments reduce their potable water demand. Refer to the UWMP for potential techniques to reduce potable water demand.

Policy VI.A.2. Require water infrastructure master plans for public infrastructure and/or when otherwise pertinent to provision of water service at adopted service levels for the specific plan areas or other projects depending on site issues and location.

Policy VI.A.3. All new connections to the public water system are to have meters installed. In addition, on or before January 1, 2025, all existing municipal and industrial service connections are to have water meters installed.

Policy VI.A.4. any local public or private entity that produces recycled water, and determines that within ten (10) years it will provide recycled water within the boundaries of the City of Modesto, must notify the City of that fact. Within 180 days of receipt of the notice, the City of Modesto should adopt and enforce a specified recycled water ordinance, which is to comply with the City of Modesto's UWMP.

Policy VI.A.5. For properties outside the City limits and sewer district boundaries, and for properties outside the City limits, but inside of, contiguous to, and/or near the former service area of Del Este Water Company, the extension of water service may be approved by the City Manager per City council Policy 5.001, as amended.

Goal VI.B. Pursue additional potential water supply alternatives available to the City to accommodate growth and meet future demand in both normal and dry years and continue to research and develop water reclamation as a water source.

Policy VI.B.1. Prepare and adopt an Urban Water Management Plan every five (5) years in accordance with State law (Water Code).

Policy VI.B.2. Prepare and maintain a Water Master Plan. Update the Water Master Plan, as needed, to incorporate changes in growth projections, water supplies, and demands.

Policy VI.B.3. encourage the optimum beneficial use of water resources within the City. Strive to maintain an adequate supply of high-quality water for urban uses. At a minimum, potable water supplies delivered to water customers shall conform to the primary maximum contaminant levels as defined in State law (*environmental justice*).

Policy VI.B.4. Strive to stabilize groundwater levels and minimize groundwater overdraft, as part of conjunctive groundwater/surface water management program. View regional water resources, such as groundwater, surface water, and recycled wastewater, as an integrated hydrologic system when developing water management programs.

Policy VI.B.5. Construct, operate, maintain, and replace water infrastructure facilities in a manner that will provide the best option possible service to the public. Ensure that infrastructure is installed before or concurrently with development. Take a comprehensive approach to financing, using a blend of special taxes, benefit assessments, and other methods to ensure that infrastructure installation occurs in a timely manner.

Policy VI.B.6. Continue to establish guidelines, policies, and programs to implement water conservation to the maximum extent feasible. Funding for large conservation rebate or exchange programs should be maintained and enhanced. Strive to maximize the utilization of water resources when developing and implementing the City's Economic Development Strategy.

Goal VI.C. Be actively engaged in Stanislaus and Tuolumne Rivers Groundwater Basin Association, which provides a forum for coordinated planning and management of the Modesto Groundwater Subbasin.

Policy VI.C.1. Implement Local Basin Management Objectives discussed in the Integrated Regional Groundwater Management Plan, or the management objectives in the most recent groundwater sustainability plan, which relate to the specific approaches to water management goals including groundwater supply, groundwater quality, and protection against inelastic land surface subsidence.

B. Wastewater

Goal VI.D. Strive to meet increasingly strict wastewater regulations in a cost-effective manner. The City's wastewater treatment facilities will conform to standards for wastewater and biosolids treatment and disposal, as established by the Central Valley Regional Water Quality Control Board, in compliance with applicable federal and state laws.

Policy VI.D.1. Consider reclaiming wastewater as a means to optimize the region's water resources, reduce discharge from the treatment plant, reduce the risk of fines and reduce costs associated with producing water from new/additional sources.

Policy VI.D.2. Comply with the Central Valley Regional Water Quality Control Board requirement to cease all discharge of wastewater that is treated at less than tertiary levels by May 1, 2018.

Policy VI.D.3. Consider reuse of wastewater treatment byproducts, such as biosolids and digester gas, which can reduce costs associated with treatment plant operations.

Policy VI.D.4. Pursue the near-term expansion of the wastewater treatment and disposal capacity of the Jennings Road Treatment Plant.

Policy VI.D.5. Pursue the long-term relocation of the Sutter Avenue Primary Treatment Plant, to the Jennings Road site, in order to consolidate operations and reduce treatment plant flooding risks.

Policy VI.D.6. Construct, operate, maintain, and replace wastewater facilities in a manner that will provide the best possible service to the public. In developing implementations plans, consider rehabilitation of essential existing facilities, expansion to meet current excess demand, and the timely expansion for future demand.

Goal VI.E. If service is available, provide wastewater services within the sewer service area in a manner that protects surface water and groundwater resources.

Policy VI.E.1. allocate the City's wastewater system capacity to existing and future residential, commercial, and industrial customers. Discharges from environmental cleanup sites may be issued conditional discharge permits subject to the availability of excess treatment capacity. In accordance with federal and state regulations, discharges to the wastewater system may not, or may not threaten to, upset or interfere with, the wastewater system.

Policy VI.E.2. require wastewater infrastructure master plans for the specific public infrastructure or when otherwise pertinent to provision of service at adopted service levels for the specific plan areas or other projects depending on site issues and location.

Policy VI.E.3. Individual development projects are subject to review by the City for adequate wastewater collection service and treatment.

Policy VI.E.4. Subject to the approval of the Stanislaus Local Agency Formation Commission, the City of Modesto will be the sole provider of wastewater services to the area within the City's Sphere of Influence and sewer service area.

Policy VI.E.5. Prior to annexation, determine that adequate wastewater treatment and disposal capacity can be provided for the proposed annexation area.

Policy VI.E.6. Within the city limits and the sewer service area, all developed properties should connect to the sewer system within five (5) years of the extension of service.

Policy VI.E.7. Encourage the regional beneficial reuse of reclaimed water, and commit to development of a full reclamation program in the long term. Comply with Title 22 standards for use of reclaimed water and criteria contained in the California Department of Public Health "Purple Book".

Policy VI.E.8. Participate in the North Valley Recycled Water Program, which involves routing of tertiary treated wastewater to the Delta Mendota Canal.

Policy VI.E.9. Strive to use land application of biosolids as the most environmentally beneficial reuse of this resource, rather than the disposal options of landfilling or incineration.

Policy VI.E.10. Develop methods to discontinue use of the sanitary system to temporarily drain stormwater runoff, and eliminate cross-connections between the wastewater and stormwater infrastructure systems.

Policy VI.E.11. Establish odor buffer zones around primary and secondary wastewater plants, thereby minimizing the likelihood of odors impacting new residential or commercial development.

Policy VI.E.12. Utilize source control and demand management among its tools for accomplishing the most cost-effective wastewater management that protects public health and the environment.

Policy VI.E.13. No provider of wastewater services may deny or condition the approval of an application for services, or reduce the amount of the services applied for, if the proposed development includes housing affordable to lower income households, except upon making specific findings pursuant to State law.

Policy VI.E.14. Require each new development project to be served with public sanitary sewers. Utilities located in private streets shall be part of the public sewerage system and shall be connected to a sewer lateral.

Policy VI.E.15. For properties outside of the City limits and sewer district boundaries, the extension of sewer service may be approved by the City Manager per City Council Policy 5.002, as amended.

Policy VI.E.16. Prepare and implement an update to the City's *Wastewater Master Plan* (WWMP), and complete an EIR for the updated WWM. The updated WWMP should account for the UAGP, zoning revisions, updated growth projections, updated sewer demand information, regulatory requirements, and identify new capital improvement projects. The WWMP should involve several improvements to the City's collection system and upgrades to

the Sutter and Jennings treatment plants. The objectives of the updated WWMP may include the following:

- Implement the City's economic goals and Urban Area General Plan by planning for, and providing, sewer infrastructure in a timely and cost-effective manner to serve new and existing development.
- Continue the City's policy of providing affordable and attractive wastewater rates.
- Repair and replace aging wastewater infrastructure.
- Ensure adequate wastewater infrastructure and services are available to serve new growth within the General Plan and City's Sphere of Influence.
- Provide an adequate funding mechanism to pay for necessary improvements.
- Require new development to pay for infrastructure necessary to serve it.
- Plan for state-of-the-art facilities that reliably and economically meet the changing regulatory requirements.

For collection system improvements, the objectives of the updated WWMP may include:

- To increase sewer capacity to convey peak wet weather flows for a 10-year storm event, and where required, to serve future customers.
- To reduce wet weather flow volumes by removing cross connections with stormwater sewers.
- To extend service to new customers.
- To replace, repair, or rehabilitate existing trunk sewers, and to reduce infiltration and inflow of stormwater into the sanitary sewers.
- To improve sewer collection reliability by providing new and redundant infrastructure improvements, including sewer trunk lines and lift stations, in known deficient areas at critical areas within the existing system.

For treatment plant improvements, the objectives may include the following:

- To reduce flooding impacts at the Sutter Plant site and increase treatment process operational flexibility and efficiencies by constructing new primary treatment and solids handling facilities at the Jennings Plant and remove primary treatment and handling facilities from the Sutter Plant.
- To increase the capacity of the outfall connecting the primary and secondary treatment plants, and to provide increased reliability for the existing outfall.
- To increase treatment systems efficiency, reliability, and functionality for both domestic and cannery process stream flows.
- To increase treatment operational opportunities through new systems or system alterations to remain in compliance with existing Central Valley RWQCB's NPDES requirements and plan for potential future permitting regulations.

TSP

Chapter VI. Community Services

6.4 Solid Waste

Solid waste disposal will be provided to the TSP via one of the City of Modesto's three contracted solid waste providers. Waste collection is thru the City of Modesto's "two Can" program that collects refuse in one can and yard and food waste in the other can.

The reduction of solid waste will be promoted through the use of recycling, composting and other transformation of wastes. Attached or multi-family residential development will incorporate central collection and recycling areas for solid waste recovery. Single family residences can dispose recycled waste in the waste can.

The proposed project would generate solid waste from residential, commercial, and office uses. The City can adequately provide solid waste disposal to the TSP through options that include waste reduction, recycling, the Modesto and Stanislaus County Waste-to-Energy Plant, and landfill disposal.

TSP EIR

Chapter IV. Environmental Setting, Impacts, and Mitigation

F. Utilities and Service Systems

Wastewater

Modesto's wastewater collection system conveys wastewater from residential, commercial, and industrial customers in its service area. Modesto's existing collection system includes nearly 600 miles of sanitary sewer lines, ranging from 6 to 60 inches in diameter, and about 39 lift stations. There are about 80 miles of major sewers, called trunk pipelines.

Most of the wastewater system flows by gravity. In some cases, lift stations (also called pump stations) are required to lift the wastewater up to a point where it can flow by gravity toward Modesto's primary wastewater treatment plant. In other cases, lift stations put the wastewater in the pipelines under pressure; such pipelines are called force mains.

The City of Modesto operates two wastewater treatment plants. The primary wastewater treatment plant ("Primary Plant") is located just north of the Tuolumne River and W. Hatch Road. It is south of John Street and Robertson Road, which are at the edge of a residential area. The Dryden Municipal Golf Course lies east of the plant, and the undeveloped Tuolumne River Regional Park (partly under construction) lies adjacent to the plant, to the west and north.

The Secondary Plant is outside the City boundary, and is located approximately 6.5 miles to the southwest of the City, on the eastern side of the San Joaquin River. The Secondary Plant and adjacent City-owned ranch ("Ranch") lie south of W. Grayson Road and west of S. Carpenter Road. A small portion of the Ranch property is located south of West Main Avenue. Wastewater flowing in the collection system is either pumped or flows by gravity to the Primary Plant, where it receives primary treatment. The Secondary Plant currently provides secondary (biological) treatment. During this treatment, microorganisms break down biological matter.

The project site is not currently served by sewers. There is a trunk sewer that ends just south of the project site, and would serve the project. The Sonoma Trunk sewer begins more than two miles south of the project site at the Scenic Drive Lift Station at the nook of Scenic Bend (near Scenic Dr.) adjacent to Dry Creek (also known as Beard Brook). The Sonoma Trunk runs under various streets and unimproved areas, including north in Sonoma Avenue, west in Orangeburg Avenue, north in Walnut Tree Drive, and north in West Sorrel Drive, before stubbing out at Sylvan Avenue.

Water quality in surface and ground water bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards (RWQCB). The City of Modesto and Stanislaus County are under the jurisdiction of the RWQCB - Central Valley Region, which is responsible for implementation of state and federal water quality protection guidelines in the vicinity of the project area. RWQCBs develop standards restricting the amount of pollutants that can be discharged into the ground or into a water body, and enforce these standards by requiring proper authorization prior to discharges of potential water-borne pollutants.

The TSP EIR evaluated direct impacts of the TSP, and it included a substantial analysis of the secondary impacts of constructing and operating the necessary wastewater capacity to serve the TSP area. The analysis is contained under the Utilities and Services Systems environmental topic (TSP EIR Section L), and it covers many topics including air quality, agricultural resources, biological resources, cultural, tribal, etc.). In all, there are 28 impacts presented (Impacts L.1 through L.28), and a variety of mitigation measures designed to reduce or minimize the impacts during construction. It is noted that mitigation measures presented to reduce construction impacts are no longer relevant given that the wastewater capacity improvements have been constructed and capacity is adequate for the TSP.

M. Water Supply

Impact M.1. Implementation of the TSP could increase the demand for potable water.

Impact M.2. Demand from the project would cause low water pressure problems within the City's water system.

Mitigation Measure M.2. *In order to maintain adequate water pressure in the City's delivery system, it would be necessary to install two new wells that would have a combined capability to meet or exceed the project's peak-hour demand of 2,160 gallons per minute and maximum-day demand of approximately 6.57 af/day. One well must be fully developed and operational by the time of the initial project development. The second well must be provided and operational during the second phase of development or as determined by the City of Modesto.*

Impact M.3. Development of the proposed project could contribute to cumulative demand for potable water in the Modesto Water Service Area.

Impact M.4. Development of the proposed project would not contribute substantially to the potential for regional cumulative demand to result in overdraft of groundwater supplies.

Responses to Checklist Questions

a) Require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? 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 projects projected demand in addition to the providers existing commitments? Responses: The proposed Project

includes a storm drainage basin that has been sized to accommodate the City's storm drainage standard.

The proposed Project will include all dry utilities installed in the subdivision by the project applicant.

The TSP EIR estimated wastewater generation for the Project site would be 52,048 gallons per day (0.052 mgd) under the existing land uses. The proposed Project would generate 104,139 gallons per day (0.104 mgd). Table Util-1 provides a comparison of wastewater generation with Existing and Proposed uses.

TABLE UTIL-1: COMPARISON OF WASTEWATER GENERATION WITH EXISTING AND PROPOSED USES

Land Use	Factors	Density	Units	Existing acres	Existing Wastewater Generation	Proposed acres	Proposed Wastewater Generation
Very Low Density Residential	1370	2.5	6	2.55	3,493.50	-	-
Medium High Density Residential	6960	21	102	4.87	33,895.20	-	-
Regional Serving Commercial	1170			12.53	14,660.10	-	-
Medium Density Residential	5220	13	185	-	-	19.95	104,139.00
TOTAL				19.95	52,048.80	19.95	104,139.00

The City has constructed adequate wastewater capacity to serve the project's projected demand for wastewater treatment services in addition to its existing commitments, and no improvements or expansions to the existing wastewater treatment plant are required to serve the proposed Project. Implementation of the proposed Project would have a ***less than significant*** impact.

Relevant TSP Mitigation Measures

Mitigation Measure L.1. Prior to or concurrent with development, the project sponsors and any project applicants for future development in the TSP area shall install all on-site collection system improvements which are necessary to serve the development.

Mitigation Measure L.2. Prior to issuance of a building permit, the project applicants will be required to contribute toward their fair share of the required wastewater treatment and disposal facilities through payment of future capacity charges, as adopted by the City, or through an equivalent funding measure.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? Response: The City of Modesto has prepared an Urban Water Management Plan (UWMP 2020) that predicts the water supply available to the City of Modesto in normal, single-dry, and multiple-dry years out to 2045. Water distribution will be by an underground distribution system to be installed as per the City of Modesto standards and specifications. The previously approved TSP EIR included a Water Supply

Assessment that analyzed the impacts of development on existing water supply. Using the Tivoli Water Supply Assessment, the estimated water demand for the Project site would be 60,117.20 gallons per day if developed with the existing land uses. The proposed uses would reduce total water demand to 41,625 gallons per day, which would be a beneficial impact. It is also notable that the current orchard has an irrigation demand that is estimated to be 65,185.46 gallons per day (3.66 af/ac/yr), which means that the proposed Project would result in a net decrease in water use on the project site. Table Util-2 provides a comparison of water demand with existing and proposed uses.

TABLE UTIL-2: COMPARISON OF WATER DEMAND WITH EXISTING AND PROPOSED USES

Land Use	Factors	Density	Units	Existing acres	Existing Water Demand	Proposed acres	Proposed Water Demand
Very Low Density Residential	730	2.5	6	2.55	4,653.75	-	-
Medium High Density Residential	225	21	102	4.87	23,010.75	-	-
Regional Serving Commercial	2590			12.53	32,452.70	-	
Medium Density Residential	225	13	185			19.95 ¹	41,625.00
TOTAL				19.95	60,117.20	19.95	41,625.00

SOURCE: WATER SUPPLY ASSESSMENT FOR TIVOLI SPECIFIC PLAN (2007)

Implementation of the propped project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Implementation of the proposed project would have a **less than significant** impact relative to this topic.

Relevant TSP Mitigation Measures

Mitigation Measure I.1. The proponent shall prepare a SWPPP for each development project under the specific plan (or one Master SWPPP for all development) designed to reduce potential impacts to surface water quality through the construction period of all of the project components (whether or not the particular portion of the projects disturbs more than one acre). The SWPPP shall emphasize measures designed to minimize erosion and off-site sedimentation.

Mitigation Measure I.2. The City shall ensure that development under the proposed project meets all the requirements of the current Municipal NPDES Permit (NPDES Permit No. R5-2003-0132 as amended by Order No. R5-2002-0182) for operation-phase water quality treatment.

Mitigation Measure M.2. In order to maintain adequate water pressure in the City's delivery system, it would be necessary to install two new wells that would have a combined capability to meet or exceed the project's peak-hour demand of 2,160 gallons per minute and maximum-day demand of approximately 6.57 af/day. One well must be fully developed and operational by the time of the initial project development. The second well must be provided and operational during the second phase of development or as determined by the City of Modesto.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? Responses: The proposed Project would not generate significant or abnormal volumes of solid waste. The solid waste capacity in Modesto is adequate to serve the demand resulting from General Plan build-out, including the Tivoli Specific Plan. Construction and operation of new development in the Tivoli Specific Plan would not conflict with State and local regulations governing solid waste disposal and diversion, and the General Plan includes policies and actions to promote consistency with other solid waste regulations. The proposed Project would be required to comply with all federal, state, and local regulations regarding solid waste. For these reasons, the proposed Project would not result in new or more severe impacts disclosed in the TSP EIR. Implementation of the proposed Project would have a **less than significant** impact relative to this topic.

XX. WILDFIRE

<i>Would the project:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			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	

Existing Setting

Implementation of the proposed Project would introduce new residential uses to the Project site that are different than those adopted for the same parcels in the TSP. The determination of impacts regarding wildfire will be guided, in part, by the TSP EIR.

City of Modesto General Plan**Chapter VI. Community Facilities and Services*****G. Fire Protection***

Goal VI.K. Provide responsive fire and life safety protection to the community through control of hostile fire, fire prevention, emergency medical services, emergency preparedness, and mitigation of hazardous materials incidents.

Policy VI.K.1. Maintain adequate fire flows in relation to structures size, design, and requirements for construction and/or built-in fire protection systems in accordance with the California Fire Code and adopted local ordinances. Determination of adequate fire flows includes factors such as storage capacity, system gridding, hydrant spacing, and sizing of water mains.

Policy VI.K.2. Ensure adequate ingress and egress to all structures for fire fighting and rescue purposes independent of privately-owned and maintained driveways. Provide protection of life and property through the use of engineered fire protection systems, including roof systems.

Policy VI.K.3. Practice timely adoption of the current edition of the California Fire Code including local ordinances designed to address local conditions. The California Fire Code may be amended to suit local conditions.

Policy VI.K.4. Ensure that fire stations, apparatus, equipment, and personnel are in place concurrent with construction in the Planned Urbanizing Area.

Policy VI.K.5. Future fire station sites and facilities should be closely coordinated with existing and planned public parks, libraries, and other activity centers in order to encourage maximum efficiency of public facilities.

Policy VI.K.6. Promote fire-safe behaviors within the community through public fire education activities and programs.

Policy VI.K.7. Maintain readiness to mitigate man-made or natural disasters through maintenance and implementation of the Multi-Hazard Functional Plan, the Multi-Hazard Mitigation Plan, and the Emergency Operations Plan.

Policy VI.K.8. Maintain equipment, staffing, and facilities to provide Emergency Medical Services, Fire Prevention and Suppression, Urban Search and Rescue, and Hazardous Materials Response Capabilities.

Policy VI.K.9. Provide an adequate Fire and Life Safety Delivery system through the achievement of the following standards:

- a) Maintain an emergency response system capable of achieving the following standards in 90 percent of all cases:
 - The first fire emergency response unit arrives within six minutes of dispatch;
 - A full first alarm assignment consisting of four engines, one truck, one chief officer, and a minimum of 16 personnel arrives within 10 minutes of dispatch; and,
 - A second alarm assignment consisting of two engines and one truck with a minimum of nine personnel arrives within 15 minutes of dispatch.

Policy VI.K.10. Protect life and property by requiring engineered fire protection systems and fire resistive roof systems as part of all new construction; in situations where access is limited, fire sprinklers shall be required for new construction.

Policy VI.K.11. Provide an effective prevention program aimed at fire loss reduction through inspection, investigation, and public education.

Policy VI.K.12. Coordinate with affected fire protection districts when an annexation to the City is proposed, and before it has been finalized, regarding fire protection and other emergency services.

Policy VI.K.13. Negotiate with affected fire protection districts when an annexation to the City is contemplated and before it has been effected to determine whether the boundary change

may result in the erosion of fire protection or other emergency services. Any resulting agreements must be approved by City Council and the governing board of the fire protection district prior to City Council approval of the annexation. Options range from the consolidation of the fire protection district into Modesto City Fire to revenue sharing.

Responses to Checklist Questions

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? Response: The Project site will connect to an existing network of City streets. The proposed circulation improvements would allow for greater emergency access relative to existing conditions. The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts from project implementation would be considered *less than significant* relative to this topic.

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? Response: The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The County has areas with an abundance of flashy fuels (i.e. grassland). The Project site is in an area that is predominately agricultural and urban, which is not considered at a significant risk of wildfire. Therefore, impacts from project implementation would be considered *less than significant* relative to this topic.

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? Response: The proposed Project includes development of infrastructure (water, sewer, and storm drainage). The proposed infrastructure improvements would allow for decreased fire risk relative to existing conditions. The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts from project implementation would be considered *less than significant* relative to this topic.

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? Response: The Project site will be connecting to an existing network of City streets. The proposed circulation improvements would allow for greater emergency access relative to existing conditions. The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The Project site is relatively flat; therefore, the potential for a landslide in the Project site is essentially non-existent.

Therefore, impacts from Project implementation would be considered *less than significant* relative to this topic.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			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	

Responses to Checklist Questions

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? **Response:** This Initial Study includes an analysis of the impacts associated with aesthetics, agricultural and forest resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. The analysis covers a broad spectrum of topics relative to the potential for the proposed Project to have environmental impacts. This includes the potential for the proposed Project to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. The EIR conclusions from the TSP EIR were presented and discussed relative to the proposed land use change. It was found that the proposed Project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of mitigation measures. For the reasons presented throughout this Initial Study, the proposed Project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. With the implementation of

mitigation measures presented in this Initial Study, the proposed Project would have a ***less than significant*** impact relative to this topic.

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)? **Response:** This Initial Study includes an analysis of the impacts associated with a broad spectrum of topics relative to the potential for the proposed Project to have cumulative environmental impacts. It was found that the proposed Project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of mitigation measures. These mitigation measures would also function to reduce the proposed Project's contribution to cumulative impacts. There are no significant cumulative or cumulatively considerable effects that are identified associated with the proposed Project after the implementation of all mitigation measures presented in this Initial Study. With the implementation of all mitigation measures presented in this Initial Study, the proposed Project would have a ***less than significant*** impact relative to this topic.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? **Responses:** The construction phase could affect surrounding neighbors through increased air emissions, noise, and traffic; however, the construction effects are temporary and are not substantial. The operational phase could also affect surrounding neighbors through increased air emissions, noise, and traffic; however, mitigation measures have been incorporated into the proposed Project that would reduce the impacts to a less than significant level. The proposed Project would not cause substantial adverse effects on human beings. Implementation of the proposed Project would have a ***less than significant*** impact relative to this topic.

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APPENDIX A: AIR QUALITY/GREENHOUSE GAS/ENERGY MODELING OUTPUTS

Martin Tivoli Subdivision Detailed Report

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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	Martin Tivoli Subdivision
Construction Start Date	8/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.10
Precipitation (days)	29.2
Location	Modesto, CA, USA
County	Stanislaus
City	Modesto
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2258
EDFZ	15
Electric Utility	Modesto Irrigation District
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

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	185	Dwelling Unit	19.9	360,750	2,166,879	0.00	586	—

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.	4.03	3.39	31.7	31.1	0.06	1.37	19.8	21.2	1.26	10.1	11.4	—	6,763	6,763	0.28	0.11	3.08	6,788
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	113	113	29.8	29.1	0.06	1.23	9.36	10.6	1.14	3.69	4.83	—	6,745	6,745	0.27	0.11	0.09	6,770
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.23	6.22	7.54	11.2	0.02	0.27	1.39	1.59	0.25	0.60	0.78	—	2,344	2,344	0.08	0.07	0.93	2,369
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.14	1.14	1.38	2.04	< 0.005	0.05	0.25	0.29	0.05	0.11	0.14	—	388	388	0.01	0.01	0.15	392

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	4.03	3.39	31.7	31.1	0.06	1.37	19.8	21.2	1.26	10.1	11.4	—	6,763	6,763	0.28	0.06	0.65	6,788

2026	1.61	1.37	10.6	16.5	0.03	0.38	0.63	1.01	0.35	0.15	0.51	—	3,371	3,371	0.12	0.11	3.08	3,408
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.89	3.28	29.8	29.1	0.06	1.23	9.36	10.6	1.14	3.69	4.83	—	6,745	6,745	0.27	0.11	0.09	6,770
2026	1.59	1.34	10.7	15.7	0.03	0.38	0.63	1.01	0.35	0.15	0.51	—	3,314	3,314	0.12	0.11	0.08	3,349
2027	113	113	6.99	10.5	0.01	0.30	0.11	0.41	0.27	0.03	0.30	—	1,616	1,616	0.06	0.02	0.01	1,623
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.65	0.55	4.77	5.33	0.01	0.20	1.39	1.59	0.18	0.60	0.78	—	1,136	1,136	0.04	0.02	0.22	1,143
2026	1.12	0.95	7.54	11.2	0.02	0.27	0.43	0.70	0.25	0.10	0.36	—	2,344	2,344	0.08	0.07	0.93	2,369
2027	6.23	6.22	0.31	0.48	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	72.8	72.8	< 0.005	< 0.005	0.02	73.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.12	0.10	0.87	0.97	< 0.005	0.04	0.25	0.29	0.03	0.11	0.14	—	188	188	0.01	< 0.005	0.04	189
2026	0.20	0.17	1.38	2.04	< 0.005	0.05	0.08	0.13	0.05	0.02	0.06	—	388	388	0.01	0.01	0.15	392
2027	1.14	1.14	0.06	0.09	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	< 0.005	12.1

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.	16.7	16.2	5.70	52.1	0.09	0.14	7.35	7.50	0.14	1.87	2.01	101	11,697	11,797	10.8	0.50	32.2	12,248
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.0	14.5	6.30	37.8	0.08	0.14	7.35	7.49	0.13	1.87	2.01	101	10,996	11,097	10.8	0.54	3.35	11,532
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	15.4	14.9	5.92	41.4	0.08	0.14	7.06	7.19	0.13	1.80	1.93	101	10,995	11,096	10.8	0.51	15.1	11,533
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.80	2.72	1.08	7.55	0.02	0.03	1.29	1.31	0.02	0.33	0.35	16.7	1,820	1,837	1.78	0.08	2.50	1,909

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	7.27	6.89	4.81	41.3	0.09	0.07	7.35	7.43	0.07	1.87	1.94	—	8,762	8,762	0.42	0.45	29.6	8,935
Area	9.31	9.26	0.10	10.5	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
Energy	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	2,809	2,809	0.24	0.02	—	2,821
Water	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Waste	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Total	16.7	16.2	5.70	52.1	0.09	0.14	7.35	7.50	0.14	1.87	2.01	101	11,697	11,797	10.8	0.50	32.2	12,248
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.54	6.13	5.51	37.4	0.08	0.07	7.35	7.43	0.07	1.87	1.94	—	8,090	8,090	0.50	0.48	0.77	8,247
Area	8.34	8.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	2,809	2,809	0.24	0.02	—	2,821
Water	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Waste	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Total	15.0	14.5	6.30	37.8	0.08	0.14	7.35	7.49	0.13	1.87	2.01	101	10,996	11,097	10.8	0.54	3.35	11,532
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	6.46	6.07	5.08	35.9	0.08	0.07	7.06	7.13	0.07	1.80	1.86	—	8,075	8,075	0.45	0.46	12.5	8,234
Area	8.82	8.79	0.05	5.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.8	13.8	< 0.005	< 0.005	—	13.9
Energy	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	2,809	2,809	0.24	0.02	—	2,821
Water	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Waste	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Total	15.4	14.9	5.92	41.4	0.08	0.14	7.06	7.19	0.13	1.80	1.93	101	10,995	11,096	10.8	0.51	15.1	11,533
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.18	1.11	0.93	6.55	0.01	0.01	1.29	1.30	0.01	0.33	0.34	—	1,337	1,337	0.07	0.08	2.07	1,363
Area	1.61	1.60	0.01	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.29	2.29	< 0.005	< 0.005	—	2.30
Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	465	465	0.04	< 0.005	—	467
Water	—	—	—	—	—	—	—	—	—	—	—	2.34	16.2	18.5	0.24	0.01	—	26.3
Waste	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Total	2.80	2.72	1.08	7.55	0.02	0.03	1.29	1.31	0.02	0.33	0.35	16.7	1,820	1,837	1.78	0.08	2.50	1,909

3. Construction Emissions Details

3.1. 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	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314

Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
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	0.11	0.09	0.87	0.83	< 0.005	0.04	—	0.04	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
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	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
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	0.09	0.08	0.05	0.94	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	143	143	0.01	0.01	0.57	146

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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.61	3.61	< 0.005	< 0.005	0.01	3.67
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	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.61
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

3.3. 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 Equipm ent	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	0.31	0.26	2.44	2.33	0.01	0.10	—	0.10	0.09	—	0.09	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
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	0.06	0.05	0.45	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
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	0.10	0.09	0.06	1.08	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	164	164	0.01	0.01	0.65	167
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	0.09	0.08	0.08	0.83	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	146	146	0.01	0.01	0.02	148
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	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.4	12.4	< 0.005	< 0.005	0.02	12.6
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.05	2.05	< 0.005	< 0.005	< 0.005	2.08
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. 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	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
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	0.17	0.15	1.35	1.68	< 0.005	0.06	—	0.06	0.05	—	0.05	—	310	310	0.01	< 0.005	—	311
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	0.03	0.25	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.3	51.3	< 0.005	< 0.005	—	51.4
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	0.30	0.27	0.25	2.76	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	487	487	0.02	0.02	0.06	493
Vendor	0.03	0.02	0.64	0.22	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	448	448	0.01	0.07	0.03	468
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	0.04	0.03	0.37	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	64.8	64.8	< 0.005	< 0.005	0.12	65.8
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	57.8	57.8	< 0.005	0.01	0.07	60.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.02	10.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.58	9.58	< 0.005	< 0.005	0.01	10.0
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. 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	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
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	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
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	0.89	0.74	6.85	9.01	0.02	0.26	—	0.26	0.24	—	0.24	—	1,665	1,665	0.07	0.01	—	1,671
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	0.16	0.14	1.25	1.64	< 0.005	0.05	—	0.05	0.04	—	0.04	—	276	276	0.01	< 0.005	—	277
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	0.31	0.29	0.18	3.31	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	534	534	0.01	0.02	1.99	543
Vendor	0.03	0.02	0.58	0.21	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	439	439	0.01	0.07	1.09	460
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	0.28	0.26	0.22	2.54	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	477	477	0.02	0.02	0.05	484
Vendor	0.03	0.02	0.62	0.21	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	440	440	0.01	0.07	0.03	460
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	0.20	0.18	0.14	1.83	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	341	341	0.01	0.02	0.60	347
Vendor	0.02	0.01	0.42	0.14	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	305	305	0.01	0.05	0.33	320
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	0.04	0.03	0.02	0.33	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.5	56.5	< 0.005	< 0.005	0.10	57.4
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	50.6	50.6	< 0.005	0.01	0.05	52.9

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
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3.9. Paving (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
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	0.02	0.01	0.14	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.6	29.6	< 0.005	< 0.005	—	29.7
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	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.89	4.89	< 0.005	< 0.005	—	4.91
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	0.06	0.06	0.05	0.57	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	107	107	< 0.005	< 0.005	0.01	109
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.20
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	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.36
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

3.11. Paving (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.88	0.74	6.94	9.95	0.01	0.30	—	0.30	0.27	—	0.27	—	1,511	1,511	0.06	0.01	—	1,516
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	0.03	0.03	0.26	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.2	56.2	< 0.005	< 0.005	—	56.4
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	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.30	9.30	< 0.005	< 0.005	—	9.33
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	0.06	0.06	0.04	0.52	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	105	105	< 0.005	< 0.005	0.01	107
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.03	4.03	< 0.005	< 0.005	0.01	4.09
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	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.68
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

3.13. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	113	113	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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

Architect Coatings	6.19	6.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Architect ural Coating s	1.13	1.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.05	0.05	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	93.3	93.3	< 0.005	< 0.005	0.01	94.7
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	—	5.27	5.27	< 0.005	< 0.005	0.01	5.35
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	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.89
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

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	7.27	6.89	4.81	41.3	0.09	0.07	7.35	7.43	0.07	1.87	1.94	—	8,762	8,762	0.42	0.45	29.6	8,935
Total	7.27	6.89	4.81	41.3	0.09	0.07	7.35	7.43	0.07	1.87	1.94	—	8,762	8,762	0.42	0.45	29.6	8,935
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	6.54	6.13	5.51	37.4	0.08	0.07	7.35	7.43	0.07	1.87	1.94	—	8,090	8,090	0.50	0.48	0.77	8,247
Total	6.54	6.13	5.51	37.4	0.08	0.07	7.35	7.43	0.07	1.87	1.94	—	8,090	8,090	0.50	0.48	0.77	8,247
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.18	1.11	0.93	6.55	0.01	0.01	1.29	1.30	0.01	0.33	0.34	—	1,337	1,337	0.07	0.08	2.07	1,363
Total	1.18	1.11	0.93	6.55	0.01	0.01	1.29	1.30	0.01	0.33	0.34	—	1,337	1,337	0.07	0.08	2.07	1,363

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	—	—	—	—	—	—	—	—	—	—	—	—	1,807	1,807	0.15	0.02	—	1,816
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,807	1,807	0.15	0.02	—	1,816
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	1,807	1,807	0.15	0.02	—	1,816
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,807	1,807	0.15	0.02	—	1,816
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	299	299	0.02	< 0.005	—	301
Total	—	—	—	—	—	—	—	—	—	—	—	—	299	299	0.02	< 0.005	—	301

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	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	1,002	1,002	0.09	< 0.005	—	1,005
Total	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	1,002	1,002	0.09	< 0.005	—	1,005

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	1,002	1,002	0.09	< 0.005	—	1,005
Total	0.09	0.05	0.79	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	1,002	1,002	0.09	< 0.005	—	1,005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	166	166	0.01	< 0.005	—	166
Total	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	166	166	0.01	< 0.005	—	166

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	7.72	7.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.62	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.97	0.92	0.10	10.5	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
Total	9.31	9.26	0.10	10.5	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.72	7.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.62	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	8.34	8.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.41	1.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.11	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.09	0.08	0.01	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.29	2.29	< 0.005	< 0.005	—	2.30
Total	1.61	1.60	0.01	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.29	2.29	< 0.005	< 0.005	—	2.30

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	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Total	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Total	—	—	—	—	—	—	—	—	—	—	—	14.2	97.7	112	1.46	0.04	—	159
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.34	16.2	18.5	0.24	0.01	—	26.3
Total	—	—	—	—	—	—	—	—	—	—	—	2.34	16.2	18.5	0.24	0.01	—	26.3

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	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Total	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Total	—	—	—	—	—	—	—	—	—	—	—	86.4	0.00	86.4	8.64	0.00	—	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.1
Total	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.1

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.58	2.58
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	------	------

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)

Equipm ent 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)

Equipm ent 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)

Equipm ent 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)

Vegetati on	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
Site Preparation	Site Preparation	8/30/2025	9/13/2025	5.00	10.0	—
Grading	Grading	9/14/2025	10/26/2025	5.00	30.0	—
Building Construction	Building Construction	10/27/2025	12/21/2026	5.00	300	—
Paving	Paving	12/22/2026	1/19/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	1/20/2027	2/17/2027	5.00	20.0	—

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
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Back hoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
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	Tractors/Loaders/Back hoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45

Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.17	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	10.8	LDA,LDT1,LDT2
Grading	Vendor	—	7.17	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	66.6	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	19.8	7.17	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	10.8	LDA,LDT1,LDT2
Paving	Vendor	—	7.17	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT

Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	13.3	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.17	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	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	730,519	243,506	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	15.0	0.00	—
Grading	0.00	0.00	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.04

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	2.04	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	478	0.03	< 0.005
2026	0.00	478	0.03	< 0.005
2027	0.00	478	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	1,746	1,765	1,582	629,815	10,203	10,311	9,241	3,679,663

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)
730518.75	243,506	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	1,623,263	406	0.0330	0.0040	3,126,687

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	7,384,872	36,578,225

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	160	—

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
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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
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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
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5.16.2. Process Boilers

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

Equipment Type	Fuel Type
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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
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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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	21.3	annual days of extreme heat
Extreme Precipitation	1.85	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	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	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	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	70.3
AQ-PM	57.6
AQ-DPM	94.7
Drinking Water	97.8
Lead Risk Housing	90.3
Pesticides	0.00
Toxic Releases	43.9
Traffic	23.6
Effect Indicators	—
CleanUp Sites	85.9
Groundwater	78.6
Haz Waste Facilities/Generators	51.7
Impaired Water Bodies	72.2
Solid Waste	59.2
Sensitive Population	—
Asthma	91.6
Cardio-vascular	74.1
Low Birth Weights	32.8

Socioeconomic Factor Indicators	—
Education	69.9
Housing	87.2
Linguistic	37.0
Poverty	92.3
Unemployment	95.0

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	12.92185294
Employed	0.744257667
Median HI	2.592069806
Education	—
Bachelor's or higher	22.22507378
High school enrollment	100
Preschool enrollment	13.25548569
Transportation	—
Auto Access	1.809316053
Active commuting	84.55023739
Social	—
2-parent households	15.23161812
Voting	4.529706147
Neighborhood	—
Alcohol availability	36.81509047
Park access	81.35506224
Retail density	93.91761838

Supermarket access	36.84075452
Tree canopy	87.64275632
Housing	—
Homeownership	6.069549596
Housing habitability	41.46028487
Low-inc homeowner severe housing cost burden	93.25035288
Low-inc renter severe housing cost burden	63.89067112
Uncrowded housing	37.03323495
Health Outcomes	—
Insured adults	27.96099063
Arthritis	14.6
Asthma ER Admissions	11.9
High Blood Pressure	13.8
Cancer (excluding skin)	38.7
Asthma	13.4
Coronary Heart Disease	6.8
Chronic Obstructive Pulmonary Disease	3.4
Diagnosed Diabetes	30.7
Life Expectancy at Birth	0.6
Cognitively Disabled	0.8
Physically Disabled	1.1
Heart Attack ER Admissions	9.0
Mental Health Not Good	14.9
Chronic Kidney Disease	14.8
Obesity	10.6
Pedestrian Injuries	99.6
Physical Health Not Good	16.1
Stroke	10.1

Health Risk Behaviors	—
Binge Drinking	25.3
Current Smoker	6.0
No Leisure Time for Physical Activity	24.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	47.4
Elderly	29.3
English Speaking	68.5
Foreign-born	6.7
Outdoor Workers	11.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	31.4
Traffic Density	23.5
Traffic Access	0.0
Other Indices	—
Hardship	85.3
Other Decision Support	—
2016 Voting	10.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	94.0
Healthy Places Index Score for Project Location (b)	1.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
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
Land Use	185 homes within 19.95 acres, as provided in the Project Description.
Construction: Construction Phases	No demolition.
Operations: Hearths	No hearths.

APPENDIX B: BIOLOGICAL RECORDS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

10/31/2024 19:40:31 UTC

Project Code: 2025-0013960

Project Name: Modesto Martin-Tivoli Subdivision

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0013960

Project Name: Modesto Martin-Tivoli Subdivision

Project Type: Residential Construction

Project Description: The project is a General Plan Amendment to change a land use in the already approved Tivoli Specific Plan from a mostly commercial use/zone to a residential use/zone.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.694452150000004,-120.95580320972239,14z>



Counties: Stanislaus County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Northwestern Pond Turtle <i>Actinemys marmorata</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot <i>Spea hammondi</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Steve McMurtry
Address: 1020 Suncast Lane, Suite 106
City: El Dorado Hills
State: CA
Zip: 95762
Email: smcmurtry@denovoplanning.com
Phone: 9165809818



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad(Riverbank (3712068) OR Waterford (3712067) OR Oakdale (3712077) OR Escalon (3712078) OR Brush Lake (3712151) OR Ceres (3712058) OR Denair (3712057) OR Avena (3712171) OR Salida (3712161))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American bumble bee <i>Bombus pensylvanicus</i>	IIHYM24260	None	None	G3G4	S2	
Antioch multilid wasp <i>Myrmosula pacifica</i>	IIHYM15010	None	None	GH	SH	
beaked clarkia <i>Clarkia rostrata</i>	PDONA050Y0	None	None	G2G3	S2S3	1B.3
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S2	SSC
cackling (=Aleutian Canada) goose <i>Branta hutchinsii leucopareia</i>	ABNJB05035	Delisted	None	G5T3	S3	WL
California tiger salamander - central California DPS <i>Ambystoma californiense pop. 1</i>	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Colusa grass <i>Neostapfia colusana</i>	PMPOA4C010	Threatened	Endangered	G1	S1	1B.1
Crotch's bumble bee <i>Bombus crotchii</i>	IIHYM24480	None	Candidate Endangered	G2	S2	
great blue heron <i>Ardea herodias</i>	ABNGA04010	None	None	G5	S4	
green sturgeon - southern DPS <i>Acipenser medirostris pop. 1</i>	AFCAA01031	Threatened	None	G2T1	S1	SSC
Greene's tuctoria <i>Tuctoria greenei</i>	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
hardhead <i>Mylopharodon conocephalus</i>	AFCJB25010	None	None	G3	S3	SSC
heartscale <i>Atriplex cordulata var. cordulata</i>	PDCHE040B0	None	None	G3T2	S2	1B.2
hoary bat <i>Lasiurus cinereus</i>	AMACC05032	None	None	G3G4	S4	
legenere <i>Legenere limosa</i>	PDCAM0C010	None	None	G2	S2	1B.1
moestan blister beetle <i>Lytta moesta</i>	IICOL4C020	None	None	G2	S2	
Northern California legless lizard <i>Anniella pulchra</i>	ARACC01020	None	None	G3	S2S3	SSC
Northern Hardpan Vernal Pool <i>Northern Hardpan Vernal Pool</i>	CTT44110CA	None	None	G3	S3.1	
northwestern pond turtle <i>Actinemys marmorata</i>	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
obscure bumble bee <i>Bombus caliginosus</i>	IIHYM24380	None	None	G2G3	S1S2	
prairie wedge grass <i>Sphenopholis obtusata</i>	PMPOA5T030	None	None	G5	S2	2B.2
San Joaquin Valley giant flower-loving fly <i>Rhaphiomidas trochilus</i>	IIDIP05010	None	None	G1	S1	
San Joaquin Valley Orcutt grass <i>Orcuttia inaequalis</i>	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
snowy egret <i>Egretta thula</i>	ABNGA06030	None	None	G5	S4	
steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i> pop. 11	AFCHA0209K	Threatened	None	G5T2Q	S2	SSC
subtle orache <i>Atriplex subtilis</i>	PDCHE042T0	None	None	G1	S1	1B.2
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S4	
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010	None	None	G4	S2	SSC
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	ICBRA10010	Endangered	None	G3	S3	
western bumble bee <i>Bombus occidentalis</i>	IIHYM24252	None	Candidate Endangered	G3	S1	
western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011	None	None	G4G5T4	S3S4	SSC
western red bat <i>Lasiurus frantzii</i>	AMACC05080	None	None	G4	S3	SSC
western ridged mussel <i>Gonidea angulata</i>	IMBIV19010	None	None	G3	S2	
yellow-breasted chat <i>Icteria virens</i>	ABPBX24010	None	None	G5	S4	SSC
Yuma myotis <i>Myotis yumanensis</i>	AMACC01020	None	None	G5	S4	

Record Count: 38








[CNPS Rare Plant Inventory](#)

Search Results

10 matches found. Click on scientific name for details

Search Criteria: [9-Quad](#) include [3712068:3712067:3712077:3712078:3712151:3712058:3712057:3712171:3712161]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
<u><i>Atriplex cordulata</i> var. <i>cordulata</i></u>	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	Yes	1988-01-01	 © 1994 Robert E. Preston, Ph.D.
<u><i>Atriplex subtilis</i></u>	subtle orache	Chenopodiaceae	annual herb	(Apr)Jun-Sep(Oct)	None	None	G1	S1	1B.2	Yes	1994-01-01	 © 2000 Robert E. Preston, Ph.D.
<u><i>Centromadia parryi</i> ssp. <i>rudis</i></u>	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen
<u><i>Clarkia rostrata</i></u>	beaked clarkia	Onagraceae	annual herb	Apr-May	None	None	G2G3	S2S3	1B.3	Yes	1974-01-01	No Photo Available
<u><i>Fritillaria agrestis</i></u>	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff
<u><i>Legenere limosa</i></u>	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Yes	1974-01-01	 ©2000 John Game

<u><i>Neostapfia colusana</i></u>	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Orcuttia inaequalis</i></u>	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Sphenopholis obtusata</i></u>	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
<u><i>Tuctoria greenei</i></u>	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	FE	CR	G1	S1	1B.1	Yes	1974-01-01	 ©2008 F. Gauna

Showing 1 to 10 of 10 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website <https://www.rareplants.cnps.org> [accessed 31 October 2024].

APPENDIX C: NOISE REPORT

Environmental Noise Assessment

Martin Residential Development

Modesto, California

BAC Job # 2024-133

Prepared For:

Florsheim Homes

John Pronoitis
1701 W. March Lane, Suite D
Stockton, CA 95207

Prepared By:

Bollard Acoustical Consultants, Inc.



Paul Bollard, President

October 31, 2024



Introduction

The Martin Property Subdivision (project) is located on the east side of Oakdale Road, south of Mable Avenue, in the City of Modesto, California. The project consists of the construction of residences on approximately 185 single-family residential lots. The project site is currently used for agricultural purposes (orchards). Existing land uses within the project vicinity include single-family residential uses to the west (on the opposite side of Oakdale Road), a veterinary hospital and large-lot single-family residences along the northern site boundary, and agricultural uses to the south and east. The project area with aerial imagery showing existing surrounding land uses is shown in Figure 1. The proposed project site plan is shown on Figure 2.

According to the City of Modesto, the property to the immediate south of the project site is planned for the development of future commercial and medium-density residential uses, although specific site plans for those developments were not available at this time this noise study was prepared. Commercial uses are reportedly also planned to the north of the project site, north of Mable Avenue. City of Modesto ordinance requires that commercial uses include appropriate noise mitigation to ensure that noise generated by the commercial use does not exceed City noise standards. So although the future commercial site developer is responsible for noise mitigation, this analysis includes a general assessment of commercial noise generation at the future commercial sites to the north and south.

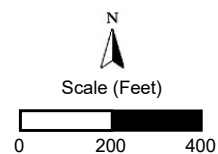
Due to the noise-sensitivity of the proposed residential uses, and the sensitivity of the existing residences to the immediate north and west of the project site, the City of Modesto has required a noise analysis to be prepared for the project. In response to that request, Bollard Acoustical Consultants, Inc. (BAC) was retained by the project developer (Florsheim Homes), to prepare this noise analysis. The specific purposes of this analysis are as follows:

1. To ensure that the project incorporates sufficient Oakdale Road traffic noise mitigation measures to achieve compliance with the City of Modesto standards for acceptable noise exposure at exterior (backyard), and interior spaces of new residential developments.
2. To ensure that noise generated by the project, including increased traffic noise on Oakdale Road, and noise generated during project construction, does not adversely affect existing residential uses to the north and west.
3. To evaluate the potential noise generation of future commercial uses to the south of the project site and recommend appropriate interior noise mitigation measures for the Martin Property development which would not be practical to implement during the commercial site development (i.e. upgraded bedroom window assemblies if needed).



Legend

- Project Boundary (Approximate)
- ▲ Long-Term Noise Measurement Locations

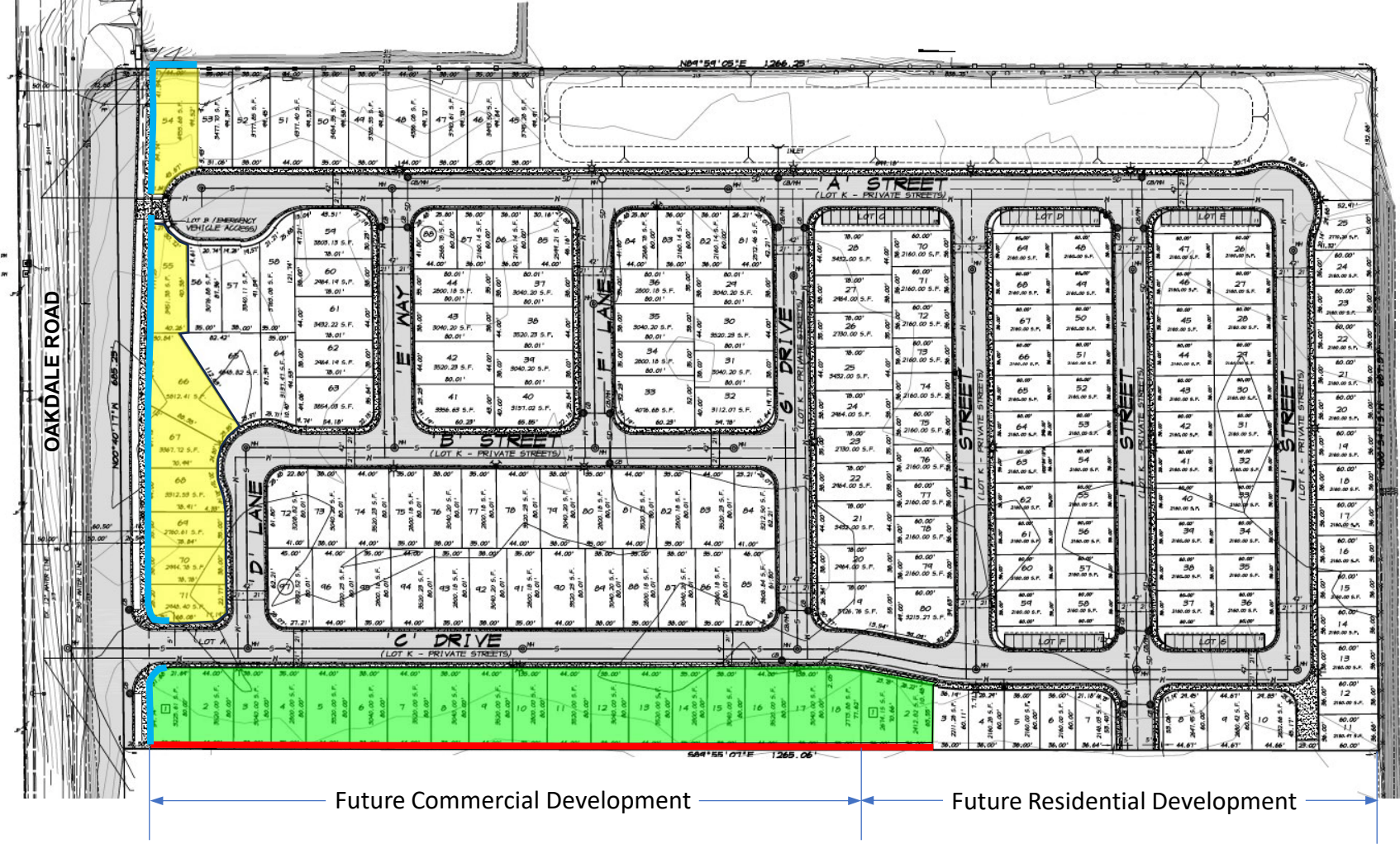


Project Area
Martin Property Residential Subdivision
Modesto, California

Figure 1



Existing Residential Uses



Legend

- Required 7-foot Tall Traffic Noise Barrier
- Recommended 8-Foot Tall Commercial Noise Barrier
- STC 32 Window Upgrades (North, South and West-Facing Upper-Floors Only)
- STC 32 Window Upgrades (West, South, and East-Facing Upper-Floors Only)

Site Plan

Martin Property Residential Subdivision
Modesto, California

Figure 2



Because future commercial development to the north of Mable Avenue would be separated from the project site by a buffer in excess of 300 feet, and noise generated by such uses would be buffered by the existing intervening residences and veterinarian hospital to the north of the project site (between the project site and any future commercial development to the north), commercial noise levels from that future northern commercial development are expected to be well below City noise standards, and an evaluation of potential noise impacts related to that future commercial development to the north is not considered to be warranted as part of this study.

Noise Fundamentals and Terminology

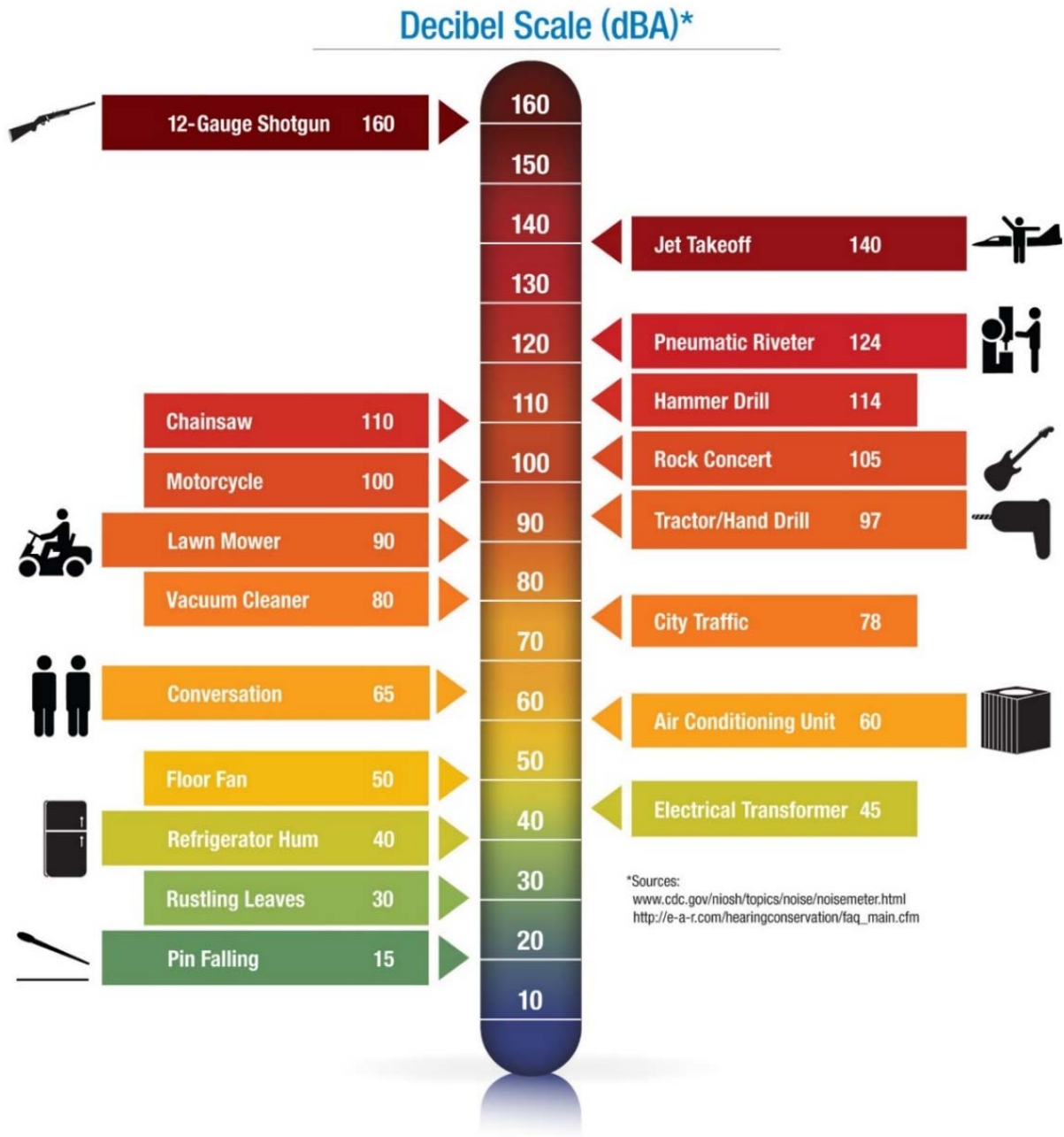
Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are designated as sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or Hertz (Hz). Definitions of acoustical terminology are provided in Appendix A.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. Noise levels associated with common noise sources are provided in Figure 3.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by filtering the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptors, day-night average level (L_{dn} or DNL) and the community noise equivalent level (CNEL) and shows very good correlation with community response to noise for the average person.

Figure 3
Noise Levels Associated with Common Noise Sources



Criteria for Acceptable Noise Exposure

City of Modesto General Plan

Chapter 7 of the City of Modesto General Plan (Environmental Resources, Open Space and Conservation), establishes an exterior noise level standard of 65 dBA L_{dn} (or DNL) at outdoor activity areas (rear yards) of single-family residential uses exposed to *transportation* noise sources (i.e., traffic on Oakdale Road). The intent of this standard is to provide an acceptable exterior noise environment for outdoor activities. The General Plan also utilizes an interior noise level standard of 45 dBA DNL or less within interior spaces of residential uses. The intent of this interior noise limit is to provide a suitable environment for indoor communication and sleep.

The General Plan also contains noise level standards for *non-transportation* noise sources, which would be applicable to future commercial development to the south. The General Plan's non-transportation noise level limits are provided in Table 1.

Table 1
Noise Exposure Thresholds – Non-Transportation Noise Sources

Noise Level Descriptor (dBA)	Citywide		Downtown	
	Daytime (7am – 10 pm)	Nighttime (10pm – 7am)	Daytime (7am – 10 pm)	Nighttime (10pm – 7am)
Hourly average, L_{eq}	55	45	60	50
Maximum level, L_{max}	75	65	80	70
-Each of the noise level standards shall be reduced by five (5) dBA for pure tone noises, noise consisting primarily of speech or music, or for recurring impulsive noises. Where measured ambient noise levels exceed the standards, the standards shall be increased to the ambient levels.				
-If the existing ambient noise level at the receiving use exceeds the thresholds of this table, then the noise level standards shall be increased to account for the ambient noise level.				

Source: City of Modesto Urban Area General Plan, Chapter 7, Table VII-3.

Existing Ambient Noise Environment at the Project Site

The existing ambient noise environment at the project site is defined primarily by traffic on Oakdale Road, and to a lesser extent by periodic agricultural activity. To quantify the existing ambient noise environment at the project site, BAC conducted long-term (72-hour) noise level measurements at two locations on the project site between September 7-9, 2024. The noise survey locations are shown on Figure 1, identified as sites LT-1 and LT-2. Photographs from the noise survey effort are provided in Appendix B.

Larson-Davis Laboratories (LDL) precision integrating sound level meters were used to complete the noise level measurement survey. The meters were calibrated immediately before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The ambient noise level survey

results are summarized in Table 2. The detailed results of the ambient noise survey are contained in Appendix C in tabular format and are provided graphically in Appendix D.

Table 2
Summary of Long-Term Noise Survey Measurement Results – July 26-27, 2022¹

Site Description ²	Date	DNL (dB)	Average Measured Hourly Noise Levels (dB)			
			Daytime ³		Nighttime ⁴	
			L _{eq}	L _{max}	L _{eq}	L _{max}
LT-1: Approximately 90 feet east of the effective existing Oakdale Road Centerline	9/7/24	67	63	82	59	77
	9/8/24	66	63	81	59	76
	9/9/24	67	64	83	60	80
	Average	67	63	82	60	78
LT-2: Northern site boundary, approximately approx. 300' south of Mable Avenue	9/7/24	52	48	63	45	59
	9/8/24	52	46	61	46	60
	9/9/24	53	48	64	46	59
	Average	52	47	63	46	59
¹ Detailed summaries of the noise monitoring results are provided in Appendices C and D. ² Long-term noise survey locations are shown on Figure 1. ³ Daytime hours: 7:00 a.m. to 10:00 p.m. ⁴ Nighttime hours: 10:00 p.m. to 7:00 a.m.						

Source: Bollard Acoustical Consultants, Inc. 2024.

Measurement site LT-1 was specifically selected to capture noise levels associated with traffic on Oakdale Road. Measurement site LT-2 was selected to be representative of the existing ambient noise environment at the nearby existing residences to the north.

As indicated in Table 2, measured day-night average noise levels at site LT-1, located adjacent to Oakdale Road, exceeded the City of Modesto General Plan exterior noise level standard of 65 dBA DNL applicable to single-family residential uses affected by transportation noise sources. The Table 2 data also indicate that average measured hourly average and maximum noise levels at site LT-2 were satisfactory relative to the Modesto noise level standards for non-transportation noise sources affecting noise-sensitive uses at the existing residences to the north.

Noise Impacts and Mitigation Measures

The following sections evaluate the potential noise impacts due to and upon development of the Martin Residential project in Modesto.

Impact 1: Increase in Traffic Noise Levels at Existing Residences Resulting from the Project

The proposed project would construct 185 single family residences. Assuming a trip generation rate of 10 daily trips per residence, the project would be expected to generate approximately 1,850 daily trips on the local roadway network. Using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108), the DNL generated by project traffic was computed to be approximately 57 dBA DNL at a distance of 90 feet from the centerline of Oakdale Road. Appendix E contains the FHWA Model inputs and results.

The 90 foot distance was utilized for the modelling of Oakdale Road traffic noise because 90 feet represents the distance from the existing roadway centerline to ambient noise survey location LT-1. As indicated above in Table 2, the measured DNL at Site LT-1 was 67 dBA DNL. Because existing traffic noise exposure was measured to be approximately 10 dBA above traffic noise levels which would be generated by the project, the increase in traffic noise exposure resulting from the project at existing residences located along Oakdale Road would be less than 1 dBA DNL. Because a change in noise levels of 3 dBA is generally considered to be the threshold of perception, the project-related increase of less than 1 dBA is expected to be imperceptible. As a result, ***this impact is considered to be less than Significant.***

Mitigation for Impact 1: *None Required*

Impact 2: Project Construction Noise at Existing Residences

During Project construction, heavy equipment would be used for grading, excavation, paving, and building construction. These activities would increase ambient noise levels in the immediate Project vicinity. Construction noise levels generated at the Project site would vary depending on equipment types and amount of equipment in use at any time, the location where that equipment is operating, and how well the equipment is maintained. Noise exposure at existing, off-site, sensitive receptors would also vary depending on the proximity of equipment activities to the receptor, the degree of shielding present between the construction equipment and receptor (i.e., soundwalls), etc. Table 3 provides the range of maximum noise levels for equipment commonly used in general construction Projects at full-power operation at a distance of 50 feet. Not all of these construction activities would be required of this Project.

Table 3
Maximum Reference Noise Levels for Common Construction Equipment

Equipment Description	Maximum Noise Level at 50 Feet (dBA)
Air compressor	80
Backhoe	80
Ballast tamper	83
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, mobile	83
Dozer	85
Generator	82
Grader	85
Impact wrench	85
Loader	80
Paver	85
Pneumatic tools	85
Pump	77
Saw	76
Scraper	85
Shovel	82
Spike driver	77
Tie cutter	84
Tie inserter	85
Truck	84

Source: Federal Transit Administration Noise and Vibration Impact Assessment Manual, Table 7-1 (2018)

The nearest sensitive receptors (existing residences) are located approximately 100 to the north and approximately 150 feet to the west of the Project site where construction activities would occur. Based on the equipment noise levels in Table 3, maximum construction equipment noise levels are predicted to range from approximately 75-80 dBA Lmax at the nearest existing residences to the Project site.

As indicated in Table 2, existing maximum daytime noise exposure was measured to be approximately 82 dBA at receptors adjacent to Oakdale Road and 63 dBA at residences to the north of the project site. As a result, substantial increases in maximum ambient noise levels are not expected at existing residences located on the west side of Oakdale Road but short-term increases in maximum noise exposure at the existing residences to the north could be substantial. As a result, ***this impact is considered potentially significant.***

Mitigation for Impact 2:

The following measures shall be incorporated into the Project on-site construction operations:

- Noise-generating construction activities within the Project area shall adhere to the time restrictions of the City of Modesto to the maximum extent feasible.

- All noise-producing Project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the Project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of Project activity.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from the existing residences to the north.
- Project area and site access road speed limits shall be established and enforced during the construction period.
- In the event that unusual circumstances or emergencies prevent certain Project construction activities from complying with the Modesto requirements, then a noise control plan shall be developed to ensure that sufficient mitigation is implemented during Project construction to ensure adverse noise impacts are avoided.
- Notification of construction hours and durations shall be provided to the existing residences to the north of the project site.

Significance of Impact 2 after Mitigation: *Less than Significant*

Impact 3: Future Oakdale Road Traffic Noise Exposure at Proposed Residences

To predict future Oakdale Road traffic noise exposure at the project site, BAC utilized the long-term ambient data from site LT-1 collected between September 7-9, 2024, and adjusted that data to reflect future traffic conditions and distances from the future roadway centerline to the nearest residential backyards and building facades within the project site.

Future traffic volumes on the Oakdale Road were assumed to double in the future, representing a 100% increase over time. This increase results in a 3 dBA DNL future increase in traffic noise levels relative to existing noise levels. Future Oakdale Road traffic noise levels were projected to the nearest proposed outdoor activity areas (i.e., backyards) and building facades to the roadway based on a 4.5 dBA decrease per doubling of distance from the roadway centerline. The results of the traffic noise projections analysis are provided in Table 4.

Table 4
Predicted Future Exterior Traffic Noise Levels at the Project Site¹

Roadway	Location	Offset ²	Predicted Noise Level, DNL (dBA)
Oakdale Road	Nearest backyards		70
	Nearest first-floor facades		70
	Nearest upper-floor facades	+2	72
¹ Predicted future Oakdale Road traffic noise levels include an adjustment of +3 dBA to account for a 100% increase in future traffic volumes on Oakdale Road.			
² An offset of +2 dBA was applied at upper-floor facades due to reduced ground absorption at elevated positions.			

Source: Bollard Acoustical Consultants, Inc. 2024.

As indicated in Table 4, future Oakdale Road traffic noise levels at the outdoor activity areas (i.e., backyards) proposed nearest to the roadway are predicted to exceed the City of Modesto General Plan's normally acceptable exterior noise level standard of 65 dBA DNL. As a result, noise impacts of future Oakdale Road traffic noise exposure on proposed backyards of this development **are considered significant**.

Table 4 also indicates that Future Oakdale Road traffic noise exposure at first and second-floor facades of residences proposed adjacent to that roadway are predicted to be 70 and 72 dBA DNL, respectively. Standard residential construction (stucco siding, STC-27 windows, door weatherstripping, exterior wall insulation, composition plywood roof), typically results in an exterior to interior noise reduction of approximately 25 dBA with windows closed and approximately 15 dBA with windows open. Therefore, provided future traffic noise levels do not exceed 70 dBA DNL at exterior building facades, standard construction practices should be adequate to ensure compliance with the City of Modesto General Plan 45 dBA DNL noise level standard within residences of the development.

Because first-floor building façade noise exposure is not predicted to exceed 70 dBA DNL, standard construction practices would be adequate to achieve compliance with the City's interior noise standard within first floor rooms. However, because 2nd floor facade noise exposure is predicted to exceed 70 dBA DNL, future traffic noise exposure within the second-floor rooms of residences constructed adjacent to Oakdale Road could exceed the City of Modesto 45 dBA DNL interior noise standard. As a result, noise impacts of future Oakdale Road traffic noise exposure within 2nd floor rooms proposed adjacent to Oakdale Road **are considered potentially significant**.

Mitigation for Impact 3:

The following measures shall be incorporated into the design:

- A solid noise barrier measuring 7 feet in height relative to backyard elevation should be constructed adjacent to the residences abutting Oakdale Road. The noise barrier locations are shown on Figure 2.
- The traffic noise barrier could take the form of masonry wall, earthen berm, or a combination of the two. Other materials may be acceptable but should be reviewed by an acoustical consultant prior to use.
- All north, west, and south-facing second-floor windows of residences proposed adjacent to Oakdale Road shall have a minimum Sound Transmission Class (STC) rating of 32. Figure 2 shows the residences where this mitigation measure would apply.
- Air conditioning shall be provided for all residences of this development to allow occupants to close doors and windows as desired for acoustic isolation.

Significance of Impact 3 after Mitigation: *Less than Significant*

Impact 4: Noise Generated by Future Commercial Uses to the South at Proposed Residences

Future commercial development is reportedly anticipated on the parcel to the immediate south of the Martin Residential development site. Although design of the commercial site was not available at the time this noise analysis was prepared, typical activities associated with commercial developments include truck deliveries, parking lot activity, restaurant drive-through lanes, mechanical equipment etc. Because the specific distances to the various noise sources cannot be determined prior to completion of the development plans for the commercial site, it is not feasible to accurately predict commercial noise exposure at the project site. In addition, the commercial site developer will be required to implement appropriate noise mitigation measures at the time of the commercial site is being developed. Such measures could include the construction of a solid noise barrier adjacent to the commercial site, restrictions on hours of truck deliveries, shielding of mechanical equipment, etc.

Because it would not be practical for the commercial site developer to upgrade the windows of the residences constructed within the Martin residential development after the residences have been constructed and occupied, BAC recommends that all second-floor residential windows of residences constructed adjacent to the future commercial site from which the commercial site would be visible be upgraded at this time. Specifically, the following measure is recommended:

- All west, south and east-facing second-floor windows of residences proposed adjacent to the southern site boundary where commercial development would occur in the future (plus 2 lots to the east), shall have a minimum Sound Transmission Class (STC) rating of 32. Figure 2 shows the residences where this mitigation measure would apply.

With this measure, future interior noise levels within the second-floor habitable spaces of the Martin Residential Project are predicted to be satisfactory relative to City of Modesto noise standards. In addition, the future commercial developer will be responsible for implementing such noise mitigation measures as would be necessary to ensure compliance with the City's noise standards. With these measures, this impact would be considered ***Less than Significant***.

Conclusions

This analysis concludes that, with practical and feasible noise mitigation measures, noise impacts due to and upon development of the Martin Property in the City of Modesto will be mitigated to less than significant levels and achieve compliance with Modesto General Plan noise requirements. These conclusions are based on the project site plans presented in this report, the BAC noise survey data, and the analysis of construction, traffic, and commercial noise levels contained herein. Deviations from the above-mentioned resources could noise levels to differ from those predicted in this assessment. In addition, Bollard Acoustical Consultants, Inc. is not responsible for degradation in acoustic performance of the residential construction due to poor construction practices, failure to comply with applicable building code requirements, or for failure to adhere to the minimum building practices cited in this report.

This concludes BAC's environmental noise assessment for the proposed Martin Property Subdivision in Modesto, California. Please contact BAC at (530) 537-2328 or paulb@bacnoise.com with any questions regarding this assessment.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
IIC	Impact Insulation Class (IIC): A single-number representation of a floor/ceiling partition's impact generated noise insulation performance. The field-measured version of this number is the FIIC.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT₆₀	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
STC	Sound Transmission Class (STC): A single-number representation of a partition's noise insulation performance. This number is based on laboratory-measured, 16-band (1/3-octave) transmission loss (TL) data of the subject partition. The field-measured version of this number is the FSTC.





Legend

- A** Site LT-1 Facing West
- B** Site LT-2 Facing East
- C** Site LT-2 Facing North

Noise Survey Photographs
Martin Project Residential Subdivision
Modesto, California

Appendix B



Appendix C-1
Long-Term Ambient Noise Monitoring Results, LT-1
Martin Property Residential Subdivision - Modesto, California
Saturday, September 7, 2024

Hour	Leq	Lmax	L50	L90
12:00 AM	60	72	56	45
1:00 AM	57	80	47	40
2:00 AM	55	75	43	39
3:00 AM	57	77	46	39
4:00 AM	56	75	45	38
5:00 AM	60	75	53	42
6:00 AM	63	79	60	47
7:00 AM	63	77	61	50
8:00 AM	64	83	61	52
9:00 AM	62	75	61	53
10:00 AM	63	81	61	54
11:00 AM	64	87	61	54
12:00 PM	63	79	61	54
1:00 PM	63	82	61	54
2:00 PM	65	91	61	54
3:00 PM	63	78	61	53
4:00 PM	63	76	61	53
5:00 PM	65	90	62	53
6:00 PM	64	86	62	54
7:00 PM	63	79	62	53
8:00 PM	63	82	61	51
9:00 PM	63	86	60	49
10:00 PM	62	83	59	48
11:00 PM	60	76	56	46

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65	62	63	63	55	59
Lmax (Maximum)	91	75	82	83	72	77
L50 (Median)	62	60	61	60	43	52
L90 (Background)	54	49	53	48	38	43

Computed DNL, dB	67
% Daytime Energy	81%
% Nighttime Energy	19%

GPS Coordinates
37°41'41.57"N
120°57'28.05"W

Appendix C-2
Long-Term Ambient Noise Monitoring Results, LT-1
Martin Property Residential Subdivision - Modesto, California
Sunday, September 8, 2024

Hour	Leq	Lmax	L50	L90
12:00 AM	59	76	53	42
1:00 AM	57	77	48	39
2:00 AM	56	76	45	39
3:00 AM	55	72	45	39
4:00 AM	56	71	45	37
5:00 AM	59	76	52	41
6:00 AM	60	74	56	44
7:00 AM	60	76	57	46
8:00 AM	62	76	61	50
9:00 AM	63	87	60	51
10:00 AM	63	85	61	54
11:00 AM	64	81	61	54
12:00 PM	63	76	61	53
1:00 PM	62	85	60	52
2:00 PM	62	79	60	51
3:00 PM	62	80	61	50
4:00 PM	64	91	60	51
5:00 PM	63	79	61	52
6:00 PM	64	84	61	52
7:00 PM	65	79	64	55
8:00 PM	64	81	62	53
9:00 PM	63	79	62	50
10:00 PM	65	90	58	46
11:00 PM	58	75	52	43

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65	60	63	65	55	59
Lmax (Maximum)	91	76	81	90	71	76
L50 (Median)	64	57	61	58	45	50
L90 (Background)	55	46	52	46	37	41

Computed DNL, dB	66
% Daytime Energy	80%
% Nighttime Energy	20%

GPS Coordinates
37°41'41.57"N
120°57'28.05"W

Appendix C-3
Long-Term Ambient Noise Monitoring Results, LT-1
Martin Property Residential Subdivision - Modesto, California
Monday, September 9, 2024

Hour	Leq	Lmax	L50	L90
12:00 AM	57	84	48	40
1:00 AM	57	81	45	40
2:00 AM	55	69	45	40
3:00 AM	59	81	49	41
4:00 AM	61	83	56	45
5:00 AM	63	80	60	49
6:00 AM	64	83	62	54
7:00 AM	64	85	62	55
8:00 AM	65	89	61	55
9:00 AM	63	80	61	52
10:00 AM	63	77	61	53
11:00 AM	64	90	61	53
12:00 PM	64	88	61	54
1:00 PM	63	80	62	54
2:00 PM	63	77	61	54
3:00 PM	64	78	63	56
4:00 PM	64	76	63	55
5:00 PM	64	82	63	55
6:00 PM	64	85	62	52
7:00 PM	63	87	61	51
8:00 PM	65	92	61	49
9:00 PM	61	76	58	47
10:00 PM	61	84	54	44
11:00 PM	58	73	51	42

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65	61	64	64	55	60
Lmax (Maximum)	92	76	83	84	69	80
L50 (Median)	63	58	61	62	45	52
L90 (Background)	56	47	53	54	40	44

Computed DNL, dB	67
% Daytime Energy	77%
% Nighttime Energy	23%

GPS Coordinates
37°41'41.57"N
120°57'28.05"W

Appendix C-4
Long-Term Ambient Noise Monitoring Results, LT-2
Martin Property Residential Subdivision - Modesto, California
Saturday, September 7, 2024

Hour	Leq	Lmax	L50	L90
12:00 AM	46	56	45	41
1:00 AM	43	63	41	36
2:00 AM	41	52	39	35
3:00 AM	43	57	41	35
4:00 AM	42	57	40	35
5:00 AM	45	57	43	39
6:00 AM	48	59	47	42
7:00 AM	49	63	48	45
8:00 AM	50	65	48	46
9:00 AM	47	67	46	42
10:00 AM	45	66	44	41
11:00 AM	47	63	45	42
12:00 PM	45	60	43	40
1:00 PM	45	57	45	42
2:00 PM	45	66	43	40
3:00 PM	45	61	43	39
4:00 PM	45	56	44	40
5:00 PM	47	69	45	42
6:00 PM	48	59	47	44
7:00 PM	50	67	49	46
8:00 PM	49	63	48	46
9:00 PM	50	67	48	45
10:00 PM	48	62	47	44
11:00 PM	47	65	46	42

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	50	45	48	48	41	45
Lmax (Maximum)	69	56	63	65	52	59
L50 (Median)	49	43	46	47	39	43
L90 (Background)	46	39	43	44	35	39

Computed DNL, dB	52
% Daytime Energy	74%
% Nighttime Energy	26%

GPS Coordinates
37°41'43.60"N
120°57'18.39"W

Appendix C-5
Long-Term Ambient Noise Monitoring Results, LT-2
Martin Property Residential Subdivision - Modesto, California
Sunday, September 8, 2024

Hour	Leq	Lmax	L50	L90
12:00 AM	48	65	44	39
1:00 AM	44	57	42	36
2:00 AM	43	60	40	35
3:00 AM	42	60	41	36
4:00 AM	41	56	39	34
5:00 AM	44	53	43	38
6:00 AM	46	57	46	42
7:00 AM	46	58	45	42
8:00 AM	48	64	45	42
9:00 AM	46	62	44	41
10:00 AM	48	71	45	41
11:00 AM	46	59	45	41
12:00 PM	45	63	44	41
1:00 PM	42	52	41	36
2:00 PM	39	57	37	34
3:00 PM	41	61	37	34
4:00 PM	42	64	38	35
5:00 PM	46	61	45	41
6:00 PM	48	61	47	43
7:00 PM	48	59	47	44
8:00 PM	50	69	48	45
9:00 PM	48	59	47	44
10:00 PM	50	73	46	43
11:00 PM	46	60	45	40

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	50	39	46	50	41	46
Lmax (Maximum)	71	52	61	73	53	60
L50 (Median)	48	37	44	46	39	43
L90 (Background)	45	34	40	43	34	38

Computed DNL, dB	52
% Daytime Energy	64%
% Nighttime Energy	36%

GPS Coordinates
37°41'43.60"N
120°57'18.39"W

Appendix C-6
Long-Term Ambient Noise Monitoring Results, LT-2
Martin Property Residential Subdivision - Modesto, California
Monday, September 9, 2024

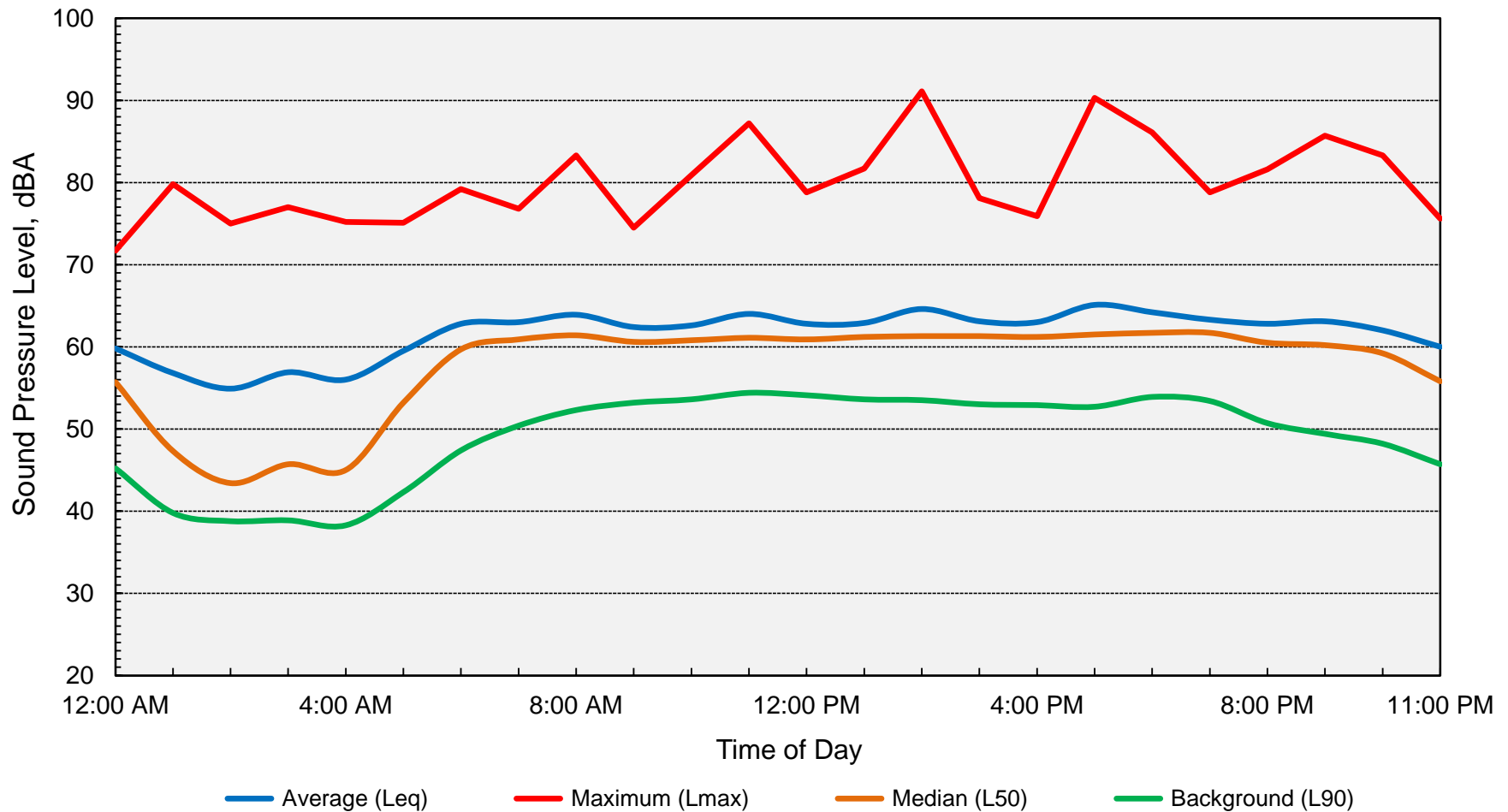
Hour	Leq	Lmax	L50	L90
12:00 AM	44	58	42	37
1:00 AM	42	54	40	37
2:00 AM	41	52	40	36
3:00 AM	45	61	42	38
4:00 AM	46	61	45	41
5:00 AM	49	64	47	44
6:00 AM	50	59	49	46
7:00 AM	51	72	50	47
8:00 AM	50	64	48	46
9:00 AM	48	67	46	44
10:00 AM	47	61	46	43
11:00 AM	48	64	45	42
12:00 PM	45	66	43	41
1:00 PM	44	65	43	39
2:00 PM	43	57	42	39
3:00 PM	47	65	46	42
4:00 PM	47	58	47	43
5:00 PM	49	66	48	44
6:00 PM	49	61	48	45
7:00 PM	49	64	48	45
8:00 PM	51	73	48	45
9:00 PM	47	58	47	44
10:00 PM	47	66	45	42
11:00 PM	44	58	43	39

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	51	43	48	50	41	46
Lmax (Maximum)	73	57	64	66	52	59
L50 (Median)	50	42	46	49	40	44
L90 (Background)	47	39	43	46	36	40

Computed DNL, dB	53
% Daytime Energy	73%
% Nighttime Energy	27%

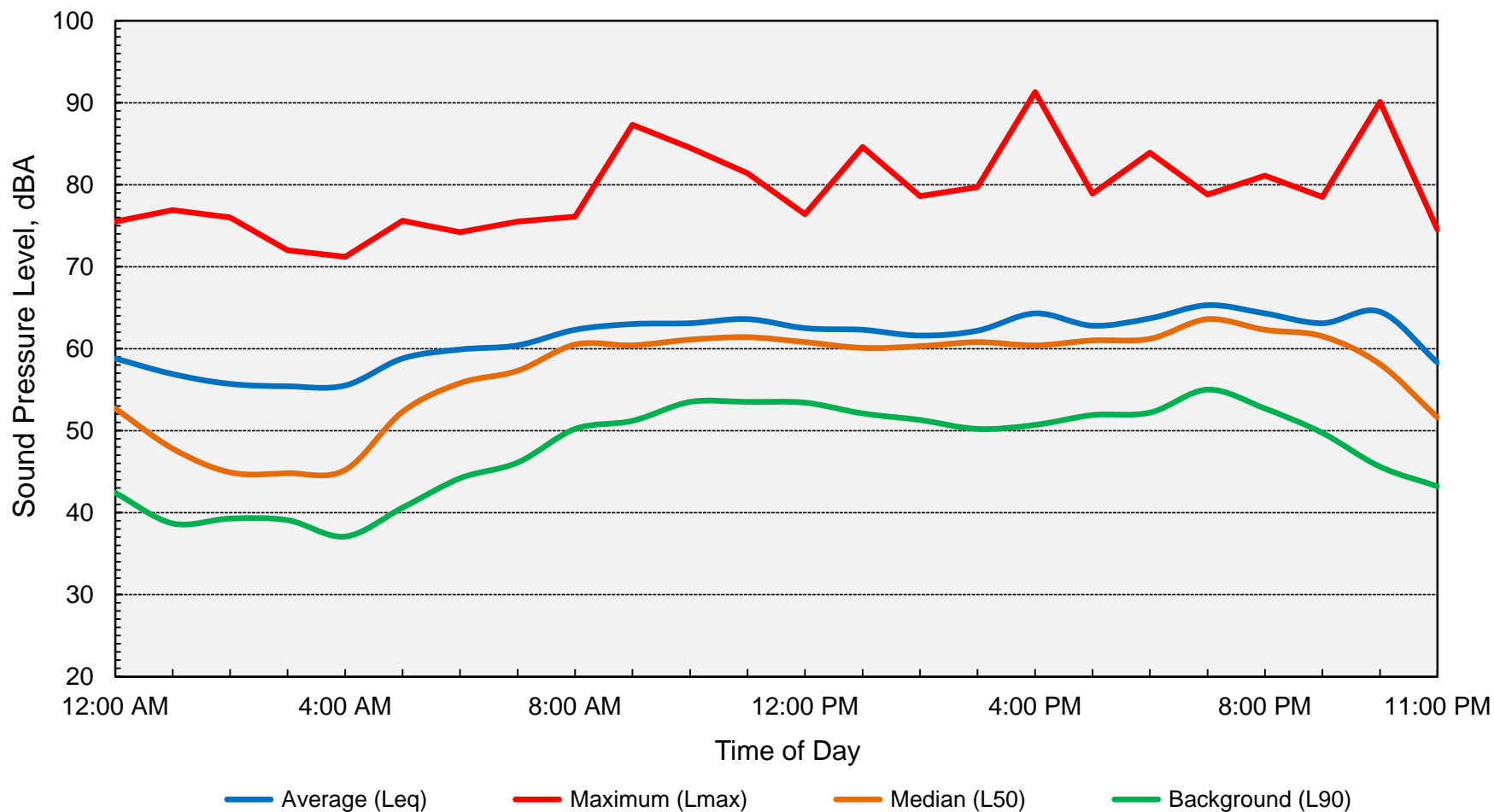
GPS Coordinates
37°41'43.60"N
120°57'18.39"W

Appendix D-1
Long-Term Ambient Noise Monitoring Results, LT-1
Martin Property Residential Subdivision - Modesto, California
Saturday, September 7, 2024



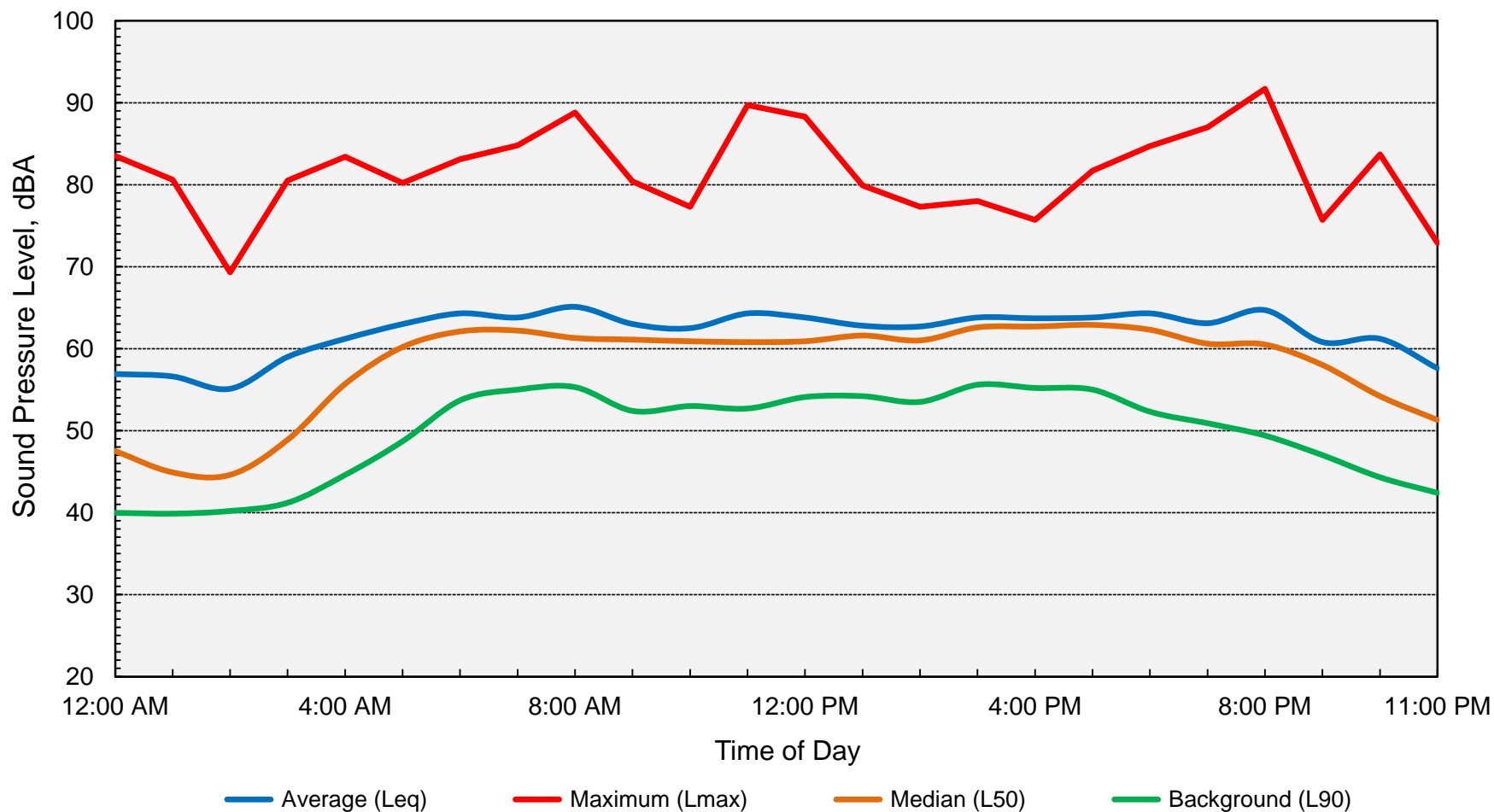
Computed DNL = 67 dB

Appendix D-2
Long-Term Ambient Noise Monitoring Results, LT-1
Martin Property Residential Subdivision - Modesto, California
Sunday, September 8, 2024



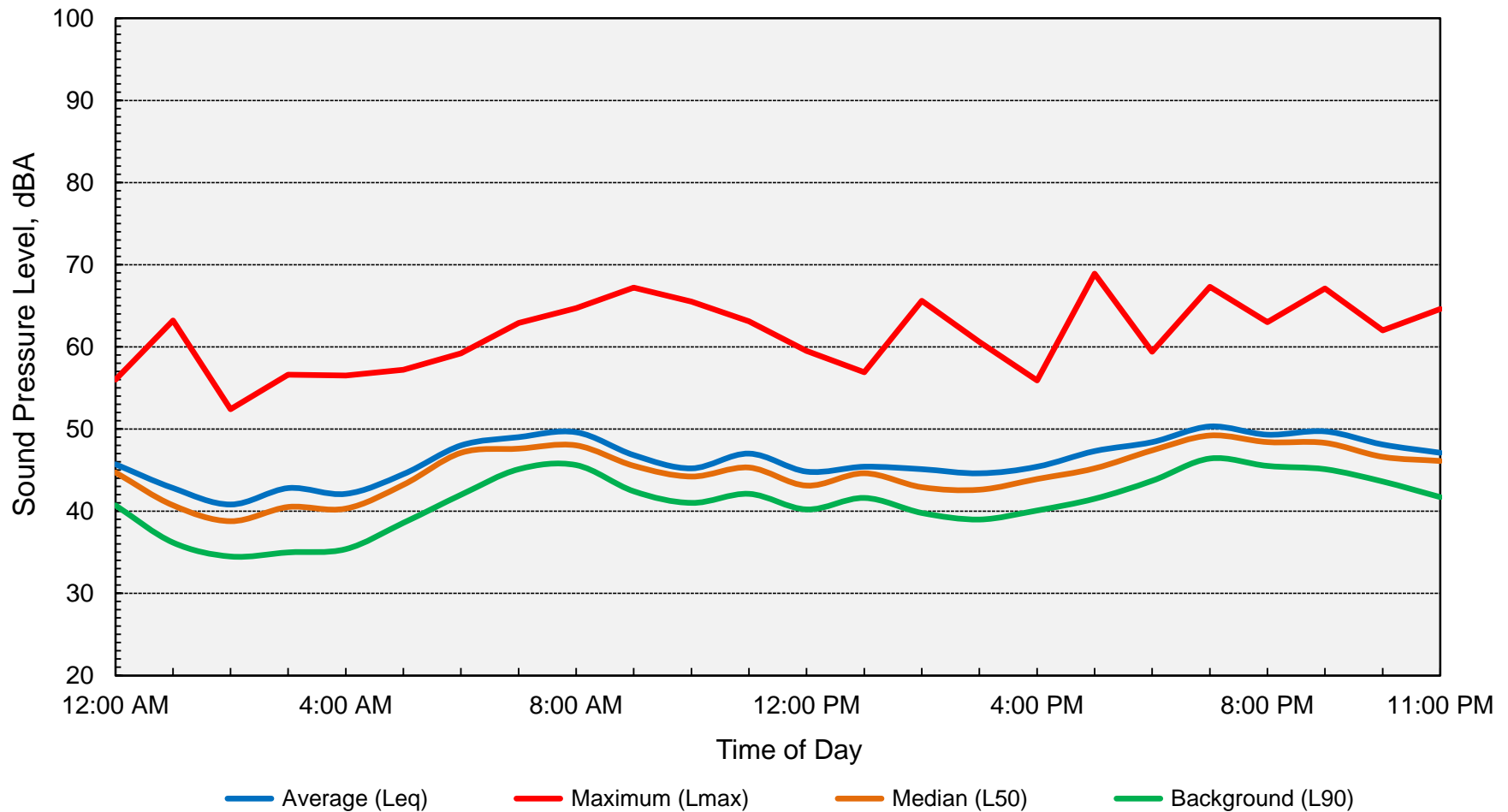
Computed DNL = 66 dB

Appendix D-3
Long-Term Ambient Noise Monitoring Results, LT-1
Martin Property Residential Subdivision - Modesto, California
Monday, September 9, 2024



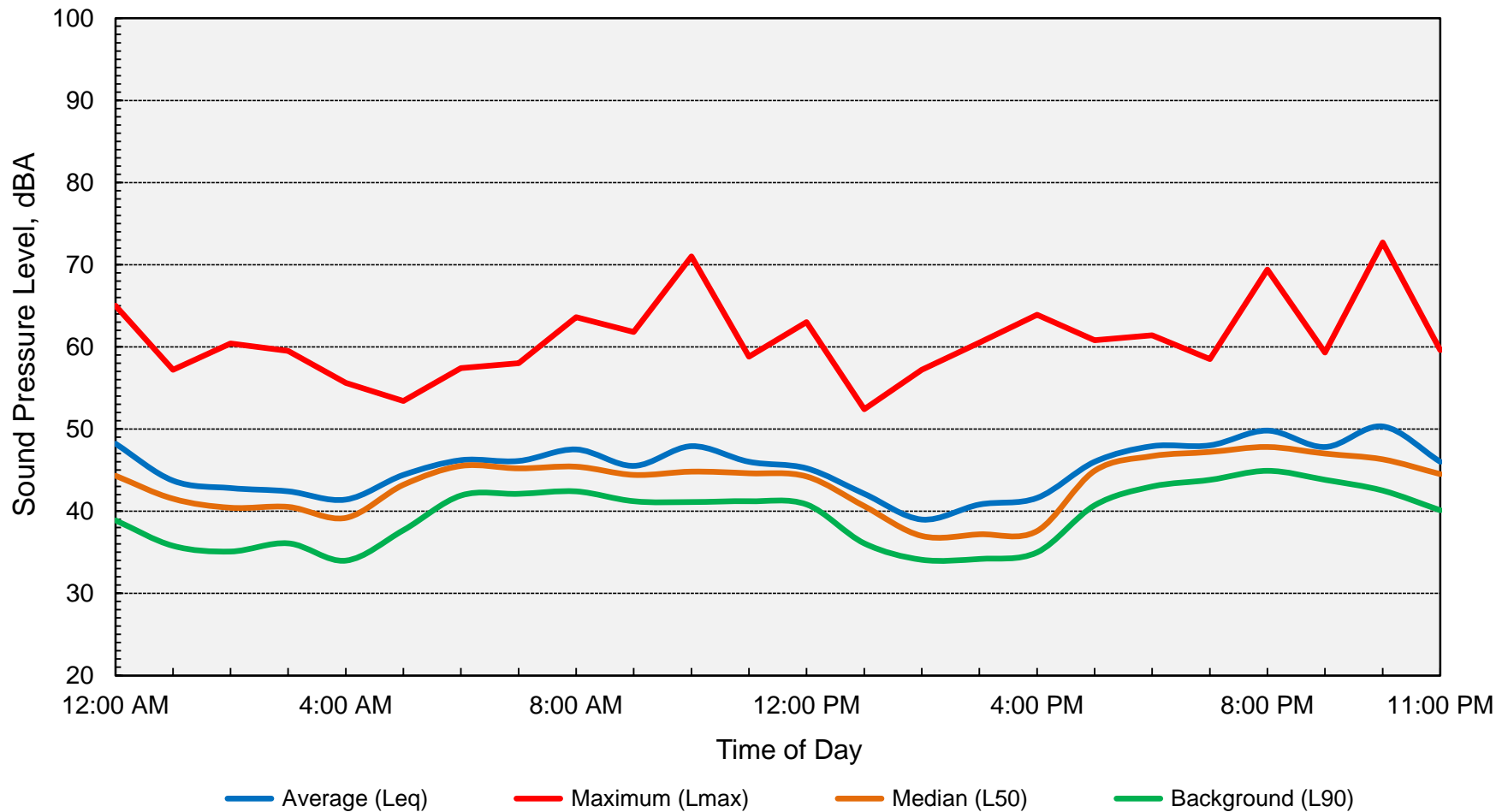
Computed DNL = 67 dB

Appendix D-4
Long-Term Ambient Noise Monitoring Results, LT-2
Martin Property Residential Subdivision - Modesto, California
Saturday, September 7, 2024



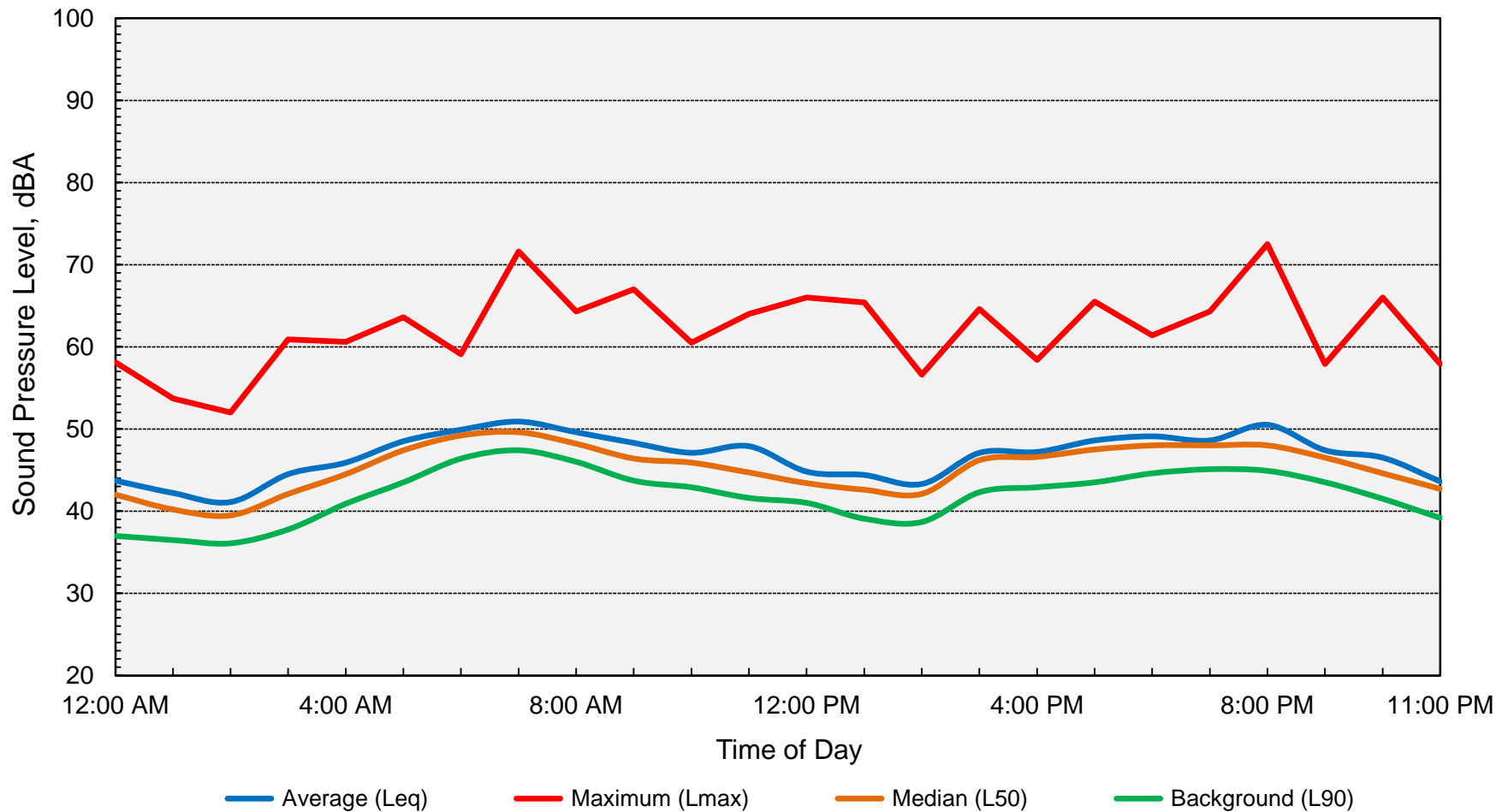
Computed DNL = 52 dB

Appendix D-5
Long-Term Ambient Noise Monitoring Results, LT-2
Martin Property Residential Subdivision - Modesto, California
Sunday, September 8, 2024



Computed DNL = 52 dB

Appendix D-6
Long-Term Ambient Noise Monitoring Results, LT-2
Martin Property Residential Subdivision - Modesto, California
Monday, September 9, 2024



Computed DNL = 53 dB

Appendix E
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet for Project Generated Traffic

Project Information:

Job Number: 2024-133
 Project Name: Martin Project Traffic Only
 Roadway Name: Oakdale Road

Traffic Data:

Year: Existing and Future - Project Only
 Average Daily Traffic Volume: 1,850
 Percent Daytime Traffic: 80
 Percent Nighttime Traffic: 20
 Percent Medium Trucks (2 axle): 0.5
 Percent Heavy Trucks (3+ axle): 0.5
 Assumed Vehicle Speed (mph): 50
 Intervening Ground Type (hard/soft): **Soft**

Traffic Noise Levels:

				----- DNL (dB) -----			
Location	Description	Distance	Offset (dB)	Autos	Medium Trucks	Heavy Trucks	Total
1	Noise Measurement Distance	90		57	42	46	57

Traffic Noise Contours (No Calibration Offset):

DNL Contour (dB)	Distance from Centerline (ft)
75	6
70	13
65	28
60	61

Notes: Project-generated Average Daily Traffic Volume was estimated by assuming 10 trips per lot and 185 proposed lots for a total daily traffic volume generated by the project of 1,850 trips per day. Day night split was assumed to be similar to existing day night split for Oakdale Road, which was computed from ambient noise surveys to be approximately 80%/20%. Truck usage generated by the project was assumed to be very low (1%), and vehicle speed was assumed to be 5 mph above posted speed limit, or 50 mph.

APPENDIX D: TRANSPORTATION IMPACT ANALYSIS REPORT

DRAFT

Martin Property

Transportation Impact Analysis

Prepared for:
Florsheim Homes
City of Modesto

October 14, 2024

WC24-4117.00

FEHR  PEERS

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Appendices

Appendix A: Site Plan

Appendix B: Traffic Counts

Appendix C: Technical Calculations

1. Introduction

This report documents the transportation impact analysis completed for the proposed Martin Property project (the proposed project). The proposed project includes subdivision of an approximately 20-acre lot to allow construction of 185 single-family homes, with 11 common areas lots. The proposed project site is located east of Oakdale Road, between Sylvan Avenue and Mable Avenue, in Modesto, California. This report is separated into two analyses – one analysis intended to disclose any potential transportation related environmental impacts in compliance with the California Environmental Quality Act (CEQA), and one analysis intended to identify any potential impacts to the local transportation network.

For the CEQA purposes, vehicle miles traveled (VMT) is the primary travel-related metric used to identify the proposed project's significant transportation impacts; bicycle, pedestrian, and transit network, and safety are also evaluated. For the operational analysis, the level of service (LOS) of nearby local street intersections which may be impacted by the proposed project is evaluated to assess the proposed project's effect on intersection operations.

This chapter describes the proposed project, the study area, analysis scenarios, policy background and the traffic operations analysis framework.

1.1 Project Description

The proposed project includes the development of 185 single-family homes and 11 common area lots on an existing 20-acre parcel located east of Oakdale Road, between Sylvan Avenue and Mable Avenue. The proposed project site is in the Tivoli Specific Plan (TSP) planning area. The TSP was approved by the City of Modesto on February 26, 2008. Through the TSP and its associated Environmental Impact Report (EIR), the proposed project site is currently approved for regional serving commercial (RSC), very low density residential (VLDR), and medium high density residential (MHDR). The project proposes to rezone the property to medium density residential (MDR); therefore, removing the regional serving commercial and very low density residential designations. Access is proposed via one entrance on Oakdale Road. The proposed project site plan is presented as **Appendix A**.

1.2 Study Locations and Analysis Scenarios

The study area includes the following intersections, which were selected in consultation with City of Modesto staff:

1. Oakdale Road / Bridgewood Way
2. Oakdale Road / Sylvan Avenue
3. Oakdale Road / Project Driveway

Intersection operations are analyzed under AM and PM peak hour conditions for the following scenarios:

- Existing Conditions – represents conditions in 2024 based on traffic counts collected in August 2024, as well as existing lane geometries and signal timings

- Existing Plus Project Conditions – represents existing conditions with the addition of trips generated by the proposed project.

1.3 Policy Background

1.3.1 Senate Bill 743

Senate Bill (SB) 743 was signed into law in 2013 and changed the focus of transportation impact analysis for CEQA purposes. Instead of analyzing the impact of land use projects on drivers using metrics like delay and level of service (LOS), transportation impacts are now based on the effects of driving as measured using VMT. The intent of SB 743 is to encourage infill development, promote healthier communities through active transportation (e.g., walking and bicycling), and align CEQA transportation analysis in meeting greenhouse gas reduction targets set by other State legislation (i.e., AB 32). The specific changes are codified in Section 15064.3 of the CEQA Guidelines, which states that generally, vehicle miles traveled is the most appropriate measure of transportation impacts. According to 15064.3(a), *"Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact."* The provisions of 15064.3 have applied statewide since July 1, 2020. While the CEQA Guidelines do not contain detailed guidance for individual land uses, Section 1064.3(b)(1) recommends, *"Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact."*

Although not required for CEQA, intersection LOS is included in this report to provide decision-makers and the public with a better understanding of the effects the proposed project may have on the surrounding roadway network and the types of operational enhancements that could be considered to improve operations and safety. Presentation of LOS information also helps evaluate the proposed project's consistency with the City's LOS performance targets.

1.3.2 VMT Thresholds of Significance

The City of Modesto has not adopted a formal VMT methodology or thresholds of significance for residential development projects. Based on direction from City staff on previous projects, consistency with the Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) is generally preferred for VMT analysis. The *Technical Advisory* provides guidance as to how VMT analysis could be performed and what thresholds of significance may be appropriate for CEQA analysis. More specifically, it recommends project VMT be evaluated and compared to existing VMT (for the respective land use) or the proposed project's effect on VMT be evaluated, which compares city or county (or other area as deemed appropriate by the lead agency) VMT with and without the proposed project. Given that the proposed project would modify the zoning for a currently approved specific plan, the VMT analysis for the proposed project is based on net change in total Citywide VMT between Baseline (Currently Approved) and Baseline Plus Project conditions. The intent behind this analysis is to evaluate how VMT would change if the proposed project site were developed based on current approvals versus the proposed project.

1.4 Traffic Operations Analysis Framework

1.4.1 Procedures and Methodologies

The study intersections were analyzed using procedures and methodologies contained in the *Highway Capacity Manual – 7th Edition* (Transportation Research Board, 2022). These methodologies were applied using Synchro 12 software, which considers traffic volumes, lane configurations, signal timings, signal coordination and other pertinent parameters of intersection operations.

The following describes specific inputs, model parameters, and other aspects of the Synchro modeling, based on data collection efforts.

- Peak hour volumes collected at the study intersections on August 27, 2024 were used for the analysis. Local schools were in session and weather conditions were clear when the data was collected.
- Existing roadway geometrics and intersection lane configurations.
- The observed AM and PM peak hour factor (PHF), which is a measure of peaking during the busiest 15-minutes of the hour (lower values represent more peaking) at each intersection was used. The observed PHF ranges from 0.87 to 0.91 during the AM peak hour and is 0.95 during the PM peak hour.
- The observed AM and PM peak hour heavy vehicle percentage (HVP) at each intersection was generally used. However, in cases where the HVP was one percent or less, a minimum of two percent was applied to account for potential variations in vehicle composition.
- Observed bicycle and pedestrian volumes were used.

1.4.2 Level of Service Definition

This study analyzes intersection operations using delay and LOS as the primary measure of performance. Automobile LOS is a qualitative description of traffic flow from the perspective of motorists. The *Highway Capacity Manual, 7th Edition* (Transportation Research Board, 2022) defines six levels of service from LOS A representing the least congested traffic conditions to LOS F representing the most congested traffic conditions. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver.

The *HCM* methodology determines the LOS at signalized intersections by comparing the weighted average control delay per vehicle at the intersection. At side-street stop-controlled intersections, LOS is calculated for each movement in addition to the intersection as a whole. The intersection average delay and worst-case movement/approach delay are reported for side-street stop-controlled intersections.

Tables 1 and 2 display LOS criteria for both signalized and unsignalized intersections.

Table 1: Signalized Intersection Level of Service (LOS) Criteria

LOS	Description	Delay in Seconds
A	Progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual, 7th Edition* (Transportation Research Board).

Table 2: Unsignalized Intersection Level of Service (LOS) Criteria

LOS	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic, delays where intersection capacity exceeded	> 50.0

Source: *Highway Capacity Manual, 7th Edition* (Transportation Research Board).

1.4.3 Intersection Substantial Operational Effect Criteria

Intersection operations under Existing and Existing Plus Project Conditions were evaluated to assess the proposed project's effect on intersection operations relative to General Plan compliance (LOS standards) and to identify the potential need for enhancements to the transportation network. Based on Policy V.C.1 Transportation Study Thresholds in the City of Modesto General Plan (March 2019), an intersection is considered deficient if it performs at LOS E or F (i.e., LOS D is the performance target). Based on previous projects in the City of Modesto, the following criteria are used to determine if the proposed project would result in deficient operations:

- For intersections operating acceptably prior to the implementation of the proposed project: the proposed project would result in a substantial transportation effect if the proposed project would cause the intersection to degrade below the LOS D standard.
- For intersections operating unacceptably prior to the implementation of the proposed project: the proposed project would result in a substantial transportation effect if the proposed project would result in an increase in delay of five or more seconds at the intersection.

For deficient intersections, improvements or enhancement measures were identified to improve LOS and delay.

2. CEQA Compliance

This section evaluates the proposed project's transportation system (VMT), bicycle, pedestrian, transit, and safety impacts.

2.1 Evaluation of Transportation System Impacts (VMT)

A proposed project would result in a significant transportation impact if it would conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)(1), which states for land use projects, "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact."

2.1.1 VMT Assessment

As discussed in the Introduction section, the proposed project's effect on VMT is assessed based on net change in total Citywide VMT. The base year (2019) Stanislaus Council of Governments (StanCOG) Travel Demand Model (TDM) was used to estimate Baseline (Currently Approved) Citywide VMT and Baseline Plus Project Citywide VMT.

Given that the existing parcel is undeveloped, the base year TDM was updated to reflect the currently approved Tivoli Specific Plan (2018) land use designations for the proposed project site. A mix of commercial, single-family and multi-family residential development was incorporated into the model proportional to the amount of land designated for each use and estimated trips that would be generated by each use.¹ It is noted that a formal model calibration or validation is not included as part of this analysis and aside from this land use change, no other modifications to the base year TDM were made. Once Baseline (Currently Approved) Citywide VMT was estimated, the currently approved RSC, VLDR, and MHDR land uses were replaced with single-family residential to represent the proposed project and estimate Baseline Plus Project Citywide VMT. Baseline (Currently Approved) Citywide VMT and Baseline Plus Project Citywide VMT were compared to evaluate the proposed project's effect on VMT. **Table 3** displays the Baseline (Currently Approved) and Baseline Plus Project Citywide total VMT. As displayed, the proposed project would result in a reduction of 9,040 VMT, which indicates the proposed single-family residential development project would result in less VMT in the City when compared to the currently approved TSP land use designations. Therefore, the proposed project's CEQA VMT Transportation impact is **less-than-significant**, and no mitigation measures are required.

Table 3: Vehicle Miles Traveled (VMT) Assessment Results

Scenario	Baseline (Currently Approved)	Baseline Plus Project	Difference	Impact
Citywide VMT	2,972,164	2,963,124	-9,040	Less-Than-Significant

Source: Fehr & Peers, 2024.

¹ Land use assumptions and trip generation estimates documented in the approved TSP EIR (State clearinghouse No. 2005072125) were reviewed.

2.2 Evaluation of Bicycle, Pedestrian, and Transit Impacts

A proposed project would result in a significant bicycle, pedestrian, or transit impact if it would disrupt or interfere with any existing or planned, bicycle, pedestrian, or transit facilities, or if the proposed project would result in a physical change that would be inconsistent with policies in the City of Modesto General Plan (General Plan). These analyses are related to CEQA Guidelines Transportation Checklist Question A.

2.2.1 Pedestrian Facilities

In the study area, there is an existing contiguous sidewalk on the west side of Oakdale Road between SR 132 and Claratina Avenue; however on the east side of Oakdale Road, the sidewalk terminates approximately 600 feet north of Sylvan Avenue. As such, there is no existing sidewalk present on the east side of Oakdale Road along the proposed project frontage.

The site plan indicates that the proposed project would construct sidewalks along all interior streets and project frontages consistent with the City of Modesto and the TSP requirements. However, it is noted that there would be a gap in the pedestrian network on the east side of Oakdale Road between the proposed project site and the existing pedestrian facilities to the south of the proposed project site, due to lack of pedestrian facilities on the adjacent undeveloped parcels. While the City's General Plan and Non-Motorized Transportation Master Plan (December 2006) include goals and policies aimed at enhancing connections of the non-motorized network, there are no requirements for developments to close off-site gaps and the policy language indicates that the City is primarily responsible for facilitating such enhancements. Additionally, it is our understanding that the City is currently conducting a corridor study along Oakdale Road. It is recommended that appropriate crossing locations and crossing improvements be evaluated as part of this corridor study based on existing and planned speeds, volumes, and number of lanes on the roadway. If a crossing is deemed appropriate and necessary at the Oakdale Road / Project Driveway intersection, the crossing should be installed consistent with guidance in the *Guide for Improving Pedestrian Safety and Uncontrolled Crossing Locations* (U.S. Department of Transportation Federal Highway Administration, 2018) and/or any other applicable City documents/standards.

In summary, the proposed project would include on-site sidewalks, curb, gutter, and lighting consistent with the TSP, the General Plan, the Non-Motorized Transportation Master Plan, Municipal Code, and Standard Specifications. The proposed project would not disrupt or interfere with any existing or planned pedestrian improvements or result in a physical change that would be inconsistent with any pedestrian related policies in the General Plan. Therefore, the proposed project would result in a **less-than-significant** pedestrian impact.

2.2.2 Bicycle Facilities

According to the City's Non-Motorized Transportation Plan (December 2006), a variety of Class I, II, III and IV bikeways are located throughout the City. The four types of bikeways are defined as follows:

- Class I - Typically called a "bike path," a Class I bikeway provides bicycle travel on a paved right-of-way completely separated from any street or highway.

- Class II - Often referred to as a “bike lane,” a Class II bikeway provides a striped and stenciled lane for one-way travel on a street or highway.
- Class III - Generally referred to as a “bike route,” a Class III bikeway provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.
- Class IV - Cycle tracks or separated bikeways provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which are protected from vehicular traffic.

The nearest existing bicycle facilities are located near the Oakdale Road / Sylvan Avenue intersection. A Class II Bike Lane is present along Sylvan Avenue in both the eastbound and westbound directions, and along Oakdale Road in both the northbound and southbound directions. On Oakdale Road, the northbound bike lane terminates approximately 200 feet north of Sylvan Avenue and the southbound bike lane begins approximately 600 feet north of Sylvan Avenue. As such, there are no existing bicycle facilities present along the proposed project frontage.

Both the Non-Motorized Transportation Plan and the approved TSP indicate a future Class II Bike Lane along Oakdale Road between Sylvan Avenue and SR 219 (also listed as Kiernan Avenue or Claribel Road). Specifically, the Non-Motorized Transportation Plan identifies this as a priority project. While Policy 2.4 of the Non-Motorized Transportation Plan indicates that developers are required to adhere to the roadway design standards, signage, and cross-sections identified in the Non-Motorized Transportation Master Plan, construction of a Class II Bike Lane along the frontage would result in a gap in the bicycle network as the parcels both north and south of the proposed project are currently undeveloped. For this reason, the proposed project would dedicate the necessary right-of-way for future construction of the Class II Bike Lane along the project frontage in accordance with the Non-Motorized Transportation Plan and TSP.

The proposed project would not disrupt or interfere with the existing or planned bicycle facilities and would not result in any physical change that would be inconsistent with bicycle related policies identified in the TSP, the City’s General Plan, or the Non-Motorized Transportation Plan. Therefore, the proposed project would result in a ***less-than-significant*** bicycle impact.

2.2.3 Transit Facilities

Stanislaus Regional Transit Authority (StanRTA) provides bus service throughout Stanislaus County. The proposed project site is currently served by Route 32 and 60. Route 32 provides connection between northeastern Modesto and downtown Modesto. Route 60 provides connection between Modesto, Riverbank, and Oakdale. The bus stop closest to the site is on the west side of the road, at approximately 75 feet north of the Oakdale Road / Bridgewood Way intersection. Other bus stops in the proposed project vicinity are located at Oakdale Road / Claratina Avenue, Mable Avenue / Oakdale Road, Mable Avenue / Palmwood Mobile Home Park, Sylvan Avenue / Oakdale Road, and Oakdale Road / Post Office Drive. **Table 4** below shows the existing transit routes and schedules.

Table 4: Transit Route Summary

Route	Operating Days	Operating Hours	Approximate Headway	Closest Transit Stop
Route 32	Monday to Sunday	5:45 AM to 10:15 PM Weekdays 7:45 AM to 8:15 PM Saturday 8:15 AM to 6:45 PM Sunday	30 minutes 60 minutes 60 minutes	Oakdale Road / Bridgewood Way
Route 60	Monday to Sunday	5:00 AM to 9:00 PM Weekdays 7:00 AM to 7:00 PM Saturday 8:00 AM to 6:00 PM Sunday	60 minutes	Oakdale Road / Bridgewood Way

Source: StanRTA, October 2024.

The approved TSP EIR identifies a new bus turn-out location at approximately 400 feet south of the proposed project site on the east side of Oakdale Road. It would be located south of the proposed project frontage and is directly across from the existing bus stop on the west side of Oakdale Road. Although the new bus turn-out is identified in the TSP EIR, the TSP does not specify the location, length or width of the new turn-out. If the new bus turn-out were to be constructed, the proposed project would not adversely affect the implementation of the new bus turn-out facility.

The proposed project would not disrupt or interfere with existing or planned transit services and would not result in a physical change that would be inconsistent with any transit related policies identified in the TSP, the General Plan, or the Non-Motorized Transportation Plan. Therefore, the proposed projects would result in a **less-than-significant** transit impact.

2.3 Evaluation of Safety and Emergency Vehicle Impacts

The following analyses are related to CEQA Guidelines Transportation Checklist Questions C and D.

The proposed project is a residential development proposed in a residential and commercial area, so the volume, speed, and mix of vehicles generated by the proposed project would be similar to the existing volume, speed, and mix of vehicles in the study area.

The proposed project's circulation system is comprised of one side-street stop-controlled intersection and internal roadways which would provide full access to all lots. The intersection is located at Oakdale Road / C Drive as illustrated on the site plan. The new intersection and internal roadways would be designed to comply with the TSP (2008), the City's General Plan (2019), City of Modesto Standard Specifications (2014), and the Municipal Code. Intersection signing and striping would be designed to meet applicable industry standards from the California Manual on Uniform Traffic Control Devices (CAMUTCD) and The American Associations of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets.

Additionally, the proposed project would be subject to review and approval by the City. The review and approval process would include the Fire Department, which would include a review of the proposed project's consistency with the City's design criteria to ensure that safe vehicle access and viable emergency vehicles movements are provided. Therefore, implementation of the proposed projects would

not be inconsistent with an applicable design standard and the proposed projects would result in a ***less-than-significant*** safety impact.

3. Traffic Operations Analysis

3.1 Existing Conditions

This chapter describes the existing transportation system in the study area. Existing traffic operations at the study intersections are also summarized in this chapter.

3.1.1 Existing Roadway Network

The proposed project site is located east of Oakdale Road, west of Roselle Avenue, south of Mable Avenue, and north of Sylvan Avenue. Oakdale Road and Sylvan Avenue are major roads that connect the proposed project site to areas in Modesto, while Mable Avenue and Bridgewood Way are minor roads that provide access to and from the residential areas along the roadway. Direct vehicular access to the proposed project is proposed along Oakdale Road.

Oakdale Road is a north-south arterial running from Park Ridge Drive/Arrowwood Drive in Riverbank to Scenic Drive in Modesto. Between Mable Avenue and Sylvan Avenue it has four lanes, including one lane going northbound, two lanes going southbound, and one two-way left turn lane. The speed limit is 45 miles-per-hour near the study area. The City's General Plan indicates that it is designated as a future 6-lane principle arterial.

Sylvan Avenue is a designated four-lane east-west minor arterial running from McHenry Avenue to Claus Road. The speed limit is 45 miles-per-hour near the study area, and primarily serves residential areas with some commercial buildings.

Mable Avenue is a two-lane east-west local roadway running from Coffee Road until after Oakdale Road. The speed limit is 30 miles-per-hour near the study area.

Bridgewood Way is a two-lane east-west local roadway connecting between Oakdale Road and Palmwood Drive. The speed limit is 20 to 25 miles-per-hour near the study area, and primarily serves residential areas connected to the roadway.

3.1.2 Existing Conditions Traffic Count Data

Intersection turning movement counts, including separate counts of pedestrians, bicyclists, and heavy trucks, were collected for the weekday morning (7:00 AM to 9:00 AM) and weekday evening (4:00 PM to 6:00 PM) peak periods, while schools were in session. The traffic counts for Existing Conditions are provided in **Appendix B**.

3.1.3 Existing Conditions Intersection Level of Service

As previously mentioned, Synchro 12, which incorporates existing intersection lane configurations, signal timings, and peak hour turning movement volumes, was used to calculate the LOS and delay for the study intersections during the AM and PM peak hours. **Table 5** displays the results for Existing Conditions. Technical calculations are presented in **Appendix C**.

Table 5: Existing Conditions Intersection Level of Service

ID	Intersection	Control ¹	LOS Standard	Peak Hour ²	Delay ³ (sec)	LOS
1	Oakdale Road / Bridgewood Way	SSSC	D	AM	1 (15)	A (C)
				PM	1 (18)	A (C)
2	Oakdale Road / Sylvan Avenue	Signalized	D	AM	100	F
				PM	66	E

Notes

- Existing intersection traffic control type; SSSC = Side-Street Stop-Controlled.
- AM = Weekday morning peak hour, PM = Weekday evening peak hour.
- Whole intersection average delay reported for signalized intersections. Side-Street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 7 methodologies.

Bold indicates operations below the LOS standard.

Source: Fehr & Peers, 2024.

As shown in **Table 5**, the Oakdale Road / Sylvan Avenue intersection operates deficiently at LOS F with approximately 100 seconds of delay during the AM peak hour and LOS E with approximately 66 seconds of delay during the PM peak hour.

3.2 Existing Plus Project Conditions

3.2.1 Project Traffic Estimate

The amount of traffic expected to be generated on the study roadway system by the proposed project is estimated using a three-step process: (1) project trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of project-generated traffic that would be added to the roadway network. The second step estimates the direction of travel to and from the proposed project site. During the third step, the new trips are assigned to specific street segments and intersection turning movements. This process is described in more detail in the following sections.

3.2.1.1 Project Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for daily, and AM and PM peak hours. The proposed project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* using data from Land Use Code 210 (Single-Family Detached Housing). The proposed project trip generation estimates are presented in **Table 6**. The proposed project is expected to generate 130 weekday AM peak hour trips, and 177 weekday PM peak hour trips.

Table 6: Project Trip Generation

Project Component Information			Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
ITE Land Use	Code	Dwelling Unit	Total	In	Out	Total	In	Out	Total
Single-Family Detached Housing	210	185	1,777	33	97	130	112	65	177

Notes:

Trip generation estimated using fitted curve equation published in the *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2022).

Source: Institute of Transportation Engineers *Trip Generation Manual* (11th Edition); Fehr & Peers, 2024

3.2.1.2 Project Trip Distribution and Assignment

Project trip distribution and assignment is a process that is used to estimate how the trips generated by the proposed project would be distributed across the roadway network. Distribution and assignment of the proposed project trips are based on traffic patterns in the local area and the potential trip making characteristics of the proposed uses. In addition to existing travel patterns, the StanCOG TDM was reviewed and used to inform trip distribution. The proposed project trips for both the AM and PM peak hours were distributed to the roadway system as follows:

- North on Oakdale Road: 28%
- South on Oakdale Road: 40%
- West on Sylvan Avenue: 20%
- East on Sylvan Avenue: 10%
- West on Bridgewood Way: 2%

3.2.2 Existing Plus Project Conditions Intersection Level of Service

Project trips were added to existing traffic counts based on the trip generation, distribution, and assignment previously described. **Table 7** compares the results of the intersection operations analysis for Existing and Existing Plus Project Conditions. Technical calculations are provided in **Appendix C**.

Table 7: Existing Plus Project Conditions Intersection Level of Service

ID	Intersection	Control ¹	Peak Hour ²	Existing Conditions		Existing Plus Project Conditions	
				Delay ³	LOS ⁴	Delay ³	LOS ⁴
1	Oakdale Road / Bridgewood Way	SSSC	AM	1 (15)	A (C)	1 (17)	A (C)
			PM	1 (18)	A (C)	1 (20)	A (C)
2	Oakdale Road / Sylvan Avenue	Signalized	AM	100	F	100	F
			PM	66	E	67	E
3	Oakdale Road / Project Driveway	SSSC	AM	-	-	2 (29)	A (D)
			PM	-	-	1 (28)	A (D)

Notes

- Existing intersection traffic control type; SSSC = Side-Street Stop-Controlled.
- AM = Weekday morning peak hour, PM = Weekday evening peak hour.
- Whole intersection average delay reported for signalized intersections. Side-Street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 7 methodologies.
- LOS designation per HCM 7th Edition.

Bold indicates operations below the LOS standard.

Source: Fehr & Peers, 2024.

As displayed, the proposed project would result in minimal changes to delay and level of service at the two SSSC study intersections. The Oakdale Road / Bridgewood Way intersection would continue operating acceptably with the addition of project trips; intersection worst movement delay would increase by approximately two seconds during either peak hour. The Oakdale Road / Project Driveway intersection would operate acceptably during both AM and PM peak hours with respect to their LOS standard.

The Oakdale Road / Sylvan Avenue intersection would continue operating deficiently at LOS F during the AM peak hour and LOS E during the PM peak hour with the addition of project trips. As noted in **section 1.4.3** above, for intersections that are deficient under existing conditions, the proposed project would result in a substantial transportation effect if the proposed project would result in an increase in delay of five or more seconds at the intersection. The proposed project would not result in an increase in delay of five or more seconds and therefore, would not substantially affect intersection operations and no improvements would be required.

Fehr & Peers evaluated potential improvements at the intersection and with signal timing modifications, the intersection would operate acceptably at LOS D with approximately 47 seconds of delay during the AM peak hour and 48 seconds of delay during the PM peak hour. However, it is noted that while signal timing modifications would improve operations at the study intersection, it is currently unknown if/how they would affect operations along the corridor as a whole. It is our understanding that the City is

currently conducting a corridor study along Oakdale Road. It is recommended that the signal timing modifications at the Oakdale Road / Sylvan Avenue intersection and adjacent signals be evaluated as part of that study to determine how modifications would affect operations not only at the study intersection but also on the corridor as a whole.

Appendix A: Site Plan

LEGEND

— S —	EX. SEWER LINE
— SD —	EX. STORM DRAIN LINE
— N —	EX. WATER LINE
— I —	EX. M.I.D. IRRIGATION LINE
— CB —	EX. MANHOLE
— CB —	EX. CATCH BASIN
— FH —	EX. FIRE HYDRANT
— EL —	EX. ELECTROLIER
— S —	PROP. SEWER LINE
— MH —	PROP. SAN. SEWER MANHOLE
— N —	PROP. WATER LINE
— SD —	PROP. STORM DRAIN LINE
— I —	PROP. M.I.D. IRRIGATION LINE
— CB —	PROP. DRAIN INLET
— CB —	PROP. STORM DRAIN MANHOLE
— FH —	PROP. FIRE HYDRANT
— EL —	PROP. ELECTROLIER
— 10' P.U.E. —	PUBLIC UTILITY EASEMENT

GENERAL NOTES

- ASSESSOR'S PARCEL NUMBER: 083-004-057
- PRESENT ZONING: SP (SPECIFIC PLAN) TIVOLI; RSG-2, VLDR-2, & MHDR-3
- SITE SUMMARY: TOTAL SITE = 19.95 ACRES BEING DIVIDED INTO 185 MEDIUM DENSITY RESIDENTIAL LOTS AND 11 COMMON AREA LOTS.
- THE PROPERTY LINE DISTANCES, BEARINGS, AND ALL OTHER DIMENSIONS SHOWN ON THIS MAP ARE TAKEN FROM DEEDS, RECORD MAPS OR ASSESSOR'S MAPS, AND PRELIMINARY FIELD OBSERVATIONS BY OFFICE PERSONNEL AND DO NOT REFLECT AN ACTUAL FIELD SURVEY.
- PURSUANT TO SECTION 66463.1 OF THE SUBDIVISION MAP ACT, THE OWNER-SUBDIVIDER HEREBY RESERVES THE RIGHT TO FILE MULTIPLE SUBDIVISION MAPS.
- THIS PROJECT SITE IS NOT SUBJECT TO INUNDATION AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM FLOOD INSURANCE RATE MAP FOR THE CITY OF MODESTO, COMMUNITY PANEL NO. 06099 C0330E, DATED SEPTEMBER 26, 2008.
- UTILITY LINES AS SHOWN ON THIS MAP ARE BASED ON PRELIMINARY DESIGN AND ARE SUBJECT TO CHANGE AT THE TIME OF DEVELOPMENT AND THROUGH THE IMPROVEMENT PLAN APPROVAL PROCESS WITH THE CITY OF MODESTO.

STATEMENT OF SUBDIVIDER

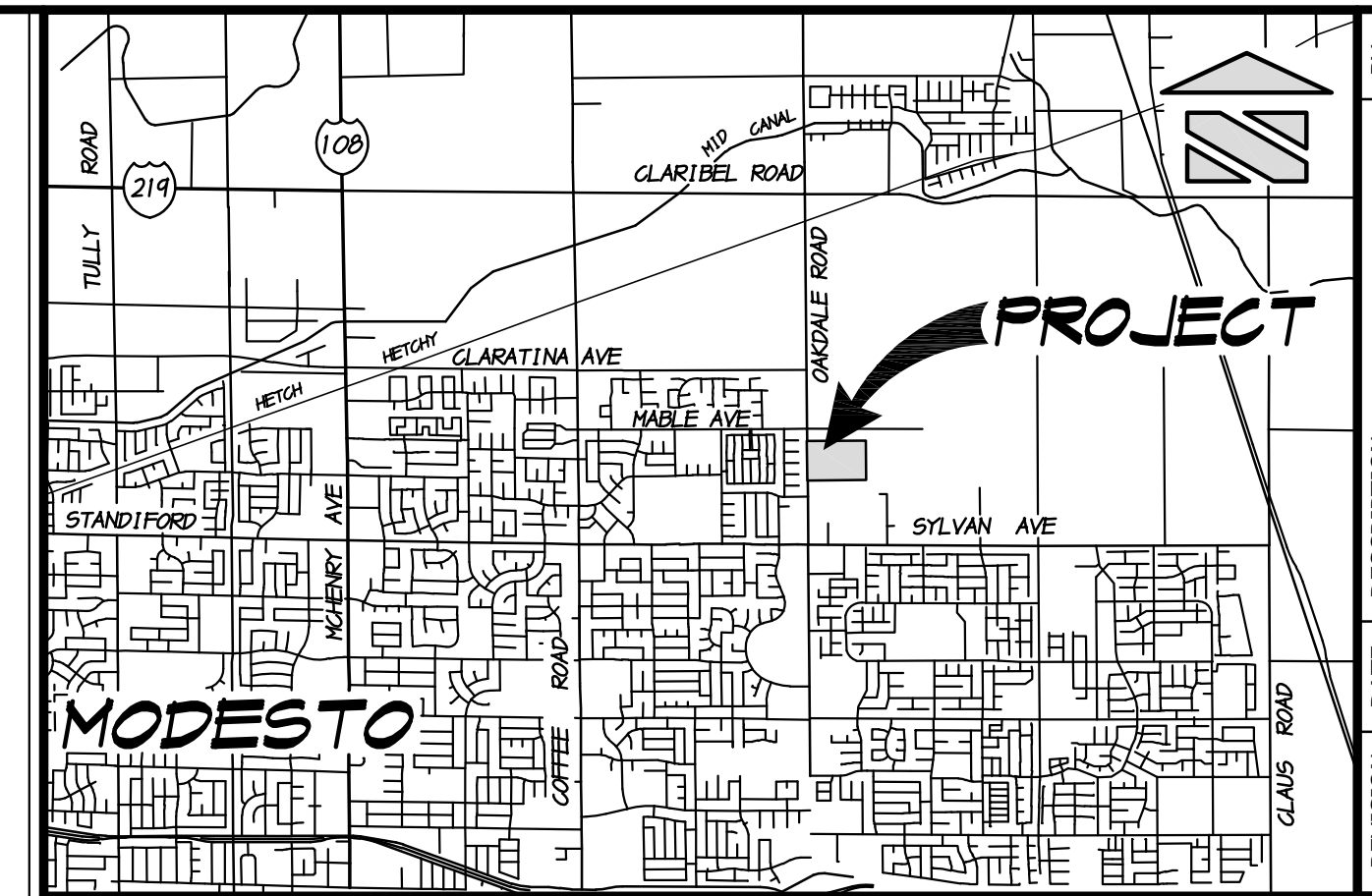
- ALL IMPROVEMENTS TO BE INSTALLED SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF MODESTO STANDARDS. TIVOLI SP STANDARDS UNLESS SHOWN HERE IN.
- STORM DRAINAGE: THE STORM DRAINAGE WILL BE PRIVATE STORM DRAIN BASIN LOT J AND HORIZONTAL DRAIN OWNED AND MAINTAINED BY HOME OWNER'S ASSOCIATION.
- SANITARY SEWER: SEWER WILL CONNECT TO THE EXISTING CITY OF MODESTO SYSTEM.
- WATER SUPPLY: DOMESTIC WATER WILL CONNECT TO THE EXISTING CITY OF MODESTO SYSTEM.
- COMMON AREAS ARE PROPOSED WITHIN THIS DEVELOPMENT ARE OWNED AND MAINTAINED BY HOME OWNER'S ASSOCIATION.
- CITY TO MAINTAIN ALL AREAS WITHIN PUBLIC RIGHT-OF-WAY (OAKDALE ROAD).
- ALL ROADS WITHIN DEVELOPMENT ARE PRIVATE AND TO BE OWNED AND MAINTAINED BY HOME OWNER'S ASSOCIATION.
- STREET LIGHTING: STREET LIGHTING SHALL BE IN ACCORDANCE WITH THE CITY OF MODESTO STANDARDS AND MAINTAINED BY THE CITY OF MODESTO.

OWNER

PANTALEO FARMS LLC
4225 SOLANO AVENUE #702
NAPA, CA 94558

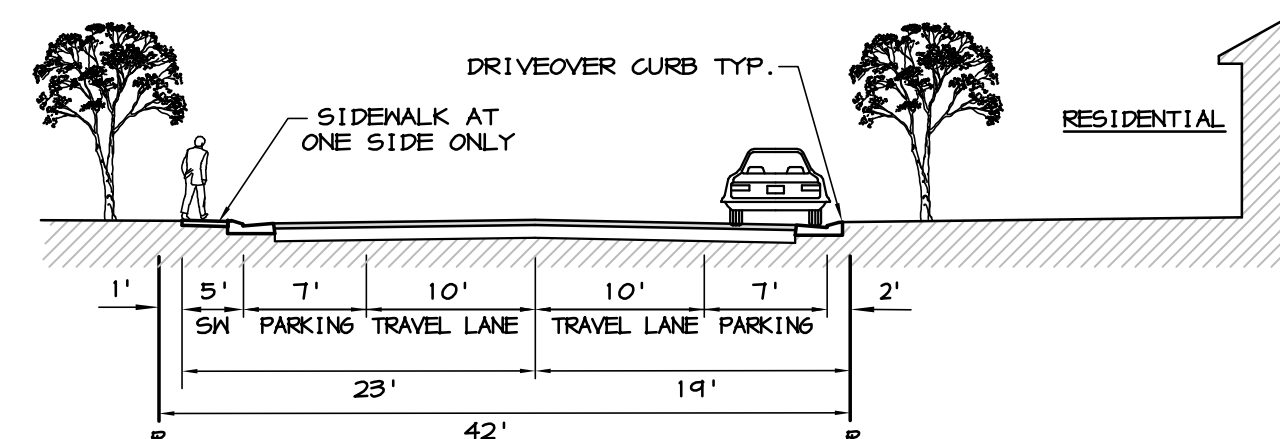
DEVELOPER

NRB INVESTMENTS, LLC
C/O RANDY BLING
1701 W. MARCH LANE, SUITE D
STOCKTON, CALIFORNIA 95207

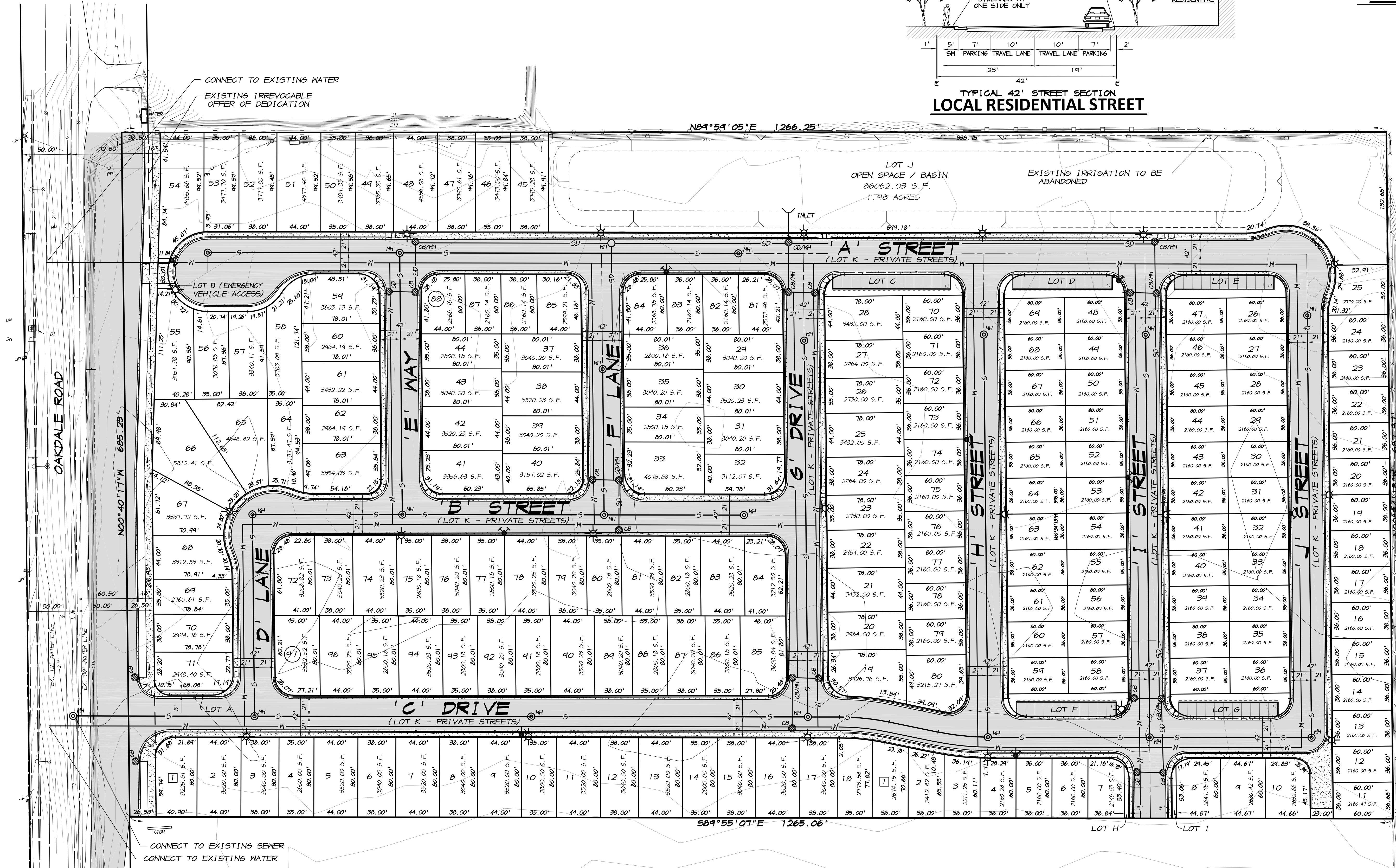


VICINITY MAP

NO SCALE



TYPICAL 42' STREET SECTION LOCAL RESIDENTIAL STREET



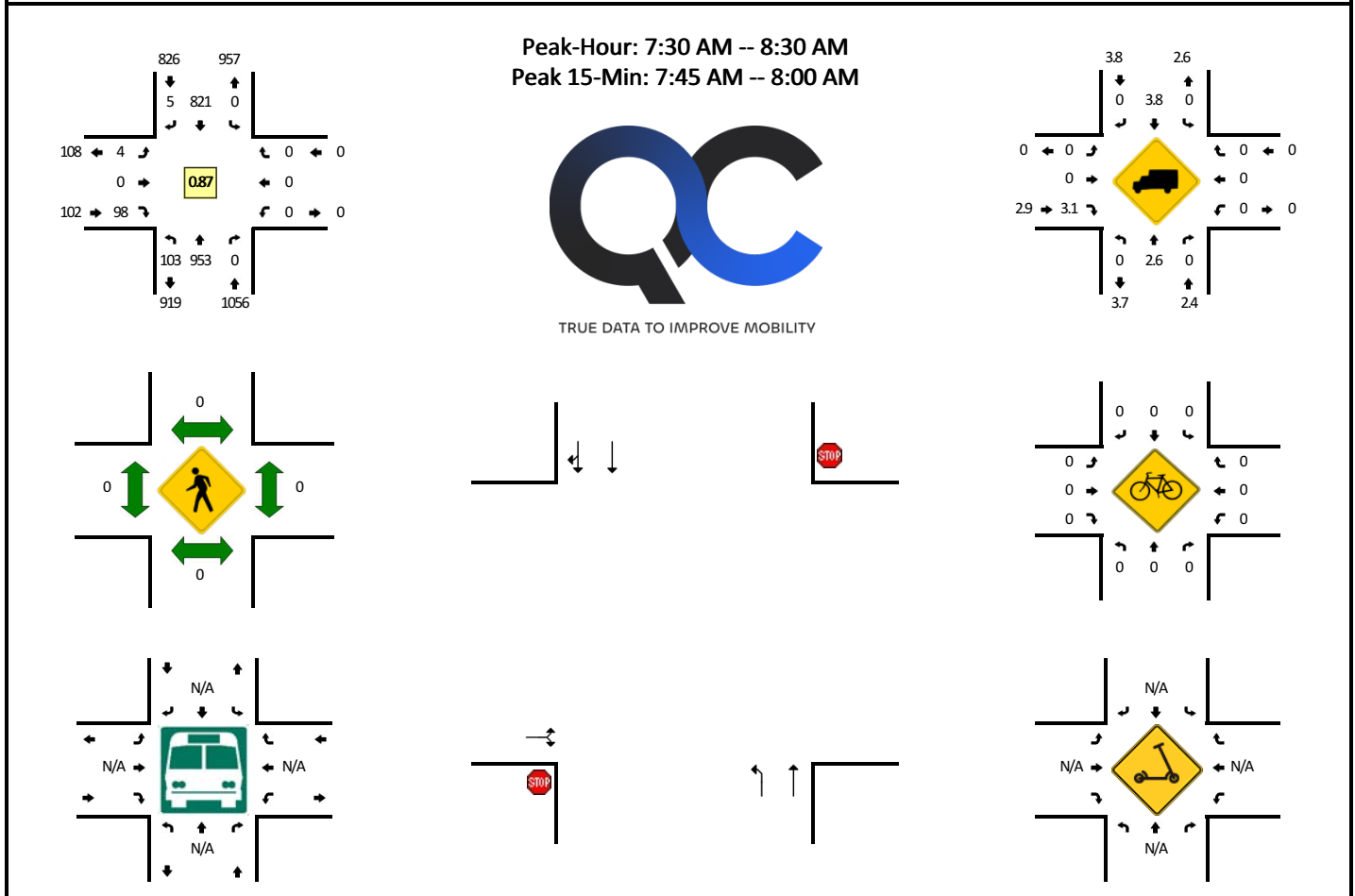
VESTING TENTATIVE SUBDIVISION MAP

BEING PARCEL 1 AS SHOWN ON THE MAP FILED IN BOOK 5 OF PARCEL MAPS, AT PAGE 110, STANISLAUS COUNTY RECORDS, LINES 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 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Appendix B: Traffic Counts

LOCATION: Oakdale Rd -- Bridgewood Wy
CITY/STATE: Modesto, CA

QC JOB #: 16708001
DATE: Tue, Aug 27 2024

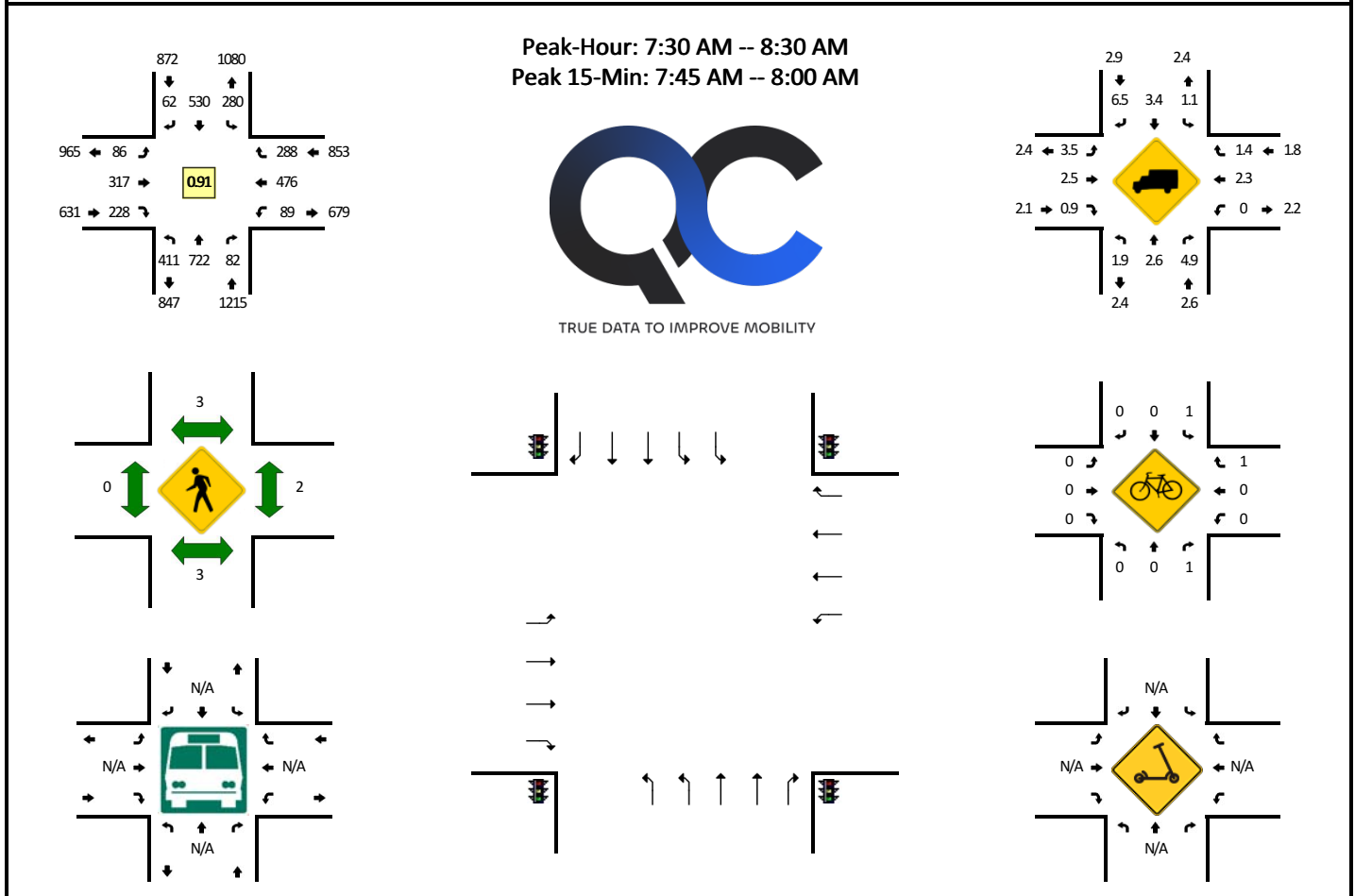


5-Min Count Period Beginning At	Oakdale Rd (Northbound)				Oakdale Rd (Southbound)				Bridgewood Wy (Eastbound)				Bridgewood Wy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	58	0	0	0	33	2	0	0	0	3	0	0	0	0	0	98	
7:05 AM	5	65	0	0	0	42	0	0	0	0	5	0	0	0	0	0	117	
7:10 AM	1	67	0	0	0	39	1	0	0	0	3	0	0	0	0	0	111	
7:15 AM	4	75	0	0	0	44	0	0	0	0	3	0	0	0	0	0	126	
7:20 AM	4	51	0	0	0	64	0	0	0	0	7	0	0	0	0	0	126	
7:25 AM	3	75	0	0	0	52	1	0	0	0	3	0	0	0	0	0	134	
7:30 AM	1	70	0	0	0	47	0	0	0	0	7	0	0	0	0	0	125	
7:35 AM	8	80	0	0	0	64	1	0	0	0	5	0	0	0	0	0	158	
7:40 AM	7	85	0	0	0	75	1	0	1	0	7	0	0	0	0	0	176	
7:45 AM	7	90	0	0	0	77	0	0	0	0	5	0	0	0	0	0	179	
7:50 AM	8	85	0	0	0	82	1	0	0	0	8	0	0	0	0	0	184	
7:55 AM	12	86	0	0	0	102	1	0	0	0	8	0	0	0	0	0	209	1743
8:00 AM	8	86	0	0	0	62	0	0	0	0	13	0	0	0	0	0	169	1814
8:05 AM	7	72	0	0	0	60	0	0	0	0	7	0	0	0	0	0	146	1843
8:10 AM	10	79	0	0	0	64	0	0	2	0	12	0	0	0	0	0	167	1899
8:15 AM	12	74	0	0	0	81	0	0	0	0	4	0	0	0	0	0	171	1944
8:20 AM	12	77	0	0	0	51	0	0	0	0	11	0	0	0	0	0	151	1969
8:25 AM	11	69	0	0	0	56	1	0	1	0	11	0	0	0	0	0	149	1984
8:30 AM	4	63	0	0	0	48	0	0	0	0	9	0	0	0	0	0	124	1983
8:35 AM	2	69	0	0	0	46	0	0	1	0	2	0	0	0	0	0	120	1945
8:40 AM	0	58	0	0	0	42	0	0	0	0	5	0	0	0	0	0	105	1874
8:45 AM	5	58	0	0	0	54	0	0	0	0	4	0	0	0	0	0	121	1816
8:50 AM	1	78	0	0	0	45	1	0	0	0	3	0	0	0	0	0	128	1760
8:55 AM	1	47	0	0	0	47	1	0	1	0	0	0	0	0	0	0	97	1648
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	108	1044	0	0	0	1044	8	0	0	0	84	0	0	0	0	0	2288	
Heavy Trucks	0	32	0	0	0	48	0	0	0	0	4	0	0	0	0	0	84	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Oakdale Rd -- Sylvan Ave
CITY/STATE: Modesto, CA

QC JOB #: 16708002
DATE: Tue, Aug 27 2024

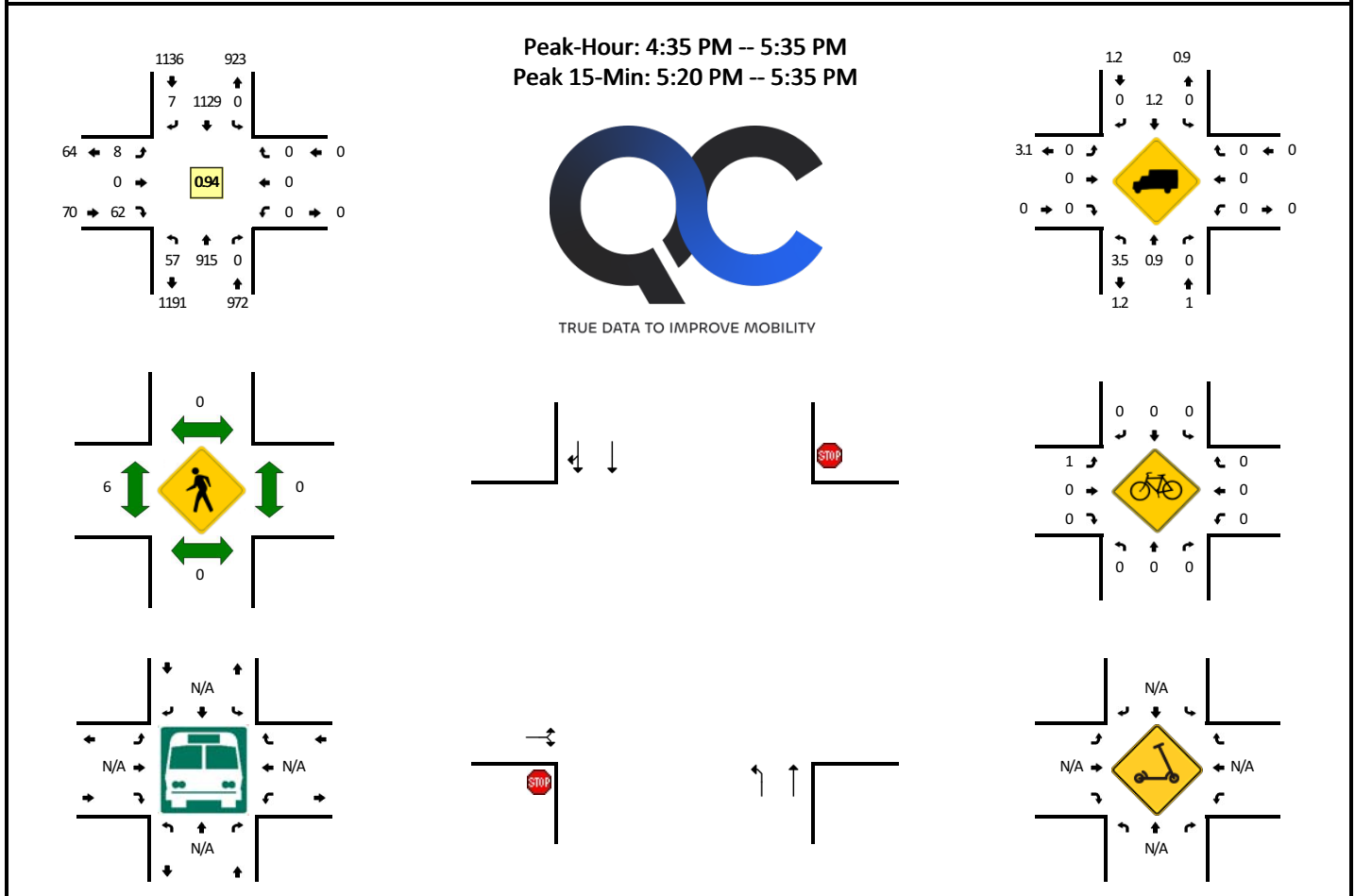


5-Min Count Period Beginning At	Oakdale Rd (Northbound)				Oakdale Rd (Southbound)				Sylvan Ave (Eastbound)				Sylvan Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	45	2	0	9	27	2	0	5	13	9	0	1	16	16	0	155	
7:05 AM	9	42	4	0	4	21	7	0	2	17	5	0	2	21	19	0	153	
7:10 AM	16	55	5	0	7	41	4	0	7	20	15	0	1	25	16	0	212	
7:15 AM	13	53	4	0	14	33	5	0	7	11	13	0	6	26	21	0	206	
7:20 AM	17	31	5	0	13	36	10	0	5	19	8	0	12	38	15	0	209	
7:25 AM	23	49	6	0	9	44	5	0	5	34	19	3	5	44	25	0	271	
7:30 AM	34	60	6	0	15	32	4	0	2	29	12	0	6	32	20	0	252	
7:35 AM	29	59	3	0	28	31	5	0	9	13	13	2	4	37	23	0	256	
7:40 AM	31	52	6	0	23	48	7	0	8	35	19	4	2	58	18	0	311	
7:45 AM	30	60	9	0	21	40	1	0	4	33	18	0	8	57	36	0	317	
7:50 AM	42	85	8	0	18	51	9	0	8	38	19	0	5	40	20	0	343	
7:55 AM	25	58	5	0	35	66	2	0	3	28	23	0	8	38	33	0	324	3009
8:00 AM	36	60	10	0	34	47	4	0	4	29	17	0	10	41	18	0	310	3164
8:05 AM	27	54	6	0	22	36	4	0	8	34	24	0	7	46	24	0	292	3303
8:10 AM	39	58	4	0	28	41	2	0	6	16	16	3	8	41	22	0	284	3375
8:15 AM	60	82	7	0	20	45	9	0	7	27	24	0	9	19	25	0	334	3503
8:20 AM	26	54	9	0	12	46	9	0	5	19	30	4	12	22	24	0	272	3566
8:25 AM	32	40	9	0	24	47	6	0	6	16	13	3	10	45	25	0	276	3571
8:30 AM	27	47	4	0	9	34	7	1	4	19	18	4	13	36	15	0	238	3557
8:35 AM	14	49	3	0	9	44	3	0	1	16	17	1	5	21	25	0	208	3509
8:40 AM	28	36	5	0	11	29	8	1	3	24	4	1	4	34	17	0	205	3403
8:45 AM	27	61	9	0	11	36	6	0	5	15	17	0	6	32	16	0	241	3327
8:50 AM	10	54	6	0	10	39	8	0	5	15	15	0	4	25	16	0	207	3191
8:55 AM	23	25	4	0	7	30	7	0	4	14	12	0	5	26	18	0	175	3042
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	388	812	88	0	296	628	48	0	60	396	240	0	84	540	356	0	3936	
Heavy Trucks	8	24	0		4	20	12		12	0	4		0	12	0		96	
Buses																		
Pedestrians	0	0			0				0	0			0	0			0	
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4	
Scooters																		

Comments:

LOCATION: Oakdale Rd -- Bridgewood Wy
CITY/STATE: Modesto, CA

QC JOB #: 16708003
DATE: Tue, Aug 27 2024

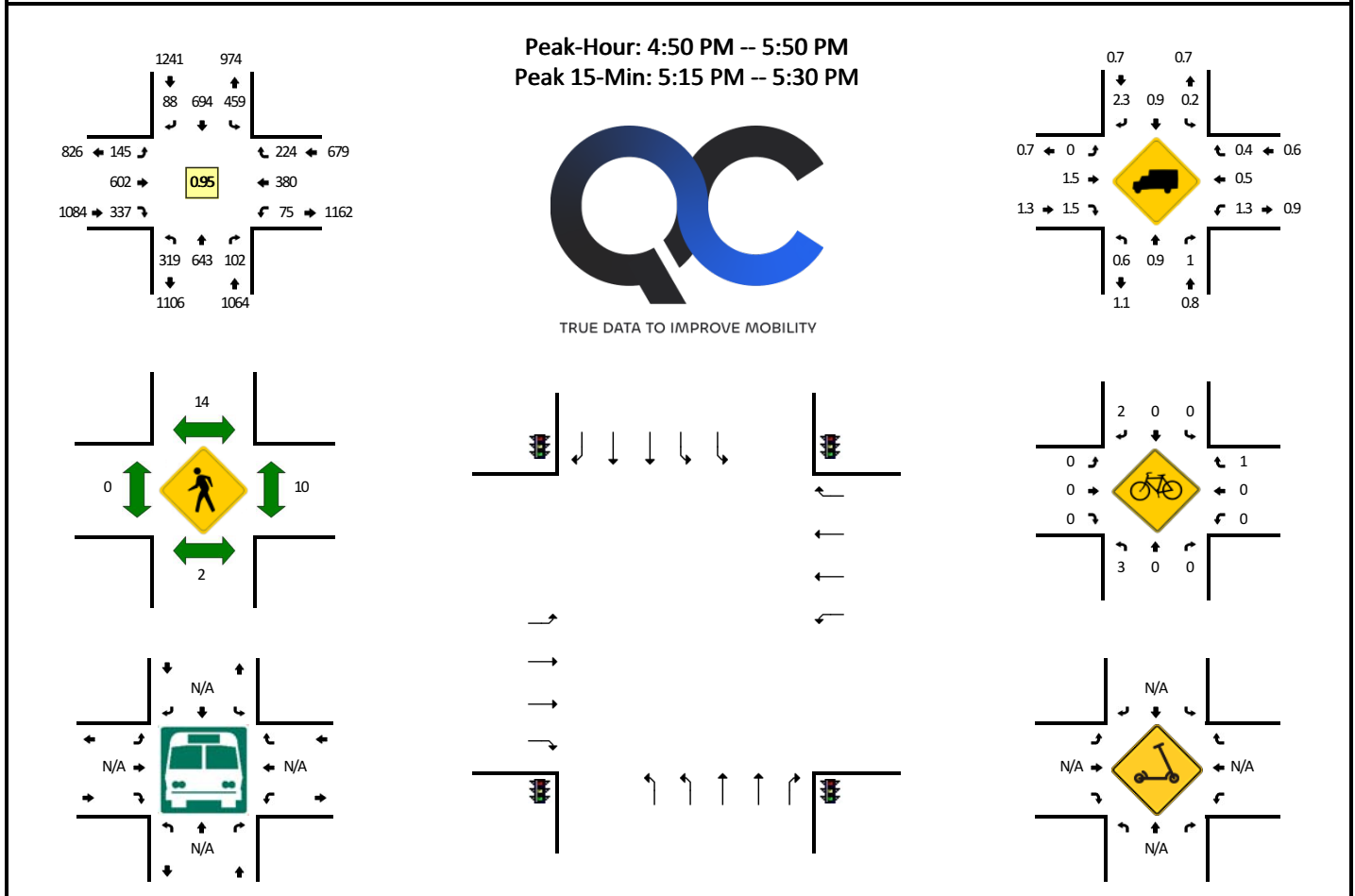


5-Min Count Period Beginning At	Oakdale Rd (Northbound)				Oakdale Rd (Southbound)				Bridgewood Wy (Eastbound)				Bridgewood Wy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	59	0	0	0	92	0	0	1	0	4	0	0	0	0	0	156	
4:05 PM	4	74	0	0	0	93	0	0	0	0	2	0	0	0	0	0	173	
4:10 PM	4	64	0	0	0	85	0	0	0	0	3	0	0	0	0	0	156	
4:15 PM	7	86	0	0	0	95	0	0	0	0	5	0	0	0	0	0	193	
4:20 PM	0	50	0	0	0	112	1	0	0	0	6	0	0	0	0	0	169	
4:25 PM	4	66	0	0	0	95	1	0	1	0	1	0	0	0	0	0	168	
4:30 PM	2	78	0	0	0	74	2	0	0	0	4	0	0	0	0	0	160	
4:35 PM	7	76	0	0	0	98	2	0	0	0	6	0	0	0	0	0	189	
4:40 PM	2	85	0	0	0	64	0	0	2	0	5	0	0	0	0	0	158	
4:45 PM	3	69	0	0	0	81	1	0	0	0	4	0	0	0	0	0	158	
4:50 PM	8	77	0	0	0	113	0	0	0	0	6	0	0	0	0	0	204	
4:55 PM	5	74	0	0	0	83	0	0	2	0	5	0	0	0	0	0	169	2053
5:00 PM	4	67	0	0	0	100	0	0	2	0	3	0	0	0	0	0	176	2073
5:05 PM	2	75	0	0	0	102	0	0	0	0	4	0	0	0	0	0	183	2083
5:10 PM	6	78	0	0	0	93	0	0	0	0	3	0	0	0	0	0	180	2107
5:15 PM	5	88	0	0	0	85	0	0	0	0	4	0	0	0	0	0	182	2096
5:20 PM	7	67	0	0	0	111	2	0	1	0	8	0	0	0	0	0	196	2123
5:25 PM	2	85	0	0	0	99	0	0	0	0	5	0	0	0	0	0	191	2146
5:30 PM	6	74	0	0	0	100	2	0	1	0	9	0	0	0	0	0	192	2178
5:35 PM	6	87	0	0	0	77	0	0	0	0	6	0	0	0	0	0	176	2165
5:40 PM	2	69	0	0	0	82	0	0	1	0	6	0	0	0	0	0	160	2167
5:45 PM	7	70	0	0	0	86	0	0	0	0	6	0	0	0	0	0	169	2178
5:50 PM	6	77	0	0	0	73	0	0	1	0	5	0	0	0	0	0	162	2136
5:55 PM	2	49	0	0	0	86	2	0	1	0	2	0	0	0	0	0	142	2109
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	60	904	0	0	0	1240	16	0	8	0	88	0	0	0	0	0	2316	
Heavy Trucks	4	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	28	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Oakdale Rd -- Sylvan Ave
CITY/STATE: Modesto, CA

QC JOB #: 16708004
DATE: Tue, Aug 27 2024



5-Min Count Period Beginning At	Oakdale Rd (Northbound)				Oakdale Rd (Southbound)				Sylvan Ave (Eastbound)				Sylvan Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	47	5	0	38	49	6	0	4	40	29	0	10	30	8	0	276	
4:05 PM	37	67	11	0	32	43	6	0	6	37	28	5	4	48	11	0	335	
4:10 PM	25	61	2	0	29	59	6	0	4	51	25	0	6	22	14	0	304	
4:15 PM	21	64	13	0	34	67	5	0	4	53	30	0	8	45	19	0	363	
4:20 PM	23	40	8	0	34	64	7	0	5	32	33	0	4	32	11	0	293	
4:25 PM	31	52	10	0	34	58	8	0	7	37	26	2	5	22	19	0	311	
4:30 PM	11	46	10	0	30	61	8	0	6	43	27	7	10	30	22	0	311	
4:35 PM	44	54	7	0	32	49	6	0	8	50	28	0	3	33	21	0	335	
4:40 PM	22	67	10	0	27	45	3	1	6	49	28	2	7	36	17	0	320	
4:45 PM	22	50	14	0	26	43	7	0	8	47	28	2	7	28	13	0	295	
4:50 PM	38	54	10	0	35	62	8	0	13	48	31	5	5	34	16	0	359	
4:55 PM	21	53	14	0	44	50	7	0	8	48	42	6	4	38	16	0	351	3853
5:00 PM	28	47	10	0	37	47	9	0	6	55	24	3	3	24	18	0	311	3888
5:05 PM	27	59	7	0	35	61	10	0	8	55	28	2	9	27	15	0	343	3896
5:10 PM	33	71	16	0	34	57	5	0	7	60	27	0	7	35	13	0	365	3957
5:15 PM	28	57	4	0	49	55	7	0	9	60	26	3	2	28	22	0	350	3944
5:20 PM	27	46	7	0	44	54	9	0	5	53	33	5	3	29	16	0	331	3982
5:25 PM	28	61	8	0	53	76	8	1	5	41	24	1	8	46	25	0	385	4056
5:30 PM	17	43	9	0	44	64	6	0	10	43	22	2	12	21	19	0	312	4057
5:35 PM	18	59	9	0	27	60	9	0	14	46	33	1	10	23	20	0	329	4051
5:40 PM	24	43	4	0	26	43	2	0	11	44	17	5	3	38	25	0	285	4016
5:45 PM	30	50	4	0	30	65	8	0	10	49	30	6	9	37	19	0	347	4068
5:50 PM	38	49	4	0	35	40	9	0	13	55	31	0	3	39	22	0	338	4047
5:55 PM	11	32	7	0	29	47	2	1	3	30	21	2	2	23	16	0	226	3922
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	332	656	76	0	584	740	96	4	76	616	332	36	52	412	252	0	4264	
Heavy Trucks	0	4	4		0	0	0		0	12	4		0	0	4		28	
Buses																		
Pedestrians		0				16				0				4			20	
Bicycles	4	0	0		0	0	4		0	0	0		0	0	4		12	
Scooters																		

Comments:




Appendix C: Technical Calculations

HCM 7th TWSC
1: Oakdale Road & Bridgewood Way

Martin Property TIS
Existing Conditions NP AM

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	98	103	953	821	5
Future Vol, veh/h	4	98	103	953	821	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	113	118	1095	944	6

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2279	475	949
Stage 1	947	-	-
Stage 2	1332	-	-
Critical Hdwy	6.645	6.945	4.145
Critical Hdwy Stg 1	5.845	-	-
Critical Hdwy Stg 2	5.445	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285
Pot Cap-1 Maneuver	38	535	716
Stage 1	337	-	-
Stage 2	244	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	22	535	716
Mov Cap-2 Maneuver	109	-	-
Stage 1	194	-	-
Stage 2	244	-	-































Approach	EB	NB	SB
HCM Control Delay, s/v15.38		1.07	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	716	-	463	-	-
HCM Lane V/C Ratio	0.165	-	0.253	-	-
HCM Control Delay (s/veh)	11	-	15.4	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1	-	-

HCM 7th Signalized Intersection Summary

2: Oakdale Road & Sylvan Avenue

Martin Property TIS
Existing Conditions NP AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 		 	 	
Traffic Volume (veh/h)	86	317	228	89	476	288	411	722	82	280	530	62
Future Volume (veh/h)	86	317	228	89	476	288	411	722	82	280	530	62
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	95	348	0	98	523	148	452	793	24	308	582	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	1477		124	1179	524	259	899	400	259	899	
Arrive On Green	0.14	0.42	0.00	0.07	0.33	0.33	0.08	0.25	0.25	0.08	0.25	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1581	3456	3554	1581	3456	3554	1585
Grp Volume(v), veh/h	95	348	0	98	523	148	452	793	24	308	582	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1581	1728	1777	1581	1728	1777	1585
Q Serve(g_s), s	5.8	7.6	0.0	6.5	13.8	6.2	9.0	25.7	0.9	9.0	17.6	0.0
Cycle Q Clear(g_c), s	5.8	7.6	0.0	6.5	13.8	6.2	9.0	25.7	0.9	9.0	17.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	1477		124	1179	524	259	899	400	259	899	
V/C Ratio(X)	0.37	0.24		0.79	0.44	0.28	1.74	0.88	0.06	1.19	0.65	
Avail Cap(c_a), veh/h	256	1477		312	1179	524	259	1001	445	259	1013	
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.66	0.66	0.00
Uniform Delay (d), s/veh	46.5	22.7	0.0	54.9	31.4	16.5	55.5	43.1	15.2	55.5	40.0	0.0
Incr Delay (d2), s/veh	1.1	0.4	0.0	12.5	1.2	1.3	350.3	8.6	0.1	107.6	0.8	0.0
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(50%),veh/ln	2.6	3.1	0.0	3.3	5.9	3.1	16.4	12.0	0.5	7.7	7.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.6	23.1	0.0	67.5	32.6	17.9	405.8	51.7	15.3	163.1	40.8	0.0
LnGrp LOS	D	C		E	C	B	F	D	B	F	D	
Approach Vol, veh/h	443			769			1269			890		
Approach Delay, s/veh	28.3			34.2			177.2			83.1		
Approach LOS	C			C			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	36.6	13.4	56.1	14.0	36.6	23.4	46.0				
Change Period (Y+Rc), s	5.0	* 6.2	5.0	6.2	5.0	6.2	6.2	* 6.2				
Max Green Setting (Gmax), s	9.0	* 34	21.0	33.8	9.0	33.8	15.0	* 40				
Max Q Clear Time (g_c+I1), s	11.0	19.6	8.5	9.6	11.0	27.7	7.8	15.8				
Green Ext Time (p_c), s	0.0	3.1	0.2	2.0	0.0	2.5	0.1	3.6				

Intersection Summary




HCM 7th Control Delay, s/veh 100.2
HCM 7th LOS F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 7th TWSC
1: Oakdale Road & Bridgewood Way

























Martin Property TIS
Existing Conditions NP PM

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	63	56	910	1126	5
Future Vol, veh/h	7	63	56	910	1126	5
Conflicting Peds, #/hr	0	0	6	0	0	6
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	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	7	66	59	958	1185	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2270	601	1197	0	-	0
Stage 1	1194	-	-	-	-	-
Stage 2	1076	-	-	-	-	-
Critical Hdwy	6.615	6.915	4.115	-	-	-
Critical Hdwy Stg 1	5.815	-	-	-	-	-
Critical Hdwy Stg 2	5.415	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	39	446	586	-	-	-
Stage 1	252	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	30	443	581	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	17.88	0.69		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	581	-	353	-	-	
HCM Lane V/C Ratio	0.101	-	0.209	-	-	
HCM Control Delay (s/veh)	11.9	-	17.9	-	-	
HCM Lane LOS	B	-	C	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.8	-	-	

HCM 7th Signalized Intersection Summary

2: Oakdale Road & Sylvan Avenue

Martin Property TIS
Existing Conditions NP PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	609	346	68	388	214	329	665	117	448	660	87
Future Volume (veh/h)	125	609	346	68	388	214	329	665	117	448	660	87
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		0.99	1.00		0.99	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	132	641	0	72	408	87	346	700	32	472	695	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	1558		93	1033	454	319	788	347	399	870	
Arrive On Green	0.19	0.44	0.00	0.05	0.29	0.29	0.09	0.22	0.22	0.12	0.24	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1562	3456	3554	1564	3456	3554	1585
Grp Volume(v), veh/h	132	641	0	72	408	87	346	700	32	472	695	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1562	1728	1777	1564	1728	1777	1585
Q Serve(g_s), s	8.4	16.1	0.0	5.2	12.0	4.1	12.0	24.8	1.3	15.0	23.9	0.0
Cycle Q Clear(g_c), s	8.4	16.1	0.0	5.2	12.0	4.1	12.0	24.8	1.3	15.0	23.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	1558		93	1033	454	319	788	347	399	870	
V/C Ratio(X)	0.39	0.41		0.78	0.39	0.19	1.08	0.89	0.09	1.18	0.80	
Avail Cap(c_a), veh/h	339	1558		233	1033	454	319	842	370	399	935	
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.36	0.36	0.00
Uniform Delay (d), s/veh	46.0	25.0	0.0	60.9	36.9	19.4	59.0	49.0	16.1	57.5	46.1	0.0
Incr Delay (d2), s/veh	0.9	0.8	0.0	15.4	1.1	0.9	74.9	10.9	0.1	92.1	1.7	0.0
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(50%),veh/ln	3.7	6.7	0.0	2.7	5.2	2.1	8.4	11.9	0.8	11.5	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.9	25.8	0.0	76.3	38.1	20.3	133.9	60.0	16.2	149.6	47.8	0.0
LnGrp LOS	D	C		E	D	C	F	E	B	F	D	
Approach Vol, veh/h	773			567			1078			1167		
Approach Delay, s/veh	29.4			40.2			82.4			89.0		
Approach LOS	C			D			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	38.0	11.8	63.2	20.0	35.0	31.0	44.0				
Change Period (Y+Rc), s	5.0	* 6.2	5.0	6.2	5.0	6.2	6.2	* 6.2				
Max Green Setting (Gmax), s	12.0	* 34	17.0	44.8	15.0	30.8	24.0	* 38				
Max Q Clear Time (g_c+l1), s	14.0	25.9	7.2	18.1	17.0	26.8	10.4	14.0				
Green Ext Time (p_c), s	0.0	2.7	0.1	4.2	0.0	1.6	0.3	2.6				

Intersection Summary




HCM 7th Control Delay, s/veh	66.4
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 7th TWSC
1: Oakdale Road & Bridgewood Way

























Martin Property TIS
Existing Conditions PP AM

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	98	103	977	889	7
Future Vol, veh/h	5	98	103	977	889	7
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	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	113	118	1123	1022	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2386	515	1030	0	-	0
Stage 1	1026	-	-	-	-	-
Stage 2	1360	-	-	-	-	-
Critical Hdwy	6.645	6.945	4.145	-	-	-
Critical Hdwy Stg 1	5.845	-	-	-	-	-
Critical Hdwy Stg 2	5.445	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	32	503	667	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	503	667	-	-	-
Mov Cap-2 Maneuver	95	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v17.04		1.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	667	-	417	-	-	
HCM Lane V/C Ratio	0.177	-	0.284	-	-	
HCM Control Delay (s/veh)	11.6	-	17	-	-	
HCM Lane LOS	B	-	C	-	-	
HCM 95th %tile Q(veh)	0.6	-	1.2	-	-	

HCM 7th Signalized Intersection Summary

2: Oakdale Road & Sylvan Avenue

Martin Property TIS
Existing Conditions PP AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	317	228	89	476	290	411	737	82	285	574	81
Future Volume (veh/h)	93	317	228	89	476	290	411	737	82	285	574	81
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	102	348	0	98	523	148	452	810	24	313	631	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	1464		124	1179	524	259	912	406	259	912	
Arrive On Green	0.14	0.41	0.00	0.07	0.33	0.33	0.08	0.26	0.26	0.08	0.26	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1581	3456	3554	1581	3456	3554	1585
Grp Volume(v), veh/h	102	348	0	98	523	148	452	810	24	313	631	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1581	1728	1777	1581	1728	1777	1585
Q Serve(g_s), s	6.3	7.7	0.0	6.5	13.8	6.2	9.0	26.3	0.9	9.0	19.3	0.0
Cycle Q Clear(g_c), s	6.3	7.7	0.0	6.5	13.8	6.2	9.0	26.3	0.9	9.0	19.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	1464		124	1179	524	259	912	406	259	912	
V/C Ratio(X)	0.41	0.24		0.79	0.44	0.28	1.74	0.89	0.06	1.21	0.69	
Avail Cap(c_a), veh/h	249	1464		312	1179	524	259	1001	445	259	1013	
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.59	0.00
Uniform Delay (d), s/veh	47.1	23.0	0.0	54.9	31.4	16.5	55.5	42.9	15.2	55.5	40.3	0.0
Incr Delay (d2), s/veh	1.3	0.4	0.0	12.5	1.2	1.3	350.3	9.3	0.1	113.1	1.1	0.0
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(50%),veh/ln	2.8	3.2	0.0	3.3	5.9	3.1	16.4	12.3	0.5	7.9	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.4	23.4	0.0	67.5	32.6	17.9	405.8	52.2	15.3	168.6	41.4	0.0
LnGrp LOS	D	C		E	C	B	F	D	B	F	D	
Approach Vol, veh/h	450			769			1286			944		
Approach Delay, s/veh	29.1			34.2			175.8			83.6		
Approach LOS	C			C			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	37.0	13.4	55.6	14.0	37.0	23.0	46.0				
Change Period (Y+Rc), s	5.0	* 6.2	5.0	6.2	5.0	6.2	6.2	* 6.2				
Max Green Setting (Gmax), s	9.0	* 34	21.0	33.8	9.0	33.8	15.0	* 40				
Max Q Clear Time (g_c+I1), s	11.0	21.3	8.5	9.7	11.0	28.3	8.3	15.8				
Green Ext Time (p_c), s	0.0	3.2	0.2	2.0	0.0	2.4	0.1	3.6				

Intersection Summary

HCM 7th Control Delay, s/veh 99.8
HCM 7th LOS F

Notes




* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 7th TWSC
3: Oakdale Road & Project Driveway

Martin Property TIS
Existing Conditions PP AM

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	27	957	25	9	826
Future Vol, veh/h	70	27	957	25	9	826
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	29	1040	27	10	898

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1522	1054	0
Stage 1	1054	-	-
Stage 2	468	-	-
Critical Hdwy	6.63	6.23	-
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.83	-	-
Follow-up Hdwy	3.519	3.319	-
Pot Cap-1 Maneuver	119	274	-
Stage 1	334	-	-
Stage 2	597	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	117	274	-
Mov Cap-2 Maneuver	242	-	-
Stage 1	334	-	-
Stage 2	585	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	29.47	0	0.32
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	250	39
HCM Lane V/C Ratio	-	-	0.421	0.015
HCM Control Delay (s/veh)	-	-	29.5	10.6
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	2	0

HCM 7th TWSC
1: Oakdale Road & Bridgewood Way

Martin Property TIS
Existing Conditions PP PM

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	✕✕			↑	↑↑	
Traffic Vol, veh/h	9	63	56	988	1172	6
Future Vol, veh/h	9	63	56	988	1172	6
Conflicting Peds, #/hr	0	0	6	0	0	6
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	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	9	66	59	1040	1234	6

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2401	626	1246	0	-	0
Stage 1	1243	-	-	-	-	-
Stage 2	1158	-	-	-	-	-
Critical Hdwy	6.615	6.915	4.115	-	-	-
Critical Hdwy Stg 1	5.815	-	-	-	-	-
Critical Hdwy Stg 2	5.415	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	2.2095	-	-	-
Pot Cap-1 Maneuver	32	430	561	-	-	-
Stage 1	238	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	24	427	557	-	-	-
Mov Cap-2 Maneuver	111	-	-	-	-	-
Stage 1	177	-	-	-	-	-
Stage 2	298	-	-	-	-	-

























Approach	EB	NB	SB
HCM Control Delay, s/v20.01		0.66	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	557	-	315	-	-
HCM Lane V/C Ratio	0.106	-	0.241	-	-
HCM Control Delay (s/veh)	12.2	-	20	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.9	-	-

HCM 7th Signalized Intersection Summary

2: Oakdale Road & Sylvan Avenue

Martin Property TIS
Existing Conditions PP PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	609	346	68	388	220	329	715	117	451	690	100
Future Volume (veh/h)	147	609	346	68	388	220	329	715	117	451	690	100
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		0.99	1.00		0.99	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	155	641	0	72	408	88	346	753	32	475	726	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	1527		93	1033	454	319	819	361	399	901	
Arrive On Green	0.18	0.43	0.00	0.05	0.29	0.29	0.09	0.23	0.23	0.12	0.25	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1562	3456	3554	1564	3456	3554	1585
Grp Volume(v), veh/h	155	641	0	72	408	88	346	753	32	475	726	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1562	1728	1777	1564	1728	1777	1585
Q Serve(g_s), s	10.1	16.3	0.0	5.2	12.0	4.1	12.0	26.9	1.3	15.0	24.9	0.0
Cycle Q Clear(g_c), s	10.1	16.3	0.0	5.2	12.0	4.1	12.0	26.9	1.3	15.0	24.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1527		93	1033	454	319	819	361	399	901	
V/C Ratio(X)	0.48	0.42		0.78	0.39	0.19	1.08	0.92	0.09	1.19	0.81	
Avail Cap(c_a), veh/h	329	1527		233	1033	454	319	842	371	399	935	
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29	0.29	0.00
Uniform Delay (d), s/veh	47.7	25.8	0.0	60.9	36.9	19.4	59.0	48.8	16.1	57.5	45.5	0.0
Incr Delay (d2), s/veh	1.3	0.8	0.0	15.4	1.1	0.9	74.9	14.8	0.1	93.6	1.5	0.0
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(50%),veh/ln	4.5	6.8	0.0	2.7	5.2	2.1	8.4	13.2	0.8	11.6	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.0	26.6	0.0	76.3	38.1	20.4	133.9	63.6	16.2	151.1	47.0	0.0
LnGrp LOS	D	C		E	D	C	F	E	B	F	D	
Approach Vol, veh/h	796			568			1131			1201		
Approach Delay, s/veh	31.0			40.2			83.8			88.2		
Approach LOS	C			D			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	39.2	11.8	62.1	20.0	36.2	29.8	44.0				
Change Period (Y+Rc), s	5.0	* 6.2	5.0	6.2	5.0	6.2	6.2	* 6.2				
Max Green Setting (Gmax), s	12.0	* 34	17.0	44.8	15.0	30.8	24.0	* 38				
Max Q Clear Time (g_c+l1), s	14.0	26.9	7.2	18.3	17.0	28.9	12.1	14.0				
Green Ext Time (p_c), s	0.0	2.6	0.1	4.2	0.0	0.9	0.4	2.6				

Intersection Summary

HCM 7th Control Delay, s/veh 67.1
HCM 7th LOS E

Notes




* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 7th TWSC
3: Oakdale Road & Project Driveway

Martin Property TIS
Existing Conditions PP PM

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	18	917	80	31	1131
Future Vol, veh/h	47	18	917	80	31	1131
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	20	997	87	34	1229

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1722	1040	0
Stage 1	1040	-	-
Stage 2	682	-	-
Critical Hdwy	6.63	6.23	-
Critical Hdwy Stg 1	5.43	-	-
Critical Hdwy Stg 2	5.83	-	-
Follow-up Hdwy	3.519	3.319	-
Pot Cap-1 Maneuver	89	279	-
Stage 1	339	-	-
Stage 2	464	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	82	279	-
Mov Cap-2 Maneuver	209	-	-
Stage 1	339	-	-
Stage 2	427	-	-

























Approach	WB	NB	SB
HCM Control Delay, s/v	28.19	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	225	96
HCM Lane V/C Ratio	-	-	0.314	0.053
HCM Control Delay (s/veh)	-	-	28.2	10.9
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	1.3	0.2

HCM 7th Signalized Intersection Summary

2: Oakdale Road & Sylvan Avenue

Martin Property TIS
Existing Conditions PP AM Optimized

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	317	228	89	476	290	411	737	82	285	574	81
Future Volume (veh/h)	93	317	228	89	476	290	411	737	82	285	574	81
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	102	348	0	98	523	148	452	810	24	313	631	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	307	1317		122	912	405	516	949	422	370	799	
Arrive On Green	0.17	0.37	0.00	0.07	0.26	0.26	0.15	0.27	0.27	0.11	0.22	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1579	3456	3554	1581	3456	3554	1585
Grp Volume(v), veh/h	102	348	0	98	523	148	452	810	24	313	631	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1579	1728	1777	1581	1728	1777	1585
Q Serve(g_s), s	6.0	8.2	0.0	6.5	15.4	6.2	15.4	26.0	0.8	10.7	20.1	0.0
Cycle Q Clear(g_c), s	6.0	8.2	0.0	6.5	15.4	6.2	15.4	26.0	0.8	10.7	20.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	1317		122	912	405	516	949	422	370	799	
V/C Ratio(X)	0.33	0.26		0.80	0.57	0.37	0.88	0.85	0.06	0.85	0.79	
Avail Cap(c_a), veh/h	307	1317		148	912	405	576	1179	525	403	1013	
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.59	0.00
Uniform Delay (d), s/veh	43.6	26.3	0.0	55.1	38.9	16.6	50.0	41.8	12.7	52.6	43.8	0.0
Incr Delay (d2), s/veh	0.8	0.5	0.0	23.7	2.6	2.5	13.5	5.2	0.1	9.3	2.0	0.0
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(50%),veh/ln	2.7	3.4	0.0	3.6	6.8	3.6	7.4	11.6	0.5	5.0	8.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.3	26.8	0.0	78.8	41.5	19.1	63.5	47.0	12.8	61.9	45.8	0.0
LnGrp LOS	D	C		E	D	B	E	D	B	E	D	
Approach Vol, veh/h	450			769			1286			944		
Approach Delay, s/veh	30.8			41.9			52.1			51.1		
Approach LOS	C			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.9	33.2	13.2	50.7	17.9	38.2	26.9	37.0				
Change Period (Y+Rc), s	5.0	* 6.2	5.0	6.2	5.0	6.2	6.2	* 6.2				
Max Green Setting (Gmax), s	20.0	* 34	10.0	33.8	14.0	39.8	13.0	* 31				
Max Q Clear Time (g_c+l1), s	17.4	22.1	8.5	10.2	12.7	28.0	8.0	17.4				
Green Ext Time (p_c), s	0.6	3.1	0.0	2.0	0.2	4.0	0.1	3.0				

Intersection Summary

HCM 7th Control Delay, s/veh 46.8
HCM 7th LOS D

























Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 7th Signalized Intersection Summary

2: Oakdale Road & Sylvan Avenue

Martin Property TIS
Existing Conditions PP PM Optimized

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	609	346	68	388	220	329	715	117	451	690	100
Future Volume (veh/h)	147	609	346	68	388	220	329	715	117	451	690	100
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		0.98	1.00		0.99	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	155	641	0	72	408	88	346	753	32	475	726	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	1351		92	869	381	413	849	374	542	982	
Arrive On Green	0.18	0.38	0.00	0.05	0.24	0.24	0.12	0.24	0.24	0.16	0.28	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1558	3456	3554	1565	3456	3554	1585
Grp Volume(v), veh/h	155	641	0	72	408	88	346	753	32	475	726	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1558	1728	1777	1565	1728	1777	1585
Q Serve(g_s), s	10.2	17.7	0.0	5.2	12.7	4.3	12.7	26.6	1.3	17.5	24.2	0.0
Cycle Q Clear(g_c), s	10.2	17.7	0.0	5.2	12.7	4.3	12.7	26.6	1.3	17.5	24.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	317	1351		92	869	381	413	849	374	542	982	
V/C Ratio(X)	0.49	0.47		0.78	0.47	0.23	0.84	0.89	0.09	0.88	0.74	
Avail Cap(c_a), veh/h	317	1351		164	869	381	558	951	419	638	1044	
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29	0.29	0.00
Uniform Delay (d), s/veh	48.1	30.5	0.0	60.9	41.9	20.8	56.0	47.8	15.8	53.6	42.8	0.0
Incr Delay (d2), s/veh	1.4	1.2	0.0	15.8	1.8	1.4	8.8	9.4	0.1	4.0	0.8	0.0
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(50%),veh/ln	4.6	7.6	0.0	2.7	5.6	2.3	5.9	12.5	0.8	7.7	10.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.5	31.7	0.0	76.7	43.7	22.2	64.8	57.2	15.9	57.5	43.6	0.0
LnGrp LOS	D	C		E	D	C	E	E	B	E	D	
Approach Vol, veh/h	796			568			1131			1201		
Approach Delay, s/veh	35.1			44.6			58.4			49.1		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.5	42.1	11.7	55.6	25.4	37.3	29.3	38.0				
Change Period (Y+Rc), s	5.0	* 6.2	5.0	6.2	5.0	6.2	6.2	* 6.2				
Max Green Setting (Gmax), s	21.0	* 38	12.0	36.8	24.0	34.8	17.0	* 32				
Max Q Clear Time (g_c+I1), s	14.7	26.2	7.2	19.7	19.5	28.6	12.2	14.7				
Green Ext Time (p_c), s	0.8	3.6	0.1	3.6	0.9	2.5	0.2	2.4				

Intersection Summary

HCM 7th Control Delay, s/veh 48.2
HCM 7th LOS D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.